

OCTOBER 20TH, 2021



History of Logic from Aristotle to Godel

Raul Corazzon

Table of Contents

[History of Logic from Aristotle to Godel \(ebook version\)](#)

[What is New on This Site: Recent Updates](#)

[History of Logic](#)

[The History of Logic and Its Relationship with Ontology](#)

[Bibliography of General Studies on the History of Logic](#)

[Index of the Section: Aristotle's Logic](#)

[Aristotle's Logic: General Survey and Introductory](#)

[Readings](#)

[Bibliography on the Logic of Aristotle](#)

[Aristotle's De Interpretatione: Philosophy of Language](#)

[Bibliography on Aristotle's De Interpretatione](#)

[Bibliography of Ancient Commentaries on De](#)

[Interpretatione](#)

[Aristotle: the Theory of Categorical Syllogism](#)

[Bibliography on Aristotle's Theory of Categorical](#)

[Syllogism](#)

[Index of the Section Ancient Logic after Aristotle](#)

[History of Ancient Logic in the Hellenistic Period](#)

[Bibliography of Ancient Logic in the Hellenistic Period](#)

[Peripatetic Logic: Eudemus of Rhodes and Theophrastus](#)

[Bibliography on the Logic of Eudemus and Theophrastus](#)

[The Dialectical School of Logic: a Selected Bibliography.](#)

[Bibliography on the Master Argument of Diodorus](#)

[Cronus](#)

[Stoic Logic: The Dialectic from Zeno to Chrysippus](#)

[The Stoic Doctrine of Lekta \(Sayables\).](#)

[Ancient Stoicism: Critical Editions and Translations](#)

[Annotated Bibliography on Ancient Stoic Dialectic: A - E](#)

[Selected Bibliography on Stoic Logic. Second part: F - Z](#)

[Bibliography on Stoic Philosophy of Language](#)

[Zeno, Cleanthes, Chrysippus. A Bibliography.](#)

[Cicero: Logic and Rhetoric in His Philosophical Works](#)

[Editions of the Philosophical Works of Cicero](#)

[The Philosophical Works of Cicero. A Selected](#)

[Bibliography.](#)

[Boethius: Editions and English Translations](#)

[Boethius' Logic as a Discourse on Being](#)
[Boethius' Logic and Metaphysics. An Annotated Bibliography](#)
[Index of the Section History of Medieval Logic](#)
[History of Medieval Logic: A General Overview Bibliography on Medieval Logic: General Works A - K](#)
[Bibliography on Medieval Logic: General Works L - Z](#)
[Medieval theories of Supposition and Mental Language Bibliography on the medieval theories of supposition \(A - F\)](#)
[Bibliography of Medieval theories of mental language \(M - Z\)](#)
[Abelard: Logic, Semantics and Ontology](#)
[Theories of the Copula in the Logical Works of Abelard](#)
[Abelard's Logical Works: Editions, Translations](#)
[Abelard's Logic and Ontology. Bibliography: A - L](#)
[Selected Bibliography on the Logic of Peter Abelard: M - Z](#)
[Abelard's Philosophy. Bibliography of the English Studies](#)
[Pierre Abélard. Bibliographie des études en Français](#)
[Pietro Abelardo. Bibliografia degli studi italiani](#)
[Petrus Abaelardus: Ausgewählte Studien in Deutsch](#)
[Pedro Abelardo. Bibliografía des estudios en español](#)
[Pedro Abelardo. Bibliografia dos estudos em português](#)
[Buridan's Logical Works: Summulae de dialectica](#)
[Buridan's Treatise on Consequences and Other Writings](#)
[Buridan Logical and Metaphysical Works: A Bibliography](#)
[Buridan's Logic and Metaphysics. A Bibliography \(First Part\)](#)
[Bibliography on Buridan's Logic and Metaphysics \(L-Z\)](#)
[Index of the Section History of Modern Logic](#)
[History of Renaissance and Modern Logic from 1400 to 1850](#)
[Bibliography on the History of Renaissance and Modern Logic](#)
[Leibniz on Logic, Language and Signs: a Bibliography \(A-K\)](#)

[Leibniz on Logic, Language and Signs: a Bibliography \(L-Z\)](#)

[Index of the Section History of Contemporary Logic](#)

[History of Contemporary Logic from Boole to Godel](#)

[Bibliography on the History of Contemporary Logic](#)

[Prominent Logicians from Aristotle to Godel \(1931\)](#)

[Index of the Bibliographies of Historians of Logic](#)

[E. Jennifer Ashworth on the History of Logic](#)

[E. J. Ashworth on the History of Logic \(1977-1988\)](#)

[E. J. Ashworth on the History of Logic \(1997-2015\)](#)

[E. J. Ashworth on the History of Logic \(1997-2015\)](#)

[Bibliography of L. M. de Rijk from 1950 to 1974](#)

[Bibliography of L. M. de Rijk from 1975 to 1982](#)

[Bibliography of L. M. de Rijk from 1983 to 1990](#)

[Bibliography of L. M. de Rijk from 1991 to 2012](#)

[Mauro Nasti de Vincentis. Bibliography 1981-2010](#)

[Wilhelm Risse's writings on the History of Logic](#)

[General Informations to Readers on This Site](#)

[List of the Indexes](#)



[History of Logic from Aristotle to Gödel](#)

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[History of Logic from Aristotle to Gödel](#)

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HISTORY OF LOGIC FROM ARISTOTLE TO GÖDEL

N.B. For the most important logicians separated pages are in preparation.

History of Logic

General Introduction

[Logic and Ontology from an Historical Perspective](#)

[General Works and Bibliographies on the History of Logic](#)

The Logical Works of Aristotle

[Aristotle's Logic: General Survey and Introductory Readings](#)

[Selected Bibliography on the Logic of Aristotle:
General and Introductory Readings](#)

Aristotle's Earlier Dialectic: the *Topics* and *Sophistical Refutations*

[Aristotle's *De Interpretatione*: Semantics and Philosophy of Language](#)

[Annotated bibliography on Aristotle's De Interpretatione \(*Peri Hermeneias*\)](#)

[Aristotle's *Prior Analytics*: the Theory of Categorical Syllogism](#)

[Selected Bibliography on Aristotle's Theory of Categorical Syllogism](#)

Aristotle's *Prior Analytics*: the Theory of Modal Syllogism

Selected Bibliography on Aristotle's Theory of Modal Syllogism

Aristotle's *Posterior Analytics*: The Theory of Demonstration

Selected Bibliography on Aristotle's *Posterior Analytics*

Ancient Logic after Aristotle

[Peripatetic Logic: Eudemus of Rhodes and Theophrastus of Eresus](#)

[Selected Bibliography on the Logic of Eudemus and Theophrastus](#)

[History of Ancient Logic in the Hellenistic Period](#)

[Bibliography of Ancient Logic in the Hellenistic Period](#)

The Dialectical School and the Origins of Propositional Logic

[Selected Bibliography on the Dialectical School and the Origins of Propositional Logic](#)

[Bibliography on the *Master Argument* of Diodorus Cronus](#)

Logic in Ancient Stoicism

[Critical Editions and Translations of the Fragments and *Testimonia*](#)

[Stoic Logic: The Dialectic from Zeno to Chrysippus](#)

[The Stoic Doctrine of *Lekta* \(Sayables\)](#)

Ancient Stoic Rhetoric (under construction)

Stoic Philosophy of Language and Grammar (under construction)

[Selected Bibliography on Stoic Logic: A - E](#)

[Selected Bibliography on Stoic Logic: F - Z](#)

[Bibliography on Stoic Philosophy of Language, Grammar, Rhetoric](#)

[Early Stoic Logicians: Zeno of Citium, Cleanthes, Chrysippus](#)

Other Aspects of Ancient Logic

[Critical Editions and Translations of the Philosophical Works of Cicero](#)

[Logic and Rhetoric in the Philosophical Works of Cicero](#)

[The Philosophical Works of Cicero. A Selected Bibliography](#)

Sextus Empiricus and the Skeptical Criticism of Logic and Truth

Porphyry's *Isagoge* and his Commentary to Aristotle's *Categories*

Boethius' Contribution to the Development of Medieval Logic

[The Philosophical Works of Boethius. Editions and Translations](#)

[Selected Bibliography on the Logical Works of Boethius](#)

The Development of Medieval Logic

[Medieval Logic: A General Overview](#)

General Bibliography on Medieval Logic:

[General Studies A - K](#)

[General Studies L - Z](#)

Latin Logic until the Eleventh Century

Selected Bibliography on Latin Logic until the Eleventh Century

The Birth of the Liberal Arts: the *Trivium* (Grammar, Dialectic, Rhetoric)

Logic and Grammar in the Twelfth Century

Selected Bibliography on the Twelfth Century

The Development of Logic in the Thirteenth Century

The Development of Logic in the Fourteenth Century

Selected Bibliography on the Thirteenth and Fourteenth Centuries

[Medieval Theories of Supposition \(Reference\) and Mental Language](#)

Bibliography on the Medieval Theories of Supposition and Mental Language:

[Supposition A - L](#)

[Supposition M - Z](#)

Pages in English on the Philosophy of Peter Abelard:

[I. Logic, Semantics and Ontology in the Work of Abelard](#)

[II. Theories of the Copula in the Logical Works of Abelard](#)

Selected Bibliography on His Philosophy:

[Editions and Translations of the Logical Works](#)

[Bibliography of English Studies on Peter Abelard: General Studies, Philosophy of Language and Mind](#)

Selected Bibliography on His Logic and Metaphysics:

[First Part: A - L](#)

[Second Part: M - Z](#)

Bibliographies on Abelard in other languages:

[Bibliographie des études en Français](#)

[Bibliographie der Studien auf Deutsch](#)

[Bibliografia degli studi in Italiano](#)

[Bibliografía de estudios en Español](#)

[Bibliografia de estudos em Português](#)

An Overview of Buridan's Logical Works:

[Editions, Translations and Studies on the Manuscript Tradition](#)

[I. An Overview of the *Summulae de Dialectica*](#)

[II. The *Treatise on Consequences* and Other Writings](#)

Selected Bibliography on the Logic and Metaphysics of Buridan:

[Buridan A - L](#)

[Buridan M - Z](#)

The Development of Modern Logic

[History of Renaissance and Modern Logic from 1400 to 1850](#)

[Selected Bibliography on the History of Renaissance and Modern Logic](#)

Leibniz on Logic and Semiotics: the Project of a Universal Language

Bibliography of Leibniz on Logic and Semiotics:

[Leibniz A - K](#)

[Leibniz L - Z](#)

The Rise of Contemporary Logic

[The Period from Boole to Gödel](#)

[Selected Bibliography on the Contemporary Symbolic
Logic from Boole to Gödel](#)

Appendix: The Great Logicians

[A Selection of Prominent Logicians from Aristotle to Gödel
\(1931\)](#)



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The History of Logic from Aristotle to Gödel

INTRODUCTION

"Preliminary definition of the subject matter of the history of logic is hard to come by. For apart from 'philosophy' there is perhaps no name of a branch of knowledge that has been given so many meanings as 'logic'. Sometimes the whole of philosophy, and even knowledge in general, has been thus named, from metaphysics on the one hand, cf. Hegel, to aesthetics ('logic of beauty') on the other, with psychology, epistemology, mathematics etc. in between. With such a wide choice it is quite impossible to include in a history of logical problems all that has been termed 'logic' in the course of western thought. To do so would practically involve writing a general history of philosophy. But it does not follow that the use of the name 'logic' must be quite arbitrary, for history provides several clues to guide a choice between its many meanings.

This choice can be arrived at by the following stages.

1. First let us discard whatever most authors either expressly ascribe to some other discipline, or call 'logic' with the addition of an adjective, as for example epistemology, transcendental logic, ontology etc.

2. When we examine what remains, we find that there is one thinker who so distinctly marked out the basic problems of this residual domain that all later western inquirers trace their descent from him: [Aristotle](#). Admittedly, in the course of centuries very many of these inquirers -- among them even his principal pupil and successor [Theophrastus](#) -- have altered Aristotelian positions and replaced them with others. But the essential problematic of their work was, so far as we know, in constant dependence in one way or another on that of Aristotle *Organon*. Consequently we shall denote as 'logic' primarily those problems which have developed from that problematic.

3. When we come to the [post-Aristotelian](#) history of logic, we can easily see that one part of the *Organon* has exercised the most decisive influence, namely the Prior Analytics. At some periods other parts too, such as the Topics or the Posterior Analytics, have indeed been keenly investigated and developed. But it is generally true of all periods marked by an active interest in the *Organon* that the problems mainly discussed are of the kind already to hand in the Prior Analytics. So the third step brings us to the point of describing as 'logic' in the stricter sense that kind of problematic presented in the Prior Analytics.

4. The [Prior Analytics](#) treats of the so-called syllogism, this being defined as logos in which if something is posited, something else necessarily follows. Moreover such *logoi* are there treated as formulas which exhibit variables in place of words with constant meaning; an example is 'B belongs to all A'. The problem evidently, though not explicitly, presented by Aristotle in this epoch-making work, could be formulated as follows. What formulas of the prescribed type, when their variables are replaced by constants, yield conditional statements such that when the antecedent is accepted, the consequent must be admitted? Such formulas are called 'logical sentences'. We shall accordingly treat sentences of this kind as a principal subject of logic." (pp. 2-3)

From: Joseph Bochenski, *A History of Formal Logic*, New York: Chelsea Publishing Co. 1961.

LOGIC AND ONTOLOGY

The question "how are logic and ontology interrelated?" is an ambiguous question, that is, it can refer either to logic and ontology themselves or to the metatheories of logic and ontology (that is, to the views about them). Furthermore, in the first case, both logic and ontology may be considered either objectively or subjectively.

(1) If the question refers to logic and ontology themselves considered objectively (that is, in their content), the disciplines are seen as sets of laws and/or rules, and so the problem is purely logical. It will be clear that its solution depends largely on the content of logic and of ontology as they were constructed at a given time.

(2) If the question refers to the same, but as seen subjectively (that is, in as far as they were conceived by some thinkers or groups of thinkers), then it is about empirical facts and is then a historical question: how did the fact that x held the ontology O influence the fact that he also held the logic L or inversely?

(3) Finally, if the question is concerned not with the two systems as they are but rather with the metatheoretical views about them (that is, with the corresponding philosophies of logic), the question is a quite different one. That this is so is indicated by the fact that often the same type of logic was philosophically interpreted in a different manner by two different schools. This question, in turn, can be considered either logically or historically. It should be clear that the first question is fundamental. Therefore, the principal focus of this presentation will be upon it. The philosophy of logic and ontology will be treated only secondarily, while the historical question of the

mutual factual influences of doctrines about them will be only marginally noted.

Now to state at once one of the principal conclusions of the present investigation, it must be confessed that there is considerable confusion about that basic question. Almost any imaginable answer has been proposed by one or another philosopher. To mention only two of the extreme views, respectable logicians have maintained that there is a complete identity of both disciplines (thus, Scholz) and that there is no relation whatsoever between them (thus, Nagel). The very fact that this is so requires an explanation. As is always so in such cases, this explanation must be historical.

One reason for the unfortunate state prevailing in investigations of this problem can readily be identified: ignorance. Most ontologists do not know even the ABC's of logic. But the inverse is also true: most logicians do not have the least idea what ontology might be. These deficiencies are often combined, on both sides, with value judgments of an unkind sort. Thus, to most ontologists, logic does not seem to be a serious discipline, although they concede that it provides (hélas!) some practical results for computer science. On the other hand, ontology is merely nonsense in the estimation of many logicians. It is little wonder that such scholars produce few worthwhile contributions regarding the relations of the two disciplines.

But this is not the whole answer. The present bifurcation did not always prevail. There have been ontologists who were well instructed in logic and who were even creative logicians in their own right ; Thomas Aquinas and Uddyotakâra (seventh century) are examples. There were also logicians who knew a good deal about ontology; one need think only of Leibniz and of Whitehead. Nevertheless, confusion about our problem is widespread across the ages. Some explanation must be offered for this fact, and once again it has to be explained historically. (pp. 274-275)
(...)

The history begins with Aristotle, as so many philosophical questions do. Nor is it a question of that history merely beginning

with him. For in many cases one gets the impression that where "the Master of those who know" (Dante) failed to perceive or to formulate a problem, his successors had a difficult time at formulating or solving it. Among these problems is that of the relations between logic and ontology.

The following is a brief description of both disciplines as they appear to the unbiased reader in the Aristotelian corpus. There is a book, or rather a collection of writings, called "*Metaphysics*" by Andronikos Rhodes. There is also a collection of works which received the name "*Organon*" from the commentators. None of these names derive from Aristotle himself. There can be no doubt, however, that we find in his writings a considerable number of doctrines belonging to what will subsequently be called "logic" and "ontology" respectively.

As regards ontology, Aristotle talks about a "first philosophy" and a "divine science." He says that they are about being as being; what we see here is an attempt to define this discipline. But as far as logic is concerned, we find no name for it in his writings. (...) Still less is there any attempt to define the subject matter of logic. If, however, we turn from his philosophy of logic and of ontology to the theories themselves (that is, to the systems Aristotle developed), it is relatively easy to describe what he would have meant by "ontology" and "logic" respectively, if he had such terms.

Regarding ontology, we should first note that Aristotle, unlike many later thinkers, did not believe that there is an entity or even a meaning unambiguously associated with the term "being." In one of those passages which can certainly be esteemed as a stroke of genius, Aristotle explicitly states that "being" is an ambiguous term; he justifies this assertion by a sort of embryonic theory of types. And yet, we find extensive discussions of the characteristics of entities in general in the *Metaphysics* and elsewhere. On closer inspection, we discover that his ontological doctrines can be divided into two classes.

First of all, in the fourth book of his *Metaphysics*, Aristotle undertakes to state and discuss the "principles" -- namely, non-

contradiction and the excluded middle. (Aristotle made explicit use of the principle of identity in his logic, but never made it the object of a similar study.) Next we have a number of analyses of concrete entities. Of these the most conspicuous are the doctrine of act and potency and the table of the categories (also studied in the *Organon*, but obviously belonging to the "first philosophy"). The last named could be and has often been viewed as a classification of entities. But it seems more consistent with Aristotle's thought to consider it as a sort of analysis of a concrete entity into its various aspects. (...)

In summary, the Aristotelian ontology appears to be a study (1) of (isomorphically, we would say) common properties of all entities and (2) of the aspects into which they can be analyzed. Both sorts of studies are about *real objects*. One distinctive characteristic of this ontology is its conspicuous lack of existential statements, which is contrary to what we find in what is now commonly called "metaphysics". (pp. 279-281)

(...)

In summary, then, Aristotle left: (1) an ontology conceived as a theory of real entities in general and of their most general aspects; this discipline is defined; (2) two quite different systems of logic: a technology of discussion and an object-linguistic formal logic; (3) a considerable overlapping of both disciplines (for example, the "principles," the categories, etc.) ; (4) not even a hint, direct or indirect, as to what formal logic might be about ; in other words, no philosophy of logic at all.

It should be clear that in that frame of reference, the question of the relations between logic and ontology cannot even be clearly stated. For we do not know what logic is nor which of the two logics has to be considered nor where are the boundaries between it and ontology.

And yet that is the frame of reference within which most of the Western discussions of our problem will develop. That is, so it seems, the explanation of the confusion reigning in our field. With the [Stoics](#), we find a clear choice between the alternative conceptions of logic: they opt for "dialectics," the art of arguing.

This does not mean that they remained at the level of the Topics. On the contrary, their logic of propositions, magnificently developed, is formal logic. But it is conceived as being a set of rules of arguing.

Moreover, the Stoics were the first to formulate a consistent theory of the object of logic. Logic is, according to them, radically different from ontology of the Aristotelian type. There is, it is true, no ontology in their philosophy; and what corresponds to the Aristotelian table of categories is considered to be a part of logic. But the subject matter of logic, the meanings, is sharply distinguished from what is real. For, whereas everything which is real, including mental entities, is a body in the Stoics' view, the meanings are not bodies. They are ideal entities.

Thus the first known philosophy of logic emphasizes the radical difference and independence of logic as regards ontology.

The [Scholastics](#) make no use of the term "ontology" and discuss subjects which will subsequently be called "ontological" in the context of their commentaries on Aristotle's *Metaphysics*. As compared with the latter, there are some important developments. For example, much consideration is given to the semantic status of "being." We are aware of several positions adopted regarding this problem: while the Thomists considered "being" as analogous (that is, basically a systematically ambiguous term), others, such as the Ockhamists, held that it was purely ambiguous; Scotists, on the other hand, claimed that it is a "genus" (that is, not an ambiguous expression). Depending on the position assumed, some philosophers will develop a general theory of being, while others will not. In addition, we find a few new chapters in ontology: above all, the doctrine of the distinction between essence and existence, the theory of the "transcendental" properties of all entities, and, of course, a rich technical elaboration of every doctrine. With these exceptions, the subject matter of ontology is the same as that found in Aristotle. When we turn to logic, the situation is quite different. While incorporating and developing a number of Aristotelian doctrines, Scholastic logic is very much un-Aristotelian insofar as its method

and approach are concerned, but also, to a large extent, as regards the content. It is completely metalinguistic and consists of rules. But it is unlike Stoic logic as well, for its explicit concern is not with mere meanings but rather with what were called propositions (meaningful sentences). Semantics undergoes tremendous development during this period.

This being so, several important facts which are relevant to our problem emerge. First of all, a sharp distinction between logic and ontology is explicitly established: the former is metalinguistic, the latter, object-linguistic; logic formulates rules, ontology, laws. Secondly, given this distinction and the nature of the Aristotelian corpus, a curious duplication of doctrines appears: problems are treated twice, once in logic and then again in ontology. As Ockham noted, there are two principles of noncontradiction: one ontological, stated in object-language, and another logical, formulated in meta-linguistic terms.

The Scholastics also formulated various philosophies of logic. They had several common views. For one, logic, while being primarily a methodology of reasoning and arguing, is said to be also a theory of certain entities. Second, they all shared the assumption that logic is not about "first intentions," which are dealt with in ontology, but rather about "second intentions." However, these terms assumed very different meanings in the context of different schools. (pp. 282-283)

(...)

The [modern era](#), prior to the rise of mathematical logic, is an alogical and a largely unontological period. It opens with the Humanists; in their view, if logic has any usefulness at all, it is only as a set of rules for everyday arguments: it is an inferior sort of rhetoric, as Valla put it. Later on, when the scientific spirit began to rise, even the most rationalistic thinkers, such as Descartes, would not dare to reconsider the Humanists' total condemnation of "scholastic subtleties," including formal logic. Gradually, the so-called conventional logic was formulated. The latter consists of extracts from Scholastic logic which omit almost every logical matter not connected with the theory of the

assertoric syllogism (thus, the logic of propositions among others) and with the addition of a number of methodological doctrines. Logic is quite clearly conceived of as "dialectics," "the art of thinking," as the authors of the influential *Logique de Port-Royal* titled it. Philosophically, there is a novelty: widespread psychologism, according to which logic has as its object mental entities and activities (concepts, judgments, reasonings).

There is, of course, one great exception -- [Leibniz](#), a logician of genius and an important thinker in the field of ontology. His ontology has been popularized by Wolff; in the latter's work the term "ontology" is clearly defined as designating the most general part of metaphysics, dealing with "being in general" (quite in the Aristotelian spirit). Leibnizian logic is mathematical and should rather be considered together with more recent logics, for its influence on the seventeenth, eighteenth, and nineteenth centuries was almost negligible. Leibniz also established his own philosophy of logic, which can only be understood in light of his logic. Our discussion of this will be deferred as well.

But, apart from Leibniz, the situation of our problem is not much different from that found in the Stoics and Scholastics: as logic is concerned with the mental behavior of men and ontology with being in general, the separation of the two is just as sharp as in the older schools. Indeed, this separation is reinforced by the fact that logic is now thought of as being a purely practical discipline and not as a theoretical one.

The whole course of the evolution between Aristotle and Boole may be summarized as follows. Ontology, whenever present, is on the whole of the Aristotelian type: a general theory of real entities. Regarding logic, the great majority of thinkers opt for the first Aristotelian logic, that of the Topics; they cultivate this discipline as a methodology of thought. While it is true that some Scholastics admitted a theory founding such a methodology, their logic nevertheless belongs to the type outlined in the Topics, not to that of the Prior Analytics. With such an assumption as a basis, whatever philosophy of logic they developed--whether conceived as a theory of meanings, of second intentions, of syntax or of

mental entities, it was always radically different from ontology." (pp. 284-285)

From: Joseph Bochenski, "Logic and Ontology", *Philosophy East and West*, 24, 1974, pp. 275-292.

"Aristotle was the founder not only of logic in western philosophy, but of ontology as well, which he described in his *Metaphysics* and the *Categories* as a study of the common properties of all entities, and of the categorial aspects into which they can be analyzed. The principal method of ontology has been one or another form of categorial analysis, depending on whether the analysis was directed upon the structure of reality, as in Aristotle's case, or upon the structure of thought and reason, as, e.g., in Kant's *Critique of Pure Reason*. Viewed in this way, the two subjects of logic and ontology could hardly be more different, and many schools in the history of philosophy, such as the Stoics, saw no common ground between them. Logic was only a system of rules for how to argue successfully, and ontology, as a categorial analysis and general theory of what there is (in the physical universe), was a system of categories and laws about being.

Scholastic logicians also drew a sharp distinction between logic and ontology, taking the latter to be about 'first intentions' (concepts abstracted directly from physical reality), and the former about 'second intentions' (concepts abstracted wholly from the 'material' content of first intentions, as well as about such categorial concepts as individual, proposition, universal, genus, species, property, etc., and so-called syncategorematic concepts such as negation). According to Aquinas, second intentions have a foundation in real entities, but 'exist' only in knowledge; i.e., they do not exist in the real world but depend on the mind for their existence – which is not say that they are subjective mental entities." (p. 117)

From: Nino Cocchiarella, "Logic and Ontology", *Axiomathes* vol. 12, 2001, pp. 117-150.

A SURVEY OF RESEARCH ON THE HISTORY OF LOGIC UNTIL 1950

"Ancient and medieval history of ancient logic.

One meets sometimes with the assertion that history of philosophy is an invention of the XVIIIth century. This is in so far correct, that in older times -- in spite of Aristotle's and Thomas Aquinas' explicit teaching -- scholars neglected completely the genetic point of view in history of logic; on the other hand, there is no doubt that another aspect of historiography, namely the understanding of doctrines, was much cultivated by ancient and medieval thinkers. A complete account of ancient logic would have to take their results into consideration. Unfortunately, we know practically nothing of all the huge work which was accomplished, especially on Aristotle, by Greek, Syrian, Arabian, Jewish, or, above all, by Latin medieval logicians: as was already stated, the Greek commentators have not yet been studied, while the others are little more than a field for future research. And yet, we know that there were important discoveries during that time. This has been proved at least in one particularly striking instance: Albertus Magnus had a perfect understanding (superior to that of Alexander [of Aphrodisias], not to mention Prantl) of the highly difficult Aristotelian modal logic. This understanding has been nearly completely lost, however, during the modern ages.

State of the history of formal logic during the XIXth century.

Modern history of Logic had been started during the XIXth century, but its state was very bad at that time -- indeed until 1930 approximately -- because of two phenomena. On one hand,

most of the historians of logic took for granted what Kant said on it; namely that "formal logic was not able to advance a single step (since Aristotle) and is thus to all appearance a closed and complete body of doctrine" (*); consequently, there was, according to them, no history of logic at all, or at the most, a history of the decay of Aristotelian doctrines. On the other hand, authors writing during that period were not formal logicians and by "logic" they mostly understood methodology, epistemology and ontology. That is why e.g. Robert Adamson could devote 10 pages to such a "logician" as Kant -- but only five to the whole period from the death of Aristotle to Bacon, i.e. to Theophrastus, the Stoic-Megaric School and the Scholastics. In order to realize what this means, it will be enough to remember that from the point of view we assume here, Kant is not a logician at all, while the leading [Megaricians](#) and Stoics are among the greatest thinkers in Logic.

The worst mischief was done during that period by the work of Carl Prantl (1855). This is based on an extensive knowledge of sources and constitutes the only all-embracing History of Ancient Logic we have until now. Unfortunately, Prantl suffered most acutely from the two above-mentioned phenomena: he believed firmly in the verdict of Kant and had little understanding of formal logic. Moreover, he had the curious moralizing attitude in history of logic, and, as he disliked both the Stoics and the Scholastics, he joined to incredible misinterpretations of their doctrines, injurious words, treating them as complete fools and morally bad men precisely because of logical doctrines which we believe to be very interesting and original. It is now known that his work -- excepting as a collection of texts (and even this far from being complete) -- is valueless. But it exercised a great influence on practically all writers on our subject until J. Łukasiewicz and H. Scholz drew attention to the enormous number of errors it contains.

Recent research.

We may place the beginning of recent research in our domain in 1896 when Peirce made the discovery that the Megaricians had the truth-value definition of implication. The first important studies belonging to the new period are those of G. Vailati on a theorem of Plato and Euclid (1904), A. Rüstow on the Liar (1908) and J. Łukasiewicz (1927); the Polish logician proposed in it his re-discovery of the logical structure of the Aristotelian syllogism and of Stoic arguments. Four years later appeared the highly suggestive, indeed revolutionary, *History of Logic* by H. Scholz, followed in 1935 by the paper of Łukasiewicz on history of logic of propositions; this is considered until now as the most important recent contribution to our subject. Both scholars -- Łukasiewicz and Scholz -- formed small schools. J. Salamucha, the pupil of the former, wrote on Aristotle's theory of deduction (1930) and the present author on the logic of Theophrastus (1939). Fr. J. W. Stakelum, who studied with the latter, wrote a book on Galen and the logic of propositions. On the other hand, A. Becker, a student of H. Scholz, published an important book on Aristotle's contingent syllogisms (1933). Professor K. Dürr was also influenced by Łukasiewicz in his study on Boethius (1938); his results were somewhat improved by R. van den Driessche (1949). In the English speaking world we may mention the paper of Miss Martha Hurst on implication during the IVth century (1935) -- but above all the already quoted work of Dr. B. Mates on Stoic Logic (in the press [*published 1953*]), which, being inspired by Łukasiewicz and his school may be considered as one of the best achievements of recent research.

Such is, in outline, the work done by logicians. On the other hand philologists had considerable merits in the study of ancient logic. We cannot quote here all their contributions, but at least the important book of Fr. Solmsen (1929) on the evolution of Aristotle's logic and rhetoric must be mentioned, and, above all, the masterly commentary on the Analytics by Sir W. D. Ross (1949). It does not always give full satisfaction to a logician trained on modern methods, but it is, nevertheless, a scholarly

work of a philologist who made a considerable effort to grasp the results of logicians." (pp. 4-7, some notes omitted)

Notes

(*) *Kritik der reinen Vernunft*. 2d ed. p, VIII (English by N. Kemp Smith)

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Robert Adamson, *A short History of Logic*, edited by W. R. Sorley, London 1911.

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Józef M. Bochenski, "La logique de Théophraste", *Collectanea logica*, 1, 1939, pp. 195-304) second edition Fribourg: Librairie del'université 1947 (reprint New York: Garland 1987)

René van den Driessche, "Sur le "De Syllogismo Hypothesico" de Boece", *Methodos*, 1, 1949, pp. 293-307.

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Charles Sanders Peirce, "The regenerated logic", *The Monist*, 7, 1896, pp. 19-40.

Carl Prantl, *Geachichte der Logik im Abendlande* (Manuldruck) 2 vols., Leipzig 1927.

David W. Ross, *Aristotle's Prior and Posterior Analytics... with Introduction and Commentary*, Oxford 1949.

Alexander Rüstow, *Der Lügner. Theorie, Geschichte und Auflösung des Russellschen Paradoxons*, (Dissertation at the University of Erlangen, 1908), Leipzig 1910.

Jan Salamucha, *Pojecie deduckcji u Aryatotelesa i św. Tomasza z Akwinu* (The Concept of Deduction in Aristotle and St. Thomas Aquinas). Warezawa 1930 (See the review by Józef M. Bochenski (1935), translated in: Kordula Świątorzecka, Jacek Juliusz Jadacki (eds.), *Jan Salamucha. Knowledge and Faith*, Amsterdam: Rodopi, pp. 311-316).

Heinrich Scholz, *Geachichte der Logik.*, Berlin 1931 (English translation: *A Concise History of Logic*, New York, 1961.)

Friedrich Solmsen, *Die Entwicklung der Aristotelischen Logik und Rhetorik*, Berlin 1939.

James W. Stakelum, *Galen and the Logic of Propositions* (Dissertation, Rome, Angelicum), Romae 1940.

Giovanni Vailati, "A proposito d'un passo del Teeteto e di una dimostrazione di Euclide", *Rivista di Filosofia e di scienze affini*, 6, 1904, pp. 378-388.

From: Joseph Bochenski, *Ancient Logic*, Amsterdam: North-Holland 1951.

Related pages

Annotated Bibliographies of Historians of Logic:

[E. J. Ashworth](#)

[L. M. de Rijk](#)

[Wilhelm Risse](#)



[History of Logic from Aristotle to Gödel](#)

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General Works and Bibliographies on the History of Logic in Western Thought

SOME WORKS ON THE HISTORY OF LOGIC [UP TO 1977]

There is a paucity of works which treat the complete history of logic. Investigation of some of the problems in this field has increased in the last decades, mostly due to symbolic logic, which has established that many of the results obtained were familiar to the Stoics and particularly to the Scholastics. But these have not been overall studies of the science. The authors of the studies we possess usually aimed at rediscovering the results reached in symbolic logic by earlier logical schools, and so many problems of historical interest have in the past been only little explored or not at all. We shall quote below only those studies published in volumes, and which have a more general aim, even when treating special problems, or limited periods of time.

The first history of logic seems to be the work of Petrus Ramus, entitled *Scholae in liberales artes* -- "Schools of Liberal Arts" (Basle, 1569). The first eight chapters of this book deal with history of logic and are called *Scholae dialecticae* -- "Dialectic Schools". Unfortunately, the author naively believes all historical or legendary personages to have been logicians and in the chapter

Logica Patrum ("Logic of our Ancestors") he lists among them Noah and Prometheus.

After this, studies of the history of logic become more scientific. Here we quote:

1. Bartholomäus Keckermann: *Praecognitorum Logicorum Tractatus III* -- "Three Treatises on the most well-known Logicians" (Hanover, 1598). It is rather a useful list of authors and titles, with some indication of contents.
2. Jacob Friedrich Reimmann: *Critisirender Geschichts-Calender von der Logica* -- "Critical and Historical Calendar of Logic" (Frankfort-on-Main, 1699). Written in defective German, this work nevertheless contains valuable information.
3. Pierre Gassendi: *De origine et varietate logicae* -- "On the Origin and Diversity of Logic" (Lyons, 1658), a very valuable work.
4. Johann Albert Fabricius: *Specimen elencticum historiae logicae* -- "Index of Subjects of the History of Logic" (Hamburg, 1699). This "Index" is actually a catalogue of the treatises of logic known by this scholar.
5. Johannes Georgius Walchius [Johann Georg Walch]: *Historia Logicae* -- "History of Logic" (Leipzig, 1721). This book differs from the preceding ones in the correctness of its information.
6. Heinrich Christoph Wilhelm Sigwart: *De historia logicae inter Graecos usque ad Socratem commentatio* -- "On the History of Logic among Greeks as far as Socrates" (Tübingen, 1832).
7. Frederich Auguste de Reiffenberg: *Principes de la Logique suivis de l'Histoire et de la bibliographie de cette Science* -- "The Principles of Logic followed by the History and Bibliography of this Science" (Brussels, 1833).
8. Adolphe Frank: *Esquisse d'une histoire de la logique précédée d'une Analyse étendue de l'Organum d'Aristote* --

"Sketch of a History of Logic Preceded by an Extensive Analysis of Aristotle's Organon" (Paris, 1838).

9. Friedrich Adolf Trendelenburg: *Geschichte der Kategorienlehre* -- "History of the Theory of Categories" (Berlin, 1845).
10. Robert Blakey: *Historical Sketch of Logic, from the Earliest Times to the Present Day* (Edinburgh, 1851).
11. We have reached now the monumental work in four volumes, Carl Prantl's *Geschichte der Logik im Abendlande* -- "History of logic in Western Europe" (Leipzig, 1855-1870). This writing offers an inexhaustible source of information, of original Greek and Latin texts, some of them copied down from inaccessible books and manuscripts (which the present work has also used). Yet this work has at least two shortcomings: it expounds the history of logic only down to the sixteenth century, and it is blemished by opinions that are inadmissible because of their violence and by a lack of understanding of ideas different from his own. Although Prantl was convinced he had written a work "so that it would not be necessary, at least for some time, to write another history of logic" (op. cit., IV, *Vorwort*), the material he collected can be only a source of information for other histories of logic. Prantl's method is exclusively chronological and therefore entails repetitions.
12. Paul Janet and Gabriel Séailles: *Histoire de la Philosophie* (Paris 1887). In this "History of Philosophy", a large part deals with history of logic in a very original manner, dividing it into its main problems: history of the problem of concept, of judgement, of syllogism, of induction. It is a didactic handbook, supplying an important amount of information, sometimes following closely the treatise of Prantl.
13. Friederich Harms: *Die Philosophie in ihrer Geschichte* "Philosophy in its History".
14. The second volume of this work is entitled *Geschichte der Logik* - "History of Logic". (Berlin, 1881), and deals in a very

general way with the history of this discipline.

15. Robert Adamson: *A Short History of Logic* (Edinburgh, 1911; reprinted, Dubuque, Iowa, 1962).
16. Clarence Irving Lewis: *A Survey of Symbolic Logic* (Berkeley, 1918). This book contains numerous historical indications about mathematical logic.
17. Theodor Ziehen: *Lehrbuch der Logik auf positivistischer Grundlage mit Berücksichtigung der Geschichte der Logik*, - "Treatise on Logic, on Positivist Ground, Considering also the History of Logic" (Bonn, 1920).
18. Oswald Külpe: *Vorlesungen über Logik* - "Lessons on Logic" (Leipzig, 1923). The first part of this book is a short history of logic, containing competent opinions, and a very judicious division of the history of this science.
19. Federigo Enriques: *Per la storia della logica* - "For the History of Logic" (Bologna, 1922). This study contains some interesting remarks, gives the logic a larger framework, (including the methodologic and philosophical logic), but aims to show the connections between mathematics and logic.
20. Henrich Scholz: *Geschichte der Logik* - "History of Logic" (Berlin, 1931). This is a short, but very erudite study, which underlines only those data which confirm or prefigure the results of mathematical logic.
21. Jörgen Jörgensen: *A Treatise of Formal Logic* (3 vols., Copenhagen - London, 1931). The first volume bears the title *Historical Developments*, and offers precious information.
22. Evert Willem Beth: *De Wijsbegeerte der Wiskunde van Parmenides tot Bolzano* - "The Theory of Science from Parmenides to Bolzano" (in Dutch, Antwerp-Nijmegen, 1944);
23. Evert Willem Beth: *Geschiedenis der Logica* - "History of Logic" (in Dutch, the Hague, 1944).

24. Francesco Alberghamo: *Storia della logica delle scienze esatte* - "History of the Logic of Exact Sciences" (Bari, 1947).
25. Antoinette Virieux-Reymond: *La logique et l'épistémologie des Stoïciens* - "Logic and Epistemology of the Stoics" (Lausanne, 1949).
26. Philotheus Boehner: *Medieval Logic, an outline of its development from 1350 to c. 1400* (Manchester, 1952).
27. Robert Feys: *De ontwikkeling van het logisch denken* - "Development of Logic Thought" (in Dutch, Antwerp - Nijmegen, 1949).
28. Alonzo Church: *Introduction to Mathematical Logic* (Princeton, 1956). This masterly treatise on mathematical logic contains numerous and important historical references. Church has also published regularly in "Journal of Symbolic Logic" the bibliography of this science (beginning from 1936).
29. Józef Maria Bochenski: *Formale Logik* - "Formal Logic" (Freiburg - München, 1956). This is, in our opinion, an important work in this field. It contains an anthology of texts, taken from the original writings of the logicians, beginning with Greeks until now, translated into German, and is chronological. The principle of this work is to give the texts which prefigure or present the results obtained in our time by mathematical logic. *Formale Logik* also gives short information about Indian logic. [Translated in English as *A history of formal logic* (1961)]
30. Francesco Barone: *Logica formale e Logica trascendentale* - "Formal and Transcendental Logic" (2 vols., Turin, 1957-1965). The first volume is entitled *Da Leibniz a Kant* - "From Leibniz to Kant", and the second one *L'algebra della logica* - "The algebra of logic". Barone's work, although limited to a certain determined period, is rich in personal comment and contains much information.
31. Ettore Carruccio: *Matematica e logica nella storia e nel pensiero contemporaneo* "Mathematics and Logic In the

History and In the Contemporary Thought" (Turin, 1958).

32. Benson Mates: *Stoic Logic* (Berkeley and Los Angeles, 1961).
33. William and Martha Kneale: *The Development of Logic* (Oxford, 1962): We think this is the third important work in this field (chronologically, after those of Prantl and of Bochenski), very important as a work of references. The aim of this book is, as the authors say in the "Preface", "an account of the growth of logic, rather than an attempt to chronicle all that past scholars, good or bad, have said about their science". Kneale's method is not that used by Bochenski (anthology of texts), but their aim coincides with Bochenski's, being "to record the first appearances of those ideas which seem to us most important in the logic of our own day".
34. Tadeusz Kotarbinski: *Leçons sur l'histoire de la logique* - "Lessons in the History of Logic" (Paris, 1964). The book is the translation of the lessons given by the author at the University of Warsaw, and though short offers a larger framework for the history of this discipline, also discussing other logic problems, for instance methodological ones, which were not considered by Bochenski or Kneale. Notwithstanding, this work aims to show the historical filiation of mathematical logic.
35. Nicolai Ivanovici Stiazhkin: *Stanovlenie idei matematicheskoi logiki* - "The Genesis of the Idea of Mathematical Logic" (Moscow, 1964). This book has been translated into English under the title *History of Mathematical Logic from Leibniz to Peano* (Cambridge, Mass., London, 1969).
36. Ernst Kapp: *Der Ursprung der Logik bei den Griechen* - "The Origin of Logic with Greeks" (Gottingen, 1965) [Originally published in English as *Greek foundations of traditional logic*, 1942)
37. Wilhelm Risse : *Bibliographia Logica*. The author intends to continue the work of Prantl, in his studies bearing this

general title, but in an objective manner, beginning from where the last has left it, i. e. end of the sixteenth century. This bibliography is planned to appear in four volumes, the first being already published: *Bibliographia Logica. Verzeichnis der Druckschriften zur Logik mit Angabe ihrer Fundorte*. Band I, 1172 -1800 - "Logic Bibliography. List of printed writings with indication where they are to be found. Vol. I, 1472-1800" (Hildesheim - New York, 1965). Beside this vast bibliography, (which will also list the manuscripts of logic), Risse has published another work in two volumes (which will be continued too): *Die Logik der Neuzeit* Band I, 1600-1640 - "Logic of Recent Times, vol. I, 1500-1640" (Stuttgart - Bad Cannstatt, 1964); *Die Logik der Neuzeit* Band II, 1640-1780 (Stuttgart - Bad Cannstatt, 1970). These two volumes expound, in Prantl's manner, but more systematically, the treatises on logic from the mentioned periods. The studies of Risse, as well as those of Prantl, are indispensable to all researches in the field of history of logic.

38. Peter Harold Nidditch: *The Development of Mathematical Logic* (London, New York, 1960).
39. Guido Calogero: *Storia della logica antica* - "History of the ancient logic" (Bari, 1967). The author, mentions that this is the first of a series of volumes - "The Archaic Epoch", dealing with logic from Heraclitus to Leucippus and Democritus [other volumes were never published]. Calogero also published the important work *I fondamenti della logica aristotelica* - The Bases of Aristotle's Logic" (2nd ed., Florence, 1968) [First edition: Rome, 1932]
40. Alexandr Osipovich Makovelski: *Istoria Logiki* - "History of Logic" (Moscow, 1967), short general and didactic handbook of this discipline [translated in French by Geneviève Dupond as: *Histoire de la logique*, Moscou, Éditions du Progrès, 1978].
41. James C. Colbert: *La evolucion de la logica simbolica y sus implicaciones* - "Evolution of Symbolic Logic and its Philosophical Implications" (Pamplona, 1968). This writing studies mathematical logic and some important authors.

42. Anton Dumitriu: *Istoria Logicii* - "History of Logic" (Bucharest, 1969). The work highlights all the historical aspects of logic. It contains a chapter on logic in China and another on logic in India. An ample compendium of the whole book, in two parts, was published by "Scientia", and appeared simultaneously in French and English versions (Nos. VII-X, 1971). [Translated in English as *History of logic* (1977)]
43. Robert Blanché: *La logique et son histoire. D'Aristote à Russell* - "Logic and its History. From Aristotle to Russell" (Paris, 1970). The book is full of interesting remarks, but it neglects, as many other works do, methodology, Renaissance logic, and other important problems.
44. Reuben Louis Goodstein: *Development of Mathematical Logic* (NewYork, London 1971).
45. Vicente Muñoz Delgado: *Logica Hispano-Portuguesa hasta 1600* - "The Spanish- Portuguese Logic till 1600" (Salamanca, 1972). This is an important study of logic in the Iberian Peninsula, containing information ignored till now.
46. Stanislaw Surma (editor): *Studies in the History of Mathematical Logic* (Wroclaw - Warszawa - Krakow - Gdansk, 1973).

We can see from the above list, that very few of the works quoted are really "histories of logic". The importance of all these contributions cannot be diminished but -- and this is a curious fact -- they generally defend or emphasize some particular results and thus neglect others.

We realize, in this way, that, indisputably, one veritable historical work, in the above list, is nevertheless, in spite of its weak side, Prantl's *Geschichte der Logik im Abendlande*, because the author does not select the logicians nor the theories he is treating of. He is judging them severely when they contradict his conception, and that is his error. But his work is unquestionably historical in character, and Prantl is really a historian, although his

judgements are often too subjective and rudely expressed.” (Vol. I, pp. XIII-XVI)

From: Anton Dumitriu, *History of logic*, Tunbridge Wells: Abacus Press, 1977.

The most important recent works are the *Handbook of the History of Logic*, edited by Dov Gabbay and John Woods (11 volumes) and *The Development of Modern Logic* edited by Leila Haaparanta; see the following section for the bibliographic details.

GENERAL WORKS ON THE HISTORY OF LOGIC

1. "Logic, History Of." In. 2006. *Encyclopedia of Philosophy. Second Edition*, edited by Borchert, Donald M., 397-484. New York: Thomson Gale.

The first edition of the *Encyclopedia of Philosophy*, edited by Paul Edwards, was published in 1967.

The editor of the article *Logic, history of* in the first edition was Arthur Norman Prior.

"The mainstream of the history of logic begins in ancient Greece and comes down through the Arabian and European logic of the Middle Ages and through a number of post-Renaissance thinkers to the more or less mathematical developments in logic in the nineteenth and twentieth centuries. In the period after the fall of Rome many of the ancient achievements were forgotten and had to be relearned; the same thing happened at the end of the Middle Ages. Otherwise this Western tradition has been fairly continuous. Indian and Chinese logic developed separately. Today logic, like other sciences, is studied internationally, and the same problems are treated in the Americas, western

and eastern Europe, and Asia and Australasia. The story of the development of logic will be told here under the following headings:

Susanne Bobzien: Ancient logic; Brendan S. Gillon: Logic and inference in Indian philosophy; A. C. Graham (1967): Chinese logic (Bibliography updated by Huichieh Loy); Nicholas Rescher (1967): Logic in the Islamic world (with an Addendum by Tony Street); Christopher J. Martin: Medieval (European) logic; Ivo Thomas (1967): The Interregnum (between medieval and modern logic); Precursors of modern logic: Ivo Thomas (1967): Leibniz; Ivo Thomas (1967): Euler; Ivo Thomas (1967): Lambert and Ploucquet; Yehoshua Bar-Hillel (1967): Bolzano; Modern logic: the Boolean period; P. L. Heath (1967): Hamilton; P. L. Heath (1967): De Morgan; John Corcoran: Boole; P. L. Heath (1967): Jevons; P. L. Heath (1967): Venn; Francine F. Abeles: Carroll; A. N. Prior (1967): Peirce; A. N. Prior (1967): A. N. Prior (1967): Keynes; A. N. Prior (1967): Johnson; The heritage of Kant and Mill; A. N. Prior (1967): From Frege to Gödel; Ivo Thomas (1967): Nineteenth century mathematics; Bede Rundle (1967): Frege; Bede Rundle (1967): Whitehead and Russell; Bede Rundle (1967): Ramsey; Bede Rundle (1967): Brouwer and Intuitionism; Bede Rundle (1967): Hilbert and Formalism; Bede Rundle (1967): Löwenheim; Bede Rundle (1967): Skolem; Bede Rundle (1967): Herbrand; Bede Rundle (1967): Gödel; John P. Burgess: Since Gödel; Bede Rundle (1967): Gentzen; Bede Rundle (1967): Church; Herbert B. Enderton: Turing and computability theory; Wilfrid Hodges: Decidable and undecidable theories; Wilfrid Hodges: Model theory; Graham Priest: The proliferation of nonclassical logics; Peter Cholak and Red Solomon: Friedman and revers mathematics." (from the Second Edition)

2. Gabbay, Dov, and Woods, John, eds. 2004. *Handbook of the History of Logic*. Amsterdam: Elsevier.

Plan of the work: 1. Greek, Indian and Arabic Logic (2004); 2. Mediaeval and Renaissance Logic (2008); 3. The Rise of Modern Logic: from Leibniz to Frege (2004); 4. British Logic in the Nineteenth Century (2008); 5. Logic from Russell to Church (2009); 6. Sets and Extensions in the Twentieth Century (co-editor Akihiro Kanamori, 2012); 7. Logic and the Modalities in the Twentieth Century (2006); 8. The Many Valued and Non-monotonic Turn in Logic (2007); 9. Computational Logic (2015); 10. Inductive Logic (co-editor Stephan Hartmann; 2011); 11. Logic: A History of its Central Concepts (2012).

3. ———, eds. 2004. *Greek, Indian and Arabic Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 1
4. ———, eds. 2008. *Mediaeval and Renaissance Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 2.
5. ———, eds. 2004. *The Rise of Modern Logic: From Leibniz to Frege*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 3.
6. ———, eds. 2008. *British Logic in the Nineteenth Century*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 4.
7. ———, eds. 2009. *Logic from Russell to Church*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 5.
8. ———, eds. 2012. *Sets and Extensions in the Twentieth Century*. Amsterdam: Elsevier.
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Co-editor Akihiro Kanamori.
9. ———, eds. 2006. *Logic and the Modalities in the Twentieth Century*. Amsterdam: Elsevier.
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10. ———, eds. 2007. *The Many-Valued and Nonmonotonic Turn in Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 8.

11. ———, eds. 2015. *Computational Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 9.
12. ———, eds. 2011. *Inductive Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 10.
Co-Editor Stephan Hartmann.
13. Gabbay, Dov, Pelletier, Francis Jeffrey, and Woods, John, eds. 2012. *Logic: A History of Its Central Concepts*. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 11.
14. Haaparanta, Leila, ed. 2009. *The Development of Modern Logic*. New York: Oxford University Press.
"This volume is the result of a long project. My work started sometime in the 1990s, when Professor Simo Knuuttila urged me to edit, together with a few colleagues, a volume on the history of logic from ancient times to the end of the twentieth century. Even if the project was not realized in that form, I continued with the plan and started to gather together scholars for a book project titled *The Development of Modern Logic*, thus making a reference to the famous book by William and Martha Kneale. Unlike that work, the new volume was meant to be written by a number of scholars *almost as if* it had been written by one scholar only. I decided to start with thirteenth-century logic and come up with quite recent themes up to 2000, hence, to continue the history written in *The Development of Logic*. My intention was to find a balance between the chronological exposition and thematic considerations. The philosophy of modern logic was also planned to be included; indeed, at the beginning the book had the subtitle "A Philosophical Perspective," which was deleted at the end, as the volume reached far beyond that perspective. The collection of articles is directed to philosophers, even if some chapters include a number of technical details. Therefore, when it is used as a textbook in advanced courses, for which it is also planned, those details are recommended reading to students

who wish to develop their skills in mathematical logic."

(From the Preface by Leila Haaparanta)

Contents: Preface V-VI; 1. Leila Haaparanta: Introduction 3; 2. Tuomo Aho and Mikko Yrjönsuuri: Late medieval logic 11; 3. Mirella Capozzi, Gino Roncaglia: Logic and philosophy of logic from Humanism to Kant 78; 4. Volker Peckhaus: The mathematical origins of Nineteenth century algebra of logic 159; 5. Christian Thiel: Gottlob Frege and the interplay between logic and mathematics 196; 6. Risto Vilkkö: The logic question during the first half of the Nineteenth century 203; 7. Leila Haaparanta: The relations between logic and philosophy, 1874-1931 222; 8. Göran Sundholm: A century of judgement and inference, 1837-1936: Some strands in the development of logic; 9. Paolo Mancosu, Richard Zach, Calixto Badesa: The development of mathematical logic from Russell to Tarski 1900-1935 318; 10. Wilfrid Hodges: Set theory, model theory, and computability theory 471; 11. Jan von Plato: Proof theory of Classical and Intuitionistic logic 499; 12. Tapio Korte, Ari Maunu, Tuomo Aho: Modal logic from Kant to possible worlds semantics 516; Appendix to Chapter 12: Risto Hilpinen: Conditionals and possible worlds: On C. S. Peirce's conception of conditionals and modalities 551; 13. Gabriel Sandu, Tuomo Aho: Logic and semantics in the Twentieth century 562; 14. Andrew Aberdein and Stephen Read: The philosophy of alternative logics 613; 15. Sandy Zabell: Philosophy of inductive logic: the Bayesian perspective 724; 16. Alessandro Lenci, Gabriel Sandu: Logic and linguistics in the Twentieth century 775; 17. Richmond Thomason: Logic and artificial intelligence 848; 18. J. N. Mohanty, S. R. Saha, Amita Chatterjee, Tushar Kanti Sarkar, Sibajiban Bhattacharyya: Indian logic 903; Index 963-994.

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Contents: I. Angelelli: Presentación del Simposio 7; Mario Mignucci: La teoria della quantificazione del predicato nell'antichità classica 11; Claude Imbert: Histoire et formalisation de la logique 43; Klaus Jacobi: Aussagen über Ereignisse. Modal- und Zeitlogische Analysen in der Mittelalterlichen Logik 89; Vicente Muñoz Delgado: Pedro de Espinosa (+ 1536) y la lógica en Salamanca hasta 1550 119; Angel d'Ors: Las *Summulae* de Domingo de Soto. Los límites de la regla '*tollendo tollens*' 209; José Luis Fuertes Herreros: Sebastián Izquierdo (1601-1681): un intento precursor de la lógica moderna en el siglo XVII 219; Larry Hickman: The *Logica Magna* of Juan Sanchez Sedeño (1600). A Sixteenth century addition to the Aristotelian *Categories* 265; Hans Burkhardt: Modaltheorie und Modallogik in der Scholastik und bei Leibniz 273; Christian Thiel: Die Revisionssbedürftigkeit der logischen Semantik Freges 293; Ignacio Angelelli: Sobre una clase especial de proposiciones reduplicativas 303; Alfonso García Suárez: Fatalismo, trivalencia y verdad: una análisis del problema de los futuros contingentes 307; Georges Kalinowski: La logique juridique et son histoire 331-350.

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Indice: I. Angelelli: Presentación; E. J. Ashworth: The doctrine of signs in some early sixteenth-century Spanish logicians 13; I. Boh: On medieval rules of obligation and rules of consequence 39; Alexander Broadie: Act and object in Late-Scholastic logic 103; Hans Burkhardt: Contingency and probability: a contribution to the Aristotelian theory of science 125; Jeffrey S. Coombs: John Mair and Domingo de Soto on the reduction of iterated modalities 161; Donald Felipe: Johannes Felwinger (1659) and Johannes Schneider (1718) on syllogistic disputation 183; Norbert Hinske: Kant by computer. Applications of electronic data processing in

the humanities 193; Herbert Hochberg: Predication, relations, classes and judgment in Russell's philosophical logic 213; Joachim Hruschka: The hexagonal system of deontic concepts according to Achenwall and Kant 277; Simo Knuuttila: Varieties of natural necessity in medieval thought 295; Wolfgang Lenzen: Precis of the history of logic from the point of view of the leibnizian calculus 321; Juan Carlos Leon, Alfredo Burrieza: Identity and necessity from the fregean perspective 341; Albert C. Lewis: An introduction to the Bertrand Russell editorial project: axiomatics in Russell 353; Christopher Martin: *Significatio nominis* in Aquinas 363; Mario Mignucci: Alexander of Aphrodisias on inference and syllogism 381; Vicente Muñoz Delgado: El análisis de los enunciados '*de incipit et desinit*' en la logica de Juan de Oria (1518) y en la de otros españoles hasta 1540 413; Niels Offenberger: Die Oppositionstheorie strikt partikulärer Urteilsarten aus der Sicht der Vierwertigkeit 489; Angel d'Ors: La doctrina de las proposiciones insolubles en las *Dialecticae introductiones* de Agustin de Sbarroya 499; Juana Sánchez Sánchez: Quine y Kripke sobre el análisis objetual de los enunciados de identidad 553; Christian Thiel: Must Frege's role in the history of philosophy of logic be rewritten? 571; Lista de participantes 585; Indice 589-591.

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Earline Jennifer Ashworth: Domingo de Soto (1494-1560) on analogy and equivocation 117; Allan Bäck: The *Triplex Status Naturae* and its justification 133; William E. McMahon: The semantics of Ramon Llull 155; Paloma Pérez-Ilzarbe: The doctrine of descent in Jerónimo Pardo: meaning, inference, truth 173; Jeffrey Coombs: What's the matter with matter: *Materia propositionum* in the post-medieval period 187; Rafael Jiménez Cataño: *Copulatio* in Peter of Capua (12th century) and the nature of the proposition 197; Lynn Cates: Wyclif on *sensus compositus et divisus* 209; Mauricio Beuchot: Some examples of logic in New Spain (Sixteenth-Eighteenth century) 215; Adrian Dufour: necessity and the Galilean revolution 229; Guy Debrock: Peirce's concept of truth within the context of his conception of logic 241; Pierre Thibaud: Peirce's concept of proposition 257; Jaime Nubiola: Scholarship on the relations between Ludwig Wittgenstein and Charles S. Peirce 281; José Miguel Gamba: Arithmetical abstraction in Aristotle and Frege 295; Herbert Hochberg: The role of subsistent propositions and logical forms in Russell's 1913 *Philosophical logic* and in the Russell-Wittgenstein dispute 317; Alfonso García Suárez: Are the objects of the *Tractatus* phenomenological objects? 343; María Cerezo: Does a proposition affirm every proposition that follows from it? 357; Javier Legris: Carnap's reconstruction of intuitionistic logic in the *Logical syntax of language* 369; Albert C. Lewis: Some influences of Hermann Grassmann's program on modern logic 377; Juan Carlos León: Indeterminism and future contingency in non-classical logics 383; Christian Thiel: Research on the history of logic at Erlangen 397; Index 403.

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Contents: Simo Knuuttila: Introduction VII-XIV; Lilli Alanen and Simo Knuuttila: The foundations of modality

and conceivability in Descartes and his predecessors 1; Ilkka Patoluoto: Hobbes's system of modalities 71; Jaakko Hintikka: Was Leibniz Deity an *Akrates*? 85; Martin Kusch and Juha Manninen: Hegel on modalities and monadology 109; Pascal Engel: Plenitude and contingency: modal concepts in Nineteenth century French philosophy 179; Leila Haaparanta: Frege and his German contemporaries on alethic modalities 239; Ilkka Niiniluoto: From possibility to probability: British discussions on modality in the Nineteenth century 275; Hans Poser: The failure of Logical Positivism to cope with problems of modal theory 311; Index of names 329; Index of subjects 341.

"The word "modern" in the title of this book refers primarily to post-medieval discussions, but it also hints at those medieval modal theories which were considered modern in contradistinction to ancient conceptions and which in different ways influenced philosophical discussions during the early modern period. The medieval developments are investigated in the opening paper, 'The Foundations of Modality and Conceivability in Descartes and His Predecessors', by Lilli Alanen and Simo Knuuttila.

Boethius's works from the early sixth century belonged to the sources from which early medieval thinkers obtained their knowledge of ancient thought. They offered extensive discussions of traditional modal conceptions the basic forms of which were: (1) the paradigm of possibility as a potency striving to realize itself; (2) the "statistical" interpretation of modal notions where necessity means actuality in all relevant cases or omnitemporal actuality, possibility means actuality in some relevant cases or sometimes, and impossibility means omnitemporal non-actuality; and (3) the "logical" definition of possibility as something which, being assumed, results in nothing contradictory. Boethius accepted the Aristotelian view according to which total possibilities in the first sense must prove their mettle through actualization and possibilities in the third sense are

assumed to be realized in our actual history. On these presumptions, all of the above-mentioned ancient paradigms imply the Principle of Plenitude according to which no genuine possibility remains unrealized. (For the many-faceted role of the Principle of Western thought, see A.O. Lovejoy, *The Great Chain of Being. A Study of the History of an Idea*, Harvard University Press, Cambridge, Mass. 1936, and S. Knuuttila (ed.), *Reforging the Great Chain of Being. Studies of the History of Modal Theories* (Synthese Historical Library 20), Dordrecht, Reidel 1981.) Boethius sometimes says that there can be opposite diachronic possibilities vis-à-vis future moments of time, but even in these cases unrealized alternatives cease to be possibilities when one of them is actualized. The idea of spelling out the meaning of modal notions with the help of synchronic alternative states of affairs hardly played any role in ancient thought; after having been suggested by some Patristic thinkers, it became a systematic part of modal thinking only in the twelfth century. It was realized that even if the traditional philosophical conceptions might be applicable to the phenomenal reality, possibilities of God, acting by choice, refer to alternative providential plans or histories. Although there were not many twelfth or thirteenth century figures who, like Gilbert of Poitiers or Robert Grosseteste, would have understood the theoretical significance of the idea of modality as referential multiplicity, the doctrine of special theological modalities motivated new kinds of discussions of the nature of natural necessities and the relations between the notions of possibility, conceivability, and knowability. In ancient metaphysics, modality and intelligibility were considered real moments of being. A Christian variant of this doctrine can be found in such thirteenth century Parisian scholars as Thomas Aquinas, Bonaventura, and Henry of Ghent. They thought that God's infinite act of understanding contains the ideas of all conceivable kinds of

beings. Ideas as possibilities have an ontological foundation, however, because God's act of thinking consists of understanding the infinite ways in which his essence could be imitated by finite beings. Because the ontological foundation of possibilities remains as such unknown to men, it is claimed that we usually cannot decide whether an alleged unrealized possibility really is a possibility or not. In Duns Scotus's modal theory, the ontological foundation of thinkability is given up. The area of logical possibility is characterized as an infinite domain of thinkability which, without having any kind of existence, is objective in the sense that it would be identical in any omniscient intellect thinking about all thinkable things. This theory of the domain of possibility as an absolute precondition of all being and thinking was accepted by Ockham and many other medievals, and through Suárez's works it was commonly known in the seventeenth century, too. Another historically important feature of Scotus's modal theory is that it systematically developed the conception of modality as referential multiplicity. The domain of possibility as an a priori area of conceptual consistency is partitioned into equivalence classes on the basis of relations of compossibility. One of them is the actual world." pp. VII-IX.

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Indice: RELAZIONI. Evandro Agazzi: Attuali prospettive sulla storia della logica 3; Carlo Augusto Viano: Problemi e interpretazioni nella storia della logica antica 25; Franco Alessio: Prospettive e problemi della storia della logica medievale 37; Cesare Vasoli: La logica europea nell'età dell'Umanesimo e del Rinascimento 61; Francesco Barone: Sviluppi della logica nell'età moderna 95; Corrado Mangione: Indicazioni per una storia della logica matematica 113; COMUNICAZIONI. 1) STORIA DELLA

LOGICA CLASSICA. Vittorio Sainati: La matematica della scuola eudossiana e le origini dell'apodittica aristotelica 131; Mario Mignucci: Universalità e necessità nella logica di Aristotele 151; Walter Leszl: Conoscenza dell'universale e conoscenza del particolare in Aristotele 169; Lorenzo Pozzi: Il nesso di implicazione nella logica stoica 177; Enzo Maccagnolo: La "proprietas veritatis" in Anselmo d'Aosta 189; Giovanni Versace: La teoria della "suppositio simplex" in Occam e in Burley 195; Giulio Cesare Giacobbe: La "quaestio de certitudine mathematicarum" all'interno della scuola padovana 203; 2) STORIA DELLA LOGICA

MATEMATICA. Ettore Carruccio: Teorema della pseudo-Scoto e sue applicazioni matematiche 215; Gabriele Lolli: Il concetto di definibilità nella discussione sui fondamenti dell'inizio del secolo 227; Domenico Costantini: Il postulato della permutazione di W .E. Johnson e gli assiomi carnapiani dell'invarianza 237; Giulio Giorello: Osservazioni sulle strutture non-standard della aritmetica e dell'analisi 243; Maria Luisa Dalla Chiara Scabia: Ampliamenti della logica classica: logica quantistica e logiche temporali non-standard 261; Silvio Bozzi: Alcune osservazioni storiche sui rapporti tra semantica e teoria dei modelli 269; Ugo Volli: Sviluppi recenti nei rapporti fra logica e linguistica 285-292.

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Indice: Presentazione di Ettore Casari V; Elenco degli autori VIII; Indice IX;
Relazioni.
C.A. Viano: La proposizione in Aristotele 3; J. Berg: Aristotle's theory of definition 19; V. Sainati: Per una nuova lettura della sillogistica modale aristotelica 31; M. Mignucci: Alessandro di Afrodisia e la logica modale di Crisippo 47; D.P. Henry: New aspects of medieval logic 59; G.

Nuchelmans: Medieval problems concerning substitutivity (Paul of Venice, *Logica Magna*, II, 11, 7-8) 69; K. Jacobi: Abelard and Frege: the semantics of words and propositions 81; C.E. Vasoli: Logica ed 'enciclopedia' nella cultura tedesca del tardo Cinquecento e del primo Seicento: Bartholomaeus Keckermann 97; M. Mugnai: Alle origini dell'algebra della logica 117; G. Lolli: *Quasi alphabetum*. Logic and encyclopedia in G. Peano 133; C. Mangione, S. Bozzi: About some problems in the history of mathematical logic 157; Ch. Thiel: Some difficulties in the historiography of modern logic 175; A.S. Troelstra: Logic in the writings of Brouwer and Heyting 193; E. Borger: From decision problems to complexity theory. A survey 211;

Comunicazioni.

N. Offenberger: Sulla 'equivalenza' degli enunciati 'strettamente' particolari in prospettiva tetravalente 219; P. Cosenza: Procedimenti di trasformazione nella sillogistica di Aristotele 223; W. Cavini: La teoria stoica della negazione 229; M. Nasti de Vincentis: Chrysippean implication as strict equivalence 235; E. Galanti: True arguments and valid arguments. Apropos of Sextus Empiricus, *Pyrrhoneiae Hypotyposeos* II, 188-92 241; A.D. Conti: La teoria degli *ad aliquid* di Boezio: osservazioni sulla terminologia 247; R. Pinzani: Le 'propositiones coniuncte temporales' nel *De Ypoteticis* di Abelardo 253; R. Cordeschi: I sillogismi di Lullo 259; G.C. Giacobbe: La Logica dimostrativa di Gerolamo Saccheri 265; M. Capozzi: Sillogismi e 'ars inveniendi' in J.H. Lambert 271; R. Pozzo: Logica e 'Realphilosophie' negli scritti jenensi di Hegel 277; D. Buzzetti: Benjamin Humphrey Smart and John Stuart Mill: logic and parts of speech 283; P. Freguglia: Influenze algebriche sull'opera di Boole: W.R. Hamilton e G. Peacock 289; N. Guicciardini: Cambridge mathematics and algebra of logic: pure analytics, Cauchy's methodology and divergent series 295; M. Ferriani: Boole, Frege e la distinzione leibniziana 'Lingua-Calculus' 301; E. Picardi: On

Frege's notion of *Inhalt* 307; P. Casalegno: Lo strano caso del dr. Gustav Lauben 313; G.A. Corsi: A note of indexicals and Frege's notion of sense 319; F. Gana: Una questione di priorità nella definizione di insieme finito 325; U. Bottazzini: Sul Calcolo geometrico di Peano 331; M. Borga, P. Freguglia, D. Palladino: Su alcuni contributi di Peano e della sua scuola alla logica matematica 337; P.A. Giustini: Geometria ed assiomatica 343; R. Simili: W.E. Johnson e il concetto di proposizione 347; C. Pizzi: Il problema dei determinabili nella logica del '900 353; G. Pretto, G. Sambin: Mistica come etica della filosofia della matematica di L.E.J. Brouwer 359; F. Arzarello: Classical mathematics in Brouwer intuitionism and intuitionism in Brouwer classical mathematics 363; V.M. Abrusci: Paul Hertz's logical works. Contents and relevance 369; T. Tonietti: Le due tappe del formalismo di Hilbert e la controversia con Brouwer 375; E. Moriconi: Sul tentativo hilbertiano di dimostrare l'ipotesi del continuo di Cantor 381; S. Quaranta: Il teorema di Herbrand: semantica 'costruttiva' e completezza 387; D. Costantini, M.C. Galavotti: Osservazioni sullo sviluppo storico della nozione di casualità 393-401.

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W. Cavini, Modalità dialettiche nei *Topici* di Aristotele 15; M. Mignucci, Truth and modality in late antiquity: Boethius on future contingent propositions 47; S. Knuuttila, Modalities in obligational disputations 79; G. Hughes, The modal logic of John Buridan 93; V. Sainati, Verità e

modalità in Leibniz 113; H. Poser, Kants absolute Modalitäten 121; E. Picardi, Assertion and assertion sign 139; H. Burkhardt, Das Vorurteil zugunsten des Aktualen: die philosophischen Systeme von Leibniz and Meinong 155; S. Bozzi, Implicazione stretta e metodo assiomatico nella logica di Lewis e Langford 183; C. Pizzi, Propositional quantifiers in Lewis and Langford's "Symbolic Logic" 205; K. Segerberg, Getting started: beginnings in the logic of action 221;

Comunicazioni

M. Mariani, Le dimostrazioni indirette in *An. Pr. A*, 15 253; M. Nasti, Stoic implication and stoic modalities 259; R. Pinzani, Un approccio semantico alla dialettica di Abelardo 265; G. Roncaglia, Alcune note sull'uso di *compossibilitas* e *impossibilitas* in Alberto Magno e Tommaso d'Aquino 271; A. Tabarroni, Predicazione essenziale ed *intentiones* secondo Gentile da Cingoli 277; R. Lambertini, *Utrum genus possit salvari in unica specie*. Problemi di semantica dei termini universali tra Gentile da Cingoli e Radulphus Brito 283; L. Pozzi, Heytesbury e l'autoriferimento 289; P. Freguglia, Sullo *scholium* alla prima proposizione dell'*Euclidis Elementorum libri XV* di Cristoforo Clavio 295; C. Cellucci, *De conversione demonstrationis in definitionem* 301; M. Capozzi, La sillogistica di Signer 307; A. Drago, Dalla geometria alla formalizzazione logica: Lazare Carnot 313; E. Casari, Remarks on Bolzano's modalities 319; M. Ferriani, Gli Interessi logici del giovane Peirce: spunti per una rilettura 323; U. Garibaldi - M. A. Penco, A measure-theoretical approach to pre-Bayesian intensional probability 329; V. M. Abrusci, David Hilbert's *Vorlesungen* on logic and foundations of mathematics 333; E. Moriconi, Una nota sul secondo e-teorema di D. Hilbert 339; A. Rainone, Belief-contexts and synonymy in Carnap's semantics 345; G. Hughes, "Every world can see a reflexive world" 351; G. Corsi, Sulla logica temporale dei programmi 359; G. Tamburrini, Mechanical procedures and epistemology 365;

G. Colonna, Sulla sfortuna di certe modalità nella storia della logica 371; Indice 377-378.

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propositions et ontologie chez Pierre Abélard et Grégoire de Rimini 307; Index des auteurs anciens 325; Index des auteurs modernes 333-336.

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Table of Contents: Preface XIX; Preface to the original edition XXI; On the use of symbols and graphical types XXIII-XXV; Part 1. The problem. I. Introduction: problems and sources 3; II. Naming what is 34; III. The semantics of the logical constants 50; Part 2. Historical survey. IV. From the history of the logic of indefinite propositions 75; V. From the history of the logic of individual propositions 141; VI. Singular - General - Indefinite 180; VII. The identity theories of the copula 204; Part 3. Descent. VIII. Argument by analogy 291; IX: The problem of the logic of relations and its connection with the logic of the articles 337; Part 4. X: Introduction of indefinite propositions by ekthesis 381; XI. Conjunction, potentiality, and disjunction 417; XII. Summary and conclusion 457; Bibliography 482; Index of proper names 502; Index of subjects 509.

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38. Gensler, Harry. 2006. *Historical Dictionary of Logic*. Lanham: Scarecrow Press.

Contents: Editor's Foreword by Jon Woronoff IX; Preface XI; Notation XIII; Chronology XV; Introduction XXIX-XLIV; The Dictionary 1; Bibliography 255; About the author 307.

This book is an encyclopedia of logic. It introduces the central concepts of the field in a series of brief, nontechnical "dictionary entry" articles. These deal with topics like logic's history, its various branches, its specialized vocabulary, its controversies, and its relationships to other disciplines. While the book emphasizes deductive logic, it also has entries on areas like inductive logic, fallacies, and

definitions -- and on key concepts from epistemology, mathematics, and set theory that are apt to arise in discussions about logic. Following the series guidelines, Historical Dictionary of Logic tries to be useful for specialists (especially logicians in areas outside their subspecialties) but understandable to students and other beginners; so I avoid topics or explanations that are so technical that only math majors would understand.

The major part of this book is the dictionary section, with 352 entries. While these are arranged alphabetically, there is also an organization based on content. Four very general entries start with "logic:" and serve mainly to point to more specific entries (like "propositional logic"); these in turn often point to related topics (like "negation," "conditionals," "truth tables," and "proofs"). So we have here a hierarchy of topics. Here are the four "logic:" entries:

logic: deductive systems points to entries like propositional logic, modal logic, deontic logic, temporal logic, set theory, many-valued logic, mereology, and paraconsistent logic.

logic: history of is about historical periods and figures and includes entries like medieval logic, Buddhist logic, twentieth-century logic, Aristotle, Ockham, Boole, Frege, and Quine.

logic: and other areas relates logic in an interdisciplinary way to other areas and includes entries like biology, computers, ethics, gender, God, and psychology.

logic: miscellaneous is about everything else (including technical terms) and includes entries like abstract entities, algorithm, ad hominem, inductive logic, informal/formal logic, liar paradox, metalogic, philosophy of logic, and software for learning logic.

The entries vary in length from a sentence or two to several pages. The front of the book has three important parts:

A short notation section gives the main logical symbols that I use in the book, along with alternative symbols that others sometimes use.

A chronology lists some of the main events in the history of logic.

An introduction tries to give an overall view of logic, the big picture, in order to give a broader context for the dictionary entries.

The back of the book has a substantial bibliography on related readings." (from the Preface).

39. Imbert, Claude. 1999. *Pour Une Histoire De La Logique. Un Héritage Platonicien*. Paris: Presses Universitaires de France.
40. Jennings, Raymond Earl. 1994. *The Genealogy of Disjunction*. New York: Oxford University Press.
41. Kneale, William, and Kneale, Martha. 1962. *The Development of Logic*. Oxford: Clarendon Press.
Reprinted 1975 with corrections.
42. Kotarbinski, Tadeusz. 1964. *Leçons Sur L'histoire De La Logique*. Paris: Presses universitaires de France.
Traduit de l'édition original polonaise (1957) par Anna Posner.
43. Lejewski, Czeslaw. 1981. "Logic and Ontology." In *Modern Logic - a Survey. Historical, Philosophical, and Mathematical Aspects of Modern Logic and Its Applications*, edited by Agazzi, Evandro, 379-398.
Dordrecht: Reidel.
"My discussion of the topic prescribed by the title of the paper will consist of two parts. In Part I, I propose to discuss, in very general and informal terms, the nature of logic and ontology, and the relationship that seems to connect these two disciplines. In Part II, I intend to examine, in some detail, a certain specific problem, which concerns logicians as well as ontologists, a problem which has been with us for about forty years, and which lacks a generally acceptable solution." p. 379.
44. Lewis, Clarence Irving. 1918. *A Survey of Symbolic Logic*. Berkeley: University of California Press.

Reprinted New York, Dover Publishing 1960, with the omission of chapter V and VI.

45. Mangione, Corrado, and Bozzi, Silvio. 1993. *Storia Della Logica. Da Boole Ai Nostri Giorni*. Milano: Garzanti.
46. Mates, Benson. 1965. "A Brief Outline of the History of Logic." In *Elementary Logic*, 205-230. New York: Oxford University Press.
Second revised edition 1972.
47. Nidditch, Peter H. 1962. *The Development of Mathematical Logic*. London: Routledge & Kegan Paul.
Contents: 1. Purpose and language of the Book 1; 2. Aristotle's syllogistic 3; 3. The idea of a complete, automatic language for reasoning 14; 4. Changes in algebra and geometry, 1825-1900 23;
5. Consistency and metamathematics 30; 6. Boole's algebra of logic 33; 7. The algebra of logic after Boole: Jevons, Peirce and Schroeder 44; 8. Frege's logic 59; 9. Cantor's arithmetic of classes 66; 10. Peano's logic 73; 11. Whitehead and Russell's 'Principia Mathematica' 77; 12. Mathematical logic after 'Principia Mathematica': Hilbert's metamathematics 79; Further reading 86; Index 87.
48. Nuchelmans, Gabriel. 1973. *Theories of Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*. Amsterdam: North-Holland.
Contents: Preface V; 1. Introduction 1; 2. Plato 13; 3. Aristotle 23; 4. The Stoic *lekton* 45; 5. The Stoic *axioma* 75; 6. Later developments in Greek antiquity 89; 7. The transition to the Latin West 105; 8. Boethius and the beginning of the Middle Ages 123; 9. Abelard 139; 10. The doctrine of the *dictum* in the century after Abelard 165; 11. Preliminaries to the fourteenth century debate 177; 12. The *complexum* theory of Ockham and Holkot 195; 13. Some reist opponents of Ockham and Holkot 209; 14. The theory of the *complexe significabile* 227; 15. The oppositions against the theory of the *complexe significabile* 243; 16. The

significate of a true *propositio* 273; Selective bibliography 281; Indices 289-309.

"This book is intended as the first part of a history of those problems and theories in the domain of philosophical semantics which nowadays are commonly referred to as problems and theories about the nature and the status of propositions. Although the conceptual apparatus and the terminology by means of which questions concerning propositions were asked and answered have considerably varied from period to period, the main types of disputes and solutions have remained remarkably constant. One of the aims of this study is precisely to trace the vicissitudes of the vocabulary in which this refractory topic was treated in the remote past. As is evident from the Bibliography, many parts of the field have been explored by predecessors. Guided by their results, I have tried to fill in more details and to design a provisional map of the area as a whole."
(From the Preface).

49. ———. 1980. *Late-Scholastic and Humanist Theories of Proposition*. Amsterdam: North-Holland.

Contents: Part One: Late-Scholastic theories of the proposition. 1. Introduction 3; 2. Different kinds of propositions and their ways of signifying 9; 3. The tie between the principal parts of a proposition 27; 4. The adequate signification and the adequate significate of a proposition 45; 5. Disguised propositions 74; 6. Judgment 90; 7. The object of judgment 103; 8. Propositions as bearer of truth-values 114; Part Two: Humanist theories of proposition. 9. Introduction 143; 10. The first attempt at reorientation 146; 11. The Melanchtonian treatment of a theme 159; 12. Peter Ramus 168; 13. The diffusion of Ramist terminology 180; 14. Eclectics 189; Epilogue 204; Bibliography 209; Indices 224-237.

"After publishing, more than six years ago, my *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, I initially intended to cover

the remaining phases of the history of the semantics of declarative sentences in one volume. As the material proved more abundant and unwieldy than I had anticipated, I decided to limit the next instalment to the period between 1450 and 1650. Accordingly, the present book treats the theories of the proposition put forward by late-scholastic and humanist philosophers. It will be followed, in the not too distant future, I hope, by a third volume which will continue the account until the first decades of the nineteenth century.

In making my way through the intricate mass of sources, which are often works that are completely forgotten and extremely hard to obtain, I was greatly assisted by Professor Ashworth's pioneering book on *Language and Logic in the Post-Medieval Period*. Moreover, when I had practically finished my manuscript, she was kind enough to send me the draft of an article entitled 'Theories of the Proposition: Some Early Sixteenth Century Discussions'. As this article is based on a corpus of texts which is slightly different from mine, it enabled me to check some of my results against the findings of a very competent collaborator in this lonely field of research. I can only advise the reader to do the same when the article will have been published (in *Franciscan Studies* [38, 1978 pp. 81-121])."

50. ———. 1983. *Judgment and Proposition. From Descartes to Kant*. Amsterdam: North-Holland.

Contents: 1. The legacy of scholasticism and humanism 9; 2. Idea and judgment in Descartes 36; 3. Repercussions of Descartes' theory of judgment 55; 4. Arnauld and the Port-Royal *Logic* 70; 5. Some eighteenth-century critics of the Port-Royal view 88; 6. Geulincx's contribution to Cartesian philosophy of logic 99; 7. Ideas and Images. Gassendi and Hobbes 121; 8. The heyday of British empiricism 139; 9. Sensationalism and its critics in France 174; 10. Common sense philosophy and nominalism in Great Britain 194; 11. Leibniz's logical realism 214; 12. The German enlightenment

233; 13. Some problems in Kant and his contemporaries 246; Epilogue 257; Bibliography 262; Indices 280-295. "This volume completes -- for the time being -- a series of investigations that were undertaken with the purpose of tracing in some detail the development of that field of logico-semantic research for which the foundations were laid in the first chapters of Aristotle's *De interpretatione* and which, in honour of that pioneer, might perhaps be called apophantics. The first part -- *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity* -was published in 1973, followed by a second part -- *Late-Scholastic and Humanist Theories of the Proposition* -- in 1980. The last instalment takes the account from the beginning of the modern period to roughly that point in the nineteenth century from which on discussions of the subject in the recent past and contemporary systematic treatment tend to coalesce. " (From the Preface).

51. Prantl, Carl. 1997. *Geschichte Der Logik Im Abendlande*. Hildesheim: Georg Olms.

Anastatic reprint of the original edition printed in four volumes Leipzig, S. Hirz, 1855-1867.

" It is a remarkable fact, unique perhaps in the writing of history, that Carl Prantl, the first to write a comprehensive history of western logic, on which task he spent a lifetime, did it precisely to prove that Kant was right, i.e. that formal logic has no history at all.

His great work contains a collection of texts, often arranged from a wrong standpoint, and no longer sufficient but still indispensable. He is the first to take and discuss seriously all the ancient and scholastic logicians to whom he had access, though mostly in a polemical and mistaken spirit. Hence one can say that he founded the history of logic and bequeathed to us a work of the highest utility.

Yet at the same time nearly all his comments on these logicians are so conditioned by the prejudices we have

enumerated, are written too with such ignorance of the problems of logic, that he cannot be credited with any scientific value. Prantl starts from Kant's assertion, believing as he does that whatever came after Aristotle was only a corruption of Aristotle's thought. To be formal in logic, is in his view to be unscientific. Further, his interpretations, even of Aristotle, instead of being based on the texts, rely only on the standpoint of the decadent 'modern' logic. Accordingly, for example, Aristotelian syllogisms are misinterpreted in the sense of Ockham, every formula of propositional logic is explained in the logic of terms, investigation of objects other than syllogistic characterized as 'rank luxuriance', and so of course not one genuine problem of formal logic is mentioned.

While this attitude by itself makes the work wholly unscientific and, except as a collection of texts, worthless, these characteristics are aggravated by a real hatred of all that Prantl, owing to his logical bias, considers incorrect. And this hatred is extended from the teachings to the teachers. Conspicuous among its victims are the thinkers of the Megarian, Stoic and Scholastic traditions. Ridicule, and even common abuse, is heaped on them by reason of just those passages where they develop manifestly important and fruitful doctrines of formal logic." (From: I. M. Bochenski - *A history of formal logic* - Notre Dame, University of Notre Dame Press, 1961, pp. 6-8).

52. Prior, Arthur Norman. 1962. *Formal Logic*. Oxford: Clarendon Press.

Second edition (First edition 1955).

"This book is designed primarily as a textbook; though like most writers of textbooks I hope it will prove to be of interest to others beside Logic students. Part I covers what I would regard as the 'fundamentals' of the subject-the propositional calculus and the theory of quantification. Part II deals with the traditional formal logic, and with developments which have taken that as their starting-point.

I do not regard this as covering different ground from that covered in Part I under quantification theory, but rather as covering the same ground in a different way. Both ways seem to me to have their merits, and to throw light on one another and the subject. I would say the same of the logic of classes and relations in extension, discussed in Part III, Ch. III ; but the other chapters of this last Part deal with what I take to be genuine extensions of the subject-matter opened up in Part I, in two different directions -modal logic, and 'non-classical' systems of propositional calculus.

Negatively, I have attempted to keep within the range indicated by my title: I have touched hardly at all upon 'scientific method', and have indulged in a minimum of metaphysical reflection (avoiding, for example, such topics as the relations between 'propositions' and sentences). In the greater part of the book the symbolic notation used is that of Łukasiewicz, with minor modifications. This seems to me unquestionably the best logical symbolism for most purposes, and I should like to have helped to show that it is. In Part III, Ch. III, however, I have used the notation of Principia Mathematica (referred to throughout this work as PM) ; in the particular field there covered, there is no other as fully developed or as deservedly well known. It does students no harm to learn to use two different notations, and to employ the one that is best for whatever they may have in hand at the time. Other innovations beside the symbolism are these: (i) throughout the book, a fairly frequent setting out of formal proofs (something to which the Polish notation particularly lends itself) ; (ii), in Part I, the devotion of particular attention to completeness proofs, and to forms of the propositional calculus not yet widely studied, especially to varieties of it which use the 'standard false proposition' \circ , and variable operators as well as propositional variables; (iii), in Part II, considerable use of scholastic material and of material from the writings of de Morgan. I have included these items from a sense of their

importance rather than of their novelty, and have placed them where their appearance seems to me most rational and economical; but if any teacher wishes to use this book for a more orthodox type of logic course, there are various ways in which he may do so. If, for example, he wishes to introduce the traditional logic at an early stage, he could pass to Part II immediately from Part I, Ch. I, Ch. II, § 1, and Ch. IV, §§ and 2. (This procedure would have in any case the advantage of giving the student an interval of rest from pure symbolism before passing to the more interesting but more difficult aspects of the propositional calculus.) If he wishes to give the more usual sort of 'modern' course, he could pass immediately on from the same portions of Part I to Part III, Ch. I, § 2 and Ch. III." (from the Preface to the first edition). "Apart from one or two very small corrections, I have in this edition left the body of the work just as it was, but have completely revised the two original appendixes and placed a wholly new appendix (the present Appendix II) between them. These alterations and additions will, I hope, make the appendixes much more valuable both for general reference and for pedagogical use. In the latter connexion I would particularly recommend that what I have said in the body of the book on quantification theory - which has met with some just criticisms - be read in conjunction with § 4 of Appendix I. There is also abundant material for exercises in simply verifying some of the relations asserted to hold between postulate-sets in this Appendix, using to this end the techniques sketched in the one that follows it." (from the Preface to the Second edition).

53. Scholz, Heinrich. 1961. *Concise History of Logic*. New York: Philosophical Library.
Translated from the German edition "*Abriss der Geschichte der Logik*" (1931) by Kurt F. Leidecker.
Translated in Italian as: "*Breve storia della logica*" Milano, Silva Editore 1967.

Contents: Preface to the first edition (1931) V; Introduction by Kurt F. Leidecker IX; Abbreviations XIII-XIV; Types of logic 1; The Classical type of formal logic 24; The Modern type of formal logic 50; Bibliographic appendix 76; Supplementary observation 86; Notes 89; Index of names 137-140.

"The reader of this *Concise History of Logic* is entitled to know what the objections to this book are and why it was nevertheless published.

Carl Prantl (1820-1888) produced between 1855 and 1870 a standard work and source book for the history of logic from Aristotle to the end of the 15th century in which it is possible even now to appreciate an admirable mastery of the material, an exemplary punctiliousness in presenting the sources, and a nearly equally perfect intuitive certainty with which the material has been selected. For the history of modern logic there simply does not exist any work which could remotely be compared with Prantl's. Indeed, such a work will be written only when more shelf footage of monographs is available and each monograph can be considered on a par with the one Louis Couturat (1868-1914) wrote on the logic of Leibniz. (1)

It is, therefore, incumbent on us to state boldly that the present concise history is a hazardous enterprise. For, it is impossible to summarize knowledge which does not even exist as yet, and which cannot since his time. However, in our endeavor we must never lose sight of the fact that the logic of antiquity, and to a considerable degree the logic of the middle ages, have come down to us in heaps of fragments.

A third and very great flaw is the multiplicity of forms in which logic manifested itself, particularly in three stages; when it was raised to the first power in the days after the Logic of Port Royal (1662); when it was raised to the second power after Kant; and finally when it was raised to the third power after Hegel, a stage in which we have witnessed a

plethora of forms right down to the present where we are no longer able to survey them.

I have risked writing this brief history nevertheless, supported by my belief in the new logic, a belief that has aided me in conquering my inhibitions. This belief has encouraged me again and again in the difficult task of condensing the vast material into the limited space available. I owe thanks to my publisher for the understanding which prompted him to acknowledge the necessity of my going beyond the limits which I had agreed to at the outset. This made it possible to produce a little volume in which not merely beliefs could be stated, but knowledge could be spread out; knowledge, I might add, which I can back up completely by my own researches. Nothing has been referred to or touched upon in this concise history which has not passed through my fingers or which has not been thoroughly studied by me. All dates, likewise, were checked so that I have been able to correct, and that without much ado, not a few of the errors in Eisler's indispensable *Philosophen Lexikon* as well as other, older, reference works.

I am sending this little volume into the world in the hope that it will be created by a tour de force in mere sampling of, what can only be actually gotten hold of by most thorough and painstaking research, and even at that not so without reliance on one's intuition and an eye sharpened by long experience.

Another and still greater flaw in the enterprise is this. When Prantl wrote his history of logic the type of modern formal logic which is now available in the shape of symbolic logic had not yet been called into being. There was, therefore, no dependable position by which such a history could be oriented and from which it could be surveyed. For, what formal logic really is we know only because symbolic logic provided the 'conceptual equipment needed to answer this problem. In general, too, the extant gains registered by the

modern symbolic treatment of logic have become such an essential factor in making pronouncements regarding the history of logic that we are constrained to say that an essential knowledge and mastery of the results of symbolic logic have become an indispensable condition for any and all fruitful study of the history of logic. Prantl had to rely completely on himself in sifting the material, in highlighting and playing down certain aspects. He worked under a serious handicap by virtue of the nonexistence of exact formal logic in his day. This resulted in the formation of value judgments which, measured by the standards of rigorous critical thinking now in demand, are shot through with very bad blunders. These value judgments, thus, should first be corrected. Then the entire magnificent material which Prantl spread out before us must be subjected to a fresh and thorough reinterpretation, making use of all the material contributions that have been made the hope that I might thereby kindle in the reader a confidence, which he might not have had before, in the new logic upon which I have based my history, hoping of course that he may overcome all obstacles with which we have to reckon. Furthermore, I possess faith that the history of logic, with the new light which can be thrown on it today, will become a beautiful and fascinating chapter of western civilization, so that at long last it may be studied with pleasure and sympathy. This accomplished, there will follow the labors of scholars as a matter of course which will close the gaps in the history of logic which we still, regretfully, have to admit today." (Preface).

54. Ueberweg, Friedrich. 2001. *System of Logic and History of Logical Doctrines*. Bristol: Thoemmes Press.
Reprint of the 1871 edition translated from the German, with notes and appendices by Thomas M. Lindsay.
55. Velarde Lombraña, Julián. 1989. *Historia De La Lógica*. Oviedo: Universidad de Oviedo.

Indice de materias: Prologo de Gustavo Bueno Martínez V-XV; Introducción 17; I. Los orígenes 19; II. Aristoteles 31; III: Megarico-Estoicos 84; IV. Epicureos 97; V. El fin de la Antigüedad clásica 100; VI. La Edad Media 109; VII: Ramón Llull 153; VIII. Humanistas y Cartesianos 154; IX. Leibniz 166; X. La lógica simbólica en el siglo XVIII 207; XI. Lógica filosófica en los siglos XVIII y XIX 218; XII: El algebra de la lógica 244; XIII. La logística hasta a Russell 300; XIV. Russell 365; XV. El programa Hilbertiano 397; Apéndice: lógica polivalente 409; Bibliografía de carácter general 419; Indice de autores 421-431.

56. Weinberg, Julius R. 1965. *Abstraction, Relation, and Induction. Three Essays in the History of Thought*. Madison: University of Wisconsin Press.

BIBLIOGRAPHIES ON THE HISTORY OF LOGIC

1. Rabus, Leonhard. 1868. "Logische Literatur." In *Logik Und Metaphysik. I. Erkenntnislehre, Geschichte Der Logik, System Der Logik*, 453-518. Erlangen: Andreas Deichert. "... the best bibliography of logic (*Neuzeit*) has been, before Risse's work, the impressive list printed in the year 1868 by Verlag von Andreas Deichert (Druck der Universitäts-Buchdruckerei von E. Th. Jacob in Erlangen) as appendix to Rabus' *Logik und Metaphysik*. And even with respect to Risse's *Bibliographia Logica* one may assert that Rabus has not been completely defeated; there are in fact some authors (such as N. Wallerius and S. Hasenmüller) mentioned by Rabus but not by Risse.

(...)

It is curious to observe how the *Logische Literatur* of G.L. Rabus has been so much overlooked. (...) It occupies pages 443 to 518 and provides more than 1200 authors. This

enormous list is distributed in six chronological sections. Rabus' bibliography is a remarkable and original contribution: almost 1000 authors are recorded from the Aufkommen des Protestantismus until the year 1865. In this sense it is a necessary complement to Prantl's unfinished work. But, in contrast with Prantl, Rabus offers to the XXth century reader a pure masterpiece of historical research, free from subjective interfering commentaries. The seventh section of the bibliography: *Hülfsmittel zum Studium der Geschichte der Logik* shows the very wide frame in which Rabus conducted his work although it is not clear whether the quoted sources were exhaustively investigated.

Rabus' bibliography from the Renaissance onwards is also a remarkable supplement to I. M. Bochenski's bibliography (*Formale Logik*, first ed. 1956) and offers to contemporary logicians interested in the history of logic, the possibility of exploring a wide terra incognita. In fact, until now historical research from the point of view of contemporary logic has concentrated on centuries previous to the Renaissance (see I. M. Bochenski, *Formale Logik*, p. 297 and W. and M. Kneale, *The development of logic*, p. 298)."

From: Ignacio Angelelli - *The "Logische Literatur" of L. Rabus* - in: W. Arnold, H. Zeltner (Eds.) - *Tradition und Kritik. Festschrift für Rudolf Zocher zum 80. Geburtstag* - Frommann Verlag, Stuttgart, 1967, pp. 39-42.

2. Church, Alonzo. 1936. "A Bibliography of Symbolic Logic (First Part)." *Journal of Symbolic Logic* no. 1:121-218. Current bibliographies regularly thereafter.

"There is presented herewith what is intended to be a complete bibliography of symbolic logic for the period 1666-1935 inclusive.

In the compilation use has been made of existing bibliographies, including those in Venn's *Symbolic logic*, Schröder's *Vorlesungen Über die Algebra der Logik* (vol. 1 and vol. 2 part 2), Lewis's *A survey of symbolic logic*, the Royal Society index, the International catalogue of scientific

literature, and the bibliographical journals, *Jahrbuch Über die Fortschritte der Mathematik* and *Zentralblatt für Mathematik und ihre Grenzgebiete*, as well as many bibliographies of special authors or special subjects. In addition many titles have been included as a result of search through bound volumes of journals, or from references found in the literature, or from information supplied by authors themselves or others. So far as possible the original work (or a reprint of it) has been consulted in each case before its inclusion in the bibliography. In a number of cases where it has proved to be very difficult to obtain a copy of the original work, titles have been included on the basis of what was believed to be good authority as to existence and content, checking, however, one source of information against another in order to avoid the reproduction of typographical and other errors.

It has been the intention to confine the bibliography to symbolic logic proper as distinguished from pure mathematics on the one hand and pure philosophy on the other. The line is, of course, difficult to draw on both sides, and perhaps has not herein always been drawn consistently, but the attempt has been necessary in order to keep within reasonable limits of length.

By symbolic logic is understood the formal structure of propositions and of deductive reasoning investigated by the symbolic method."

3. ———. 1938. "A Bibliography of Symbolic Logic (Second Part)." *Journal of Symbolic Logic* no. 3:178-212.
4. Risse, Wilhelm. 1965. *Bibliographia Logica. Verzeichnis Der Druckschriften Zur Logik Mit Angabe Ihrer Fundorte (1472-1800)*. Hildesheim: Georg Olms.
Volume I.

"No other branch of philosophy presently possesses a bibliography quite so extensive and comprehensive as this one for logic, which is a by-product, as the *Vorwort*

explains, of Risse's systematic history of the development of logic, *Die Logik der Neuzeit*.

Volume 1 (1965, 293p.) lists in chronological arrangement monographs published from 1472 to 1800. Volume 2 (1973, 494p.) does the same for the period 1801-1969. Both volumes cite holding libraries (mainly European but also some American) for most of the works listed. Volume 3 (1979, 412p.) lists articles published both in periodicals and in anthologies, arranged according to a detailed classification system outlined in the front. Volume 4 (1979, 390p.) is a catalogue of 3,006 manuscripts, arranged by author if known and by title if anonymous, with separate sections for medieval and more recent manuscripts. Holding libraries or archives are indicated.

All volumes are thoroughly indexed."

From: Hans E. Bynagle - *Philosophy. A guide to the reference literature. Third edition* - Westport, Libraries Unlimited, 2006, pp. 724-725.

5. ———. 1973. *Bibliographia Logica. Verzeichnis Der Druckschriften Zur Logik Mit Angabe Ihrer Fundorte (1801-1969)*. Hildesheim: Georg Olms.
Volume II
6. ———. 1979. *Bibliographia Logica. Verzeichnis Der Zeitschriftenartikel Zur Logik*. Hildesheim: Georg Olms.
Volume III.

"Preface: The third volume of the "Bibliographia Logica" lists papers on logic and the history of logic which have appeared in periodicals and anthologies. The list is incomplete for two reasons: (1) Numerous works were inaccessible to me, particularly earlier periodicals and those published outside Germany; (2) applications of logic in other disciplines are included only if logical themes are mentioned in the titles.

The variety of themes and conceptions of logic led to an arrangement of titles in three categories:

A: Logic ("traditional logic", "classical logic"), starting with Aristotle;

B: Logistics ("symbolic logic", "mathematical logic"), representations of logic in the mathematical tradition and using mathematical means;

C: History of logic.

The criterion used in categorizing the individual titles is the theme dealt with, not the point of view of the author.

The three categories are indicated by letters; sub - categories by numbers. The arrangement of material is given in the table of contents in German, English, and French (p. 9*). Titles of frequently quoted periodicals are abbreviated (Table of symbols p. 401)."

7. ———. 1979. *Bibliographia Logica. Verzeichnis Der Handschriften Zur Logik*. Hildesheim: Georg Olms. Volume IV

8. Ashworth, Earline Jennifer. 1974. "Some Additions to Risse's *Bibliographia Logica*." *Journal of the History of Philosophy* no. 12:361-365.

"One of the greatest contributions to the history of logic in recent years was the publication in 1965 of Wilhelm Risse's *Bibliographia Logica*, Vol. I, which covers the years from 1472 to 1800. However, despite the fact that Risse's monumental work lists an estimated 8,000 logical works, it is still far from comprehensive, as Mr. Hickman pointed out in an earlier article in this journal. Why this should be the case immediately becomes apparent when one starts to work in a library such as the Bodleian at Oxford with its handwritten catalogue of books printed before 1920 and its lack of any specialized bibliographies such as the British Museum has provided for early printed books. Even in well catalogued libraries such as the University Library at Cambridge it can be difficult to locate texts, and one often stumbles across a new logical work through the accident of its being bound in the same volume as better known works. As a result of my researches over the last few years, I have

put together a list of works which do not appear in Risse in the hope that other historians of logic may benefit from my discoveries. I cannot, however, claim that I have exhausted the resources of the libraries which I have visited. Doubtless there are still not only new editions but new authors left to be discovered.

(...)

This paper concerns logic texts published between 1472 and 1800. I list 20 items whose authors do not appear in Risse, 12 items whose authors appear in Risse in connection with another title or other titles, and 58 items which appear in Risse in another edition or in other editions. I indicate the libraries in which all these items are to be found, and I also list some useful bibliographical works."

9. ———. 1978. *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century. A Bibliography from 1836 Onwards*. Toronto: Pontifical Institute of Medieval Studies.

From the Preface: "My main interest in drawing up this bibliography was to list all the books and articles which have to do with formal logic and semantics from the time of Anselm to the end of the seventeenth century. I see this area as including such topics as consequences, syllogistic, supposition theory, and speculative grammar, but as excluding such topics as the categories, the struggle between nominalism and realism, and pure grammar. It is not, of course, always easy to draw a line between works which are concerned with formal logic and semantics and works which are not so concerned, and inevitably my choice of borderline cases will seem too restrictive to some and too liberal to others. However, my hope is that I have not excluded any book or article which obviously falls into the area I have delimited. I have used the phrase 'the tradition of medieval logic' in the title in order to indicate that although I include the seventeenth century, I am not concerned with the contributions of modern philosophy. The work of men such

as Pascal, Descartes, Arnauld, Leibniz and Locke carries us far indeed from medieval discussions of logic and semantics. Moreover, there is already such an extensive literature on these figures that to include them in my bibliography would completely change its character. On the other hand, I do include humanist logic and renaissance Aristotelianism, since they involve a reaction to the medieval tradition which can only properly be understood in the light of that tradition. (...) The earliest book I list is Victor Cousin's 1836 edition of Abelard, since this can properly be viewed as the starting point of modern scholarly work on medieval logicians." p. VII.

10. Pironet, Fabienne. 1997. *The Tradition of Medieval Logic and Speculative Grammar. A Bibliography (1977-1994)*. Turnhout: Brepols.

From the Preface: "This book is a continuation of Earline Jennifer Ashworth's bibliography, *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century: A Bibliography from 1836 Onwards*, that is the reason why the title is partly adopted from it. The aim and the general principles are the same as Ashworth's ones, but I have broadened the field: this bibliography itemizes books and articles written between 1977 and 1994 on logic and grammar from Boethius to the end of the seventeenth century, not excluding topics as the categories and, in some extension, the struggle between nominalism and realism nor works of or on men such as Pascal, Descartes, Arnauld, Leibniz and Locke. Of course, main topics are still consequences, syllogistic, supposition theory, insolubles, obligations, semantics, speculative grammar, etc., but I think that the extension to subjects and authors mentioned above corresponds to the way researches in that field evolved last years. First, we note that the number of editions, translations and studies on medieval logic and grammar has considerably increased: about 1000 items from 1836 to

1976, about 2000 from 1977 to 1994. Second, we see that it is difficult to make a clear distinction between different branches of knowledge, this is why many people work on the relations between logic or grammar and related matters, such as metaphysics, physics, theology, etc. Third, always more people working on modern philosophy tend to go back to medieval philosophy to search for the roots of the texts they study, while medievalists are interested to know which influence medieval philosophers have had on their successors. With a very few exceptions, book reviews and articles from general works are not included." p. VII.

11. Müller, Gert Heinz, and Lenski, Wolfgang, eds. 1987. *[Omega] - Bibliography of Mathematical Logic*. Berlin: Springer.

Six volumes: 1. Classical logic edited by Wolfgang Rautenberg; 2. Non-classical logics edited by Wolfgang Rautenberg; 3. Model theory edited by Heinz-Dieter Ebbinghaus; 4. Recursion theory edited by Peter G. Hinman; 5. Set theory edited by Andreas R. Blass; 6. Proof theory; Constructive mathematics edited by Jane E. Kister, Dirk van Dalen, Anne S. Troelstra.

"This collection of six hefty, orange volumes is a dream come true for anyone interested in mathematical logic and its history. It contains a remarkably complete bibliography of the field, from 1879, the year of Frege's *Begriffsschrift*, through 1985.

(...)

Each volume has a number of introductory sections, including a general survey of work in the volume, and useful appendices of various sorts.

However, the core of each volume consists of three indices: Subject Index, Author Index, and Source Index." p. 524

Jon Barwise - *Review* - in: Bulletin of the American Mathematical Society, Vol. 19, 1988, pp. 524-528.

12. Anellis, Irving A. 1995. "Studies in the Nineteenth-Century History of Algebraic Logic and Universal Algebra. A

- Secondary Bibliography." *Modern Logic* no. 5:1-120.
13. Redmond, Walter Bernard. 1972. *Bibliography of the Philosophy in the Iberian Colonies of America*. The Hague: Martinus Nijhoff.
- Contents: Preface VII; Abbreviations XIII-XIV; Catalogue of manuscripts and printed works on Philosophy from the Colonial Period in Latin America; Philosophical works from Colonial Latin America 1; Anonymous works 111; Appendix of some Colonial philosophical works which have become lost 134; Bibliography of the secondary literature concerning the philosophy of the Colonial Period of Latin America 139-174.
- "The first part of this bibliography is a catalogue of philosophical writings from colonial Latin America which, on the basis of the secondary literature, are presumed to be extant. It is followed by a short appendix listing some colonial authors whose philosophical works are lost, but which perhaps still exist. The second part of the bibliography contains the secondary literature: studies on the philosophy of colonial Latin America as well as subsequently published texts and translations of the works of the colonial authors. It also contains non-philosophical works to which reference is made in the first section. A brief digest of the content of each philosophical work follows the entry." p. VIII.

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INDEX OF THE SECTION: *ARISTOTLE'S LOGIC*

The Organon

General Introduction

[General Works and Bibliographies on the History of Logic](#)

The Logical Works of Aristotle

[Aristotle's Logic: General Survey and Introductory Readings](#)

[Selected Bibliography on the Logic of Aristotle: General and Introductory Readings](#)

Aristotle's Earlier Dialectic: the *Topics* and *Sophistical Refutations*

[Aristotle's *De Interpretatione*: Semantics and Philosophy of Language](#)

[Annotated bibliography on Aristotle's *De Interpretatione* \(*Peri Hermeneias*\)](#)

[Aristotle's *Prior Analytics*: the Theory of Categorical Syllogism](#)

[Selected Bibliography on Aristotle's Theory of Categorical Syllogism](#)

Aristotle's *Prior Analytics*: the Theory of Modal Syllogism

Selected Bibliography on Aristotle's Theory of Modal Syllogism

Aristotle's *Posterior Analytics*: The Theory of Demonstration

Selected Bibliography on Aristotle's *Posterior Analytics*



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Aristotle's Logic: General Survey and Introductory Readings

A SUMMARY OF ARISTOTLE' SYLLOGISTIC

"We have identified five aspects of Aristotle's syllogistic to highlight the remarkable modernity of his logical investigations: 1) Aristotle took logic to be a formal part of epistemology. A logic is an instrument for establishing knowledge of logical consequence; this is a principal concern of the science of logic. 2) *Prior Analytics* is a metalogical treatise on the syllogistic deduction system. Aristotle exhaustively treated all possible combinations of elemental "syllogistic" argument patterns to determine which have only valid argument instances. 3) Aristotle recognised the epistemic efficacy of certain elemental argument patterns having only valid instances, and he explicitly formulated them as rules of natural deduction in corresponding sentences. 4) *Prior Analytics* is a proof-theoretic treatise in which Aristotle described a natural deduction system and demonstrated certain of the logical relationships among syllogistic rules. In fact, Aristotle modelled his syllogistic in a rudimentary way for this purpose. One important metasystematic result is to have established the independence of a set of deduction rules. Finally, 5) Aristotle worked with a notion of substitution sufficient for distinguishing logical syntax and semantics. In this connection he

also distinguished validity from deducibility sufficiently well to note the completeness of his logic. Our reading of *Prior Analytics* takes Aristotle to have treated the process of deduction much as modern mathematical logicians do and not to have been confused about some fundamental matters of logic. Least of all was he confused, as some commentators believe, about a distinction between “following necessarily” and “being necessary,” both in respect of the distinction between a συλλογισμός or a deduction and a demonstration and of the distinction between assertoric logic and modal logic. Aristotle clearly distinguished between 1) a given sentence’s following necessarily from other given sentences and 2) a given sentence denoting a state of affairs to be necessary (or possible). Seeing that he was concerned with the deduction process helps us to avoid such an error. In any case, Aristotle recognised that, while the conclusion of a given argument follows necessarily from its premises, this necessity might not be evident to a participant. He knew that the epistemic process of deduction produces knowledge, or makes evident, that a given sentence follows necessarily from other given sentences. He considered the product of this epistemic process to be an argumentation that includes a deductive chain of reasoning in addition to the premises and conclusion. He recognised using deduction rules in the epistemic process for establishing validity, and that this process can be applied in a purely mechanical and computational way. Furthermore, Aristotle distinguished (1) the subject matter of a given argument from (2) the use to which a given argument might be put from 3) the varying expertise of a participant. All these matters are distinct from (4) the formal matters underlying any of them. And precisely to examine these formal matters was his project in *Prior Analytics*. In this connection, then, we understand Aristotle to have distinguished two kinds of knowledge that cannot be otherwise: knowledge of what L is true or false, which pertains to sentences, and (2) knowledge of what is valid or invalid, which pertains to arguments." (pp. 110-111)

Gorge Boger, "The Modernity of Aristotle's Logic" in: Demetra Sfendoni-Mentzou et al. (eds.), *Aristotle and Contemporary Science. Vol. II*, Bern: Peter Lang 2001, pp. 97-112.

THE MODERNITY OF ARISTOTLE'S LOGIC

"Only recently have we been able to recover something of Aristotle's promethean accomplishments relating to logic. Indeed, we are recognising more and more that part of the history of modern mathematical logic is to have re-invented the wheel that Aristotle turned many years ago. It is astonishing that for hundreds of years, perhaps dating to before the Port Royal Logic, Aristotelian logic, or traditional logic, has been taught without a single reference to the process of deduction. This was the practice of R. Whately, W. S. Jevons, H. W. B. Joseph, J. N. Keynes, R. M. Eaton, and many others. It is still the practice in untold numbers of introductory textbooks on categorical logic to test a syllogism according to rules of quality, quantity, and distribution, and entirely to overlook the deduction process of chaining syllogisms, not to mention the glaring traditionalist error of taking a syllogism to be either a valid or invalid argument. Jan Łukasiewicz can be credited with being the first to shed light on the syllogistic by examining it with the theoretical apparatus of mathematical logic. But Łukasiewicz and his followers really only "improved" the traditionalist interpretation with a sophistication afforded by mathematical logic. Both lines of interpretation took Aristotle's presentation in *Prior Analytics* to be his own axiomatization of the syllogistic. While traditionalists awkwardly drew lines between sentences (or sentence patterns) in different syllogisms to indicate their logical relationships (their so-called reductions or analyses), axiomaticists such as Łukasiewicz cleverly turned a *συλλογισμός* into a logically true conditional proposition that could be processed by a propositional logic. In

this way the axiomaticists aimed to elucidate the logical relationships among the syllogisms. Again, the epistemic process of deduction explicitly treated in *Prior Analytics* was overlooked. It was not until the early 1970s with the independent works of John Corcoran and Timothy Smiley that the case for Aristotle's reputation as a logician of consummate intelligence and originality was well argued. They established Aristotle to have been concerned with the deduction process just as many modern logicians are. Corcoran and Smiley also used mathematical logic to model Aristotle's syllogistic. However, instead of finding an axiomatization of a logic, they discovered a natural deduction system. But they remained puzzled by reduction, in part, we believe, because they did not think that Aristotle modelled his own system of deduction rules nor that he could envisage distinguishing syntax and semantics. Our interpretation builds on the work of Corcoran and Smiley, and now on that of Robin Smith whose 1989 translation of *Prior Analytics* has incorporated their findings. We believe, however, that Aristotle did model his own system. In particular, we see him as treating a *συλλογισμός* as a rule of deduction in *Prior Analytics* A.4-7, and that he himself was able proof-theoretically to determine certain mathematical properties of his deduction system. He was able to refine the system by eliminating redundant rules, and he affirmed his system's completeness. These are Aristotle's own accomplishments, not merely those of modern logicians who, using mathematical logic, believe themselves to have discovered features of the syllogistic unknown to Aristotle. Indeed, modern logicians might wonder at their "having spoken" Aristotelian logic their whole lives, without any idea of it." (pp. 111-112)

Gorge Boger, "The Modernity of Aristotle's Logic" in: Demetra Sfendoni-Mentzou et al. (eds.), *Aristotle and Contemporary Science. Vol. II*, Bern: Peter Lang 2001, pp. 97-112.

LOGIC AS FORMAL ONTOLOGY

"There are several different conceptions of the nature of logic. Here I want to contrast an ontic conception with an epistemic conception. On one ontic conception logic investigates certain general aspects of 'reality', of 'being as such', in itself and without regard to how (or even whether) it may be known by thinking agents: in this connection logic has been called formal ontology. On one epistemic conception, logic amounts to an investigation of deductive reasoning per se without regard to what it is reasoning about; it investigates what has been called formal reasoning. On this view, logic is part of epistemology, viz. the part that studies the operational knowledge known as deduction. It has been said that one of the main goals of epistemically-oriented logic is to explicate the expression 'by logical reasoning' as it occurs in sentences such as: a deduction shows how its conclusion can be obtained by logical reasoning from its premise-set.

Relevant to the axiomatic method there would be two branches of epistemology: one to account for knowledge of the axioms and one to account for how knowledge of the theorems is obtained from knowledge of the axioms, in other words, one investigating induction and one investigating deduction. The latter is logic according to the epistemic conception.

On the ontic view of logic, on the other hand, logic is an attempt to gain knowledge of the truth of propositions expressible using only generic nouns (individual, property, relation, etc.) and other 'logical' expressions. In the framework of *Principia Mathematica* those are propositions expressible using only variables and logical constants. *Principia Mathematica* is an excellent example of an axiomatic presentation of logic as formal ontology. Below are some typical laws of formal ontology.

Excluded middle: Given any individual and any property either the property belongs to the individual or the property does not belong to the individual.

Noncontradiction: Given any individual and any property it is not the case that the property both belongs to the individual and does not belong to the individual.

Identity: Given any individual and any property, if the property belongs to the individual then the individual has the property.

Dictum de omni: Every property A belonging to everything having a given property B which in turn belongs to everything having another property C likewise belongs to everything having that other property C.

Dictum de nullo: Every property A belonging to nothing having a given property B which in turn belongs to everything having another property C likewise belongs to nothing having that other property C.

Commutation of Complementation with Conversion: Given any relation R the complement of the converse of R is the converse of the complement of R.

From this sample of logic as ontic science we can see how the focus is on ontology, or, as has been said by others, on the most general features of reality itself and not on methods of gaining knowledge. According to Russell *Introduction to mathematical philosophy*, 1919, 169, 'logic is concerned with the real world just as truly as zoology, though with its more abstract and general features.' These six laws are purely ontic in that they involve no concepts concerning a knowing agent or concerning an epistemic faculty such as perception, judgement, or deduction. This is not to deny that there is an epistemic dimension to logic as ontic science but only to affirm that the focus is ontic. Every science in so far as it is science has an epistemic dimension. The epistemic differs from the ontic more as size differs from shape than as, say, animal differs from plant.

Logic as ontic science was referred to above as formal ontology. Logic as epistemic metascience may in like manner be called formal epistemology. It is important and interesting to note that both are called formal logic but for very different reasons. Some formal onticists justify the adjective formal by reference to the fact that its propositions are expressed exclusively in general

logical terms without the use of names denoting particular objects, particular properties, etc. cf. Russell 1919, 197. Some formal epistemicists justify the adjective formal by reference to the fact that the cogency of an argumentation is subject to a principle of form and in particular to the following principles: (1) every two argumentations in the same form are either both cogent or both non-cogent, (2) every argumentation in the same form as a deduction is itself a deduction. In fact, some formal epistemicists such as Boole claimed, with some justification, that they were dealing with the forms of thought, i.e. with the forms of cogent argumentations. For more on cogency of argumentations and the principles of form see Corcoran 1989.

Formal onticists are often easy to recognize because of their tendency to emphasize the fact that formal ontology does not study reasoning per se. In fact, the formal onticists often think that the study of reasoning belongs to psychology and not to logic. For example, Łukasiewicz in his famous book on Aristotle's syllogistic makes the following two revealing remarks.

Łukasiewicz 1957 pages 12 and 73, respectively. 'Logic has no more to do with thinking than mathematics. "[Aristotle's] system is not a theory of the forms of thought nor is it dependent on psychology; it is similar to a mathematical theory...'

There are significant differences among formal onticists. For example, even among those that emphasize the truth-preserving character of deduction some accept the view that it is consequences-conservative as well and some reject this view. For example, Łukasiewicz 1929, 16 explicitly rejects the view that deduction is a process of information extraction. He says that in deductive inference '...we may obtain quite new results, not contained in the premises'." (pp. 17-19)

From: John Corcoran: "The Founding of Logic. Modern Interpretations of Aristotle's Logic", *Ancient Philosophy*, 14, 1994 pp. 9-24.

(to be continued...)

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Selected Bibliography on the Logic of Aristotle: General and Introductory Readings

INTRODUCTORY READINGS ON ARISTOTLE'S LOGIC

1. "Logic, Dialectic and Science in Aristotle." 1994. *Ancient Philosophy* no. 14.
Special issue edited by Robert Bolton and Robin Smith.
Contents: Introduction by the Editors 1; John Corcoran: The founding of logic 9; Timothy Smiley: Aristotle's completeness proof 25; Gisela Striker: Modal vs. assertoric syllogistic 39; James G. Lennox: Aristotelian problems 53; Michael Ferejohn: The immediate premises of Aristotelian demonstration 79; Robert Bolton: The problem of dialectical reasoning in Aristotle 99; Robin Smith: Dialectic and the syllogism 133-151.
2. Allen, James. 1995. "The Development of Aristotle's Logic: Part of an Account in Outline." *Boston Area Colloquium in Ancient Philosophy* no. 11:177-205.
3. Barnes, Jonathan. 1959. "Aristotle's Theory of Demonstration." *Phronesis* no. 14:123-152.
Reprinted in: J. Barnes, M. Schofield, R. Sorabji (eds.) - *Articles on Aristotle Vol 1* - London, Duckworth, 1975, pp. 65-87

4. ———. 1996. "Grammar on Aristotle's Terms." In *Rationality in Greek Thought*, edited by Frede, Michael and Striker, Gisela, 175-202. New York: Oxford University Press. "However that may be, Aristotelian syllogistic concerned itself exclusively with monadic predicates. Hence it could not begin to investigate multiple quantification. And that is why it never got very far. None the less, the underlying grammar of Aristotle's logic did not in itself block the path to polyadicity. The later Peripatetics were conservative creatures and they lacked logical imagination. Moreover, Aristotle himself had assured them that his syllogistic was adequate for all serious scientific needs. As for Aristotle, his service to logic is nonpareil, and it would be grotesque to chide him for lack of inventiveness. It is true that, in logical grammar, he did not climb above the level which he attained in the *de Interpretatione*. But the *Analytics* does not represent a fatal, or even a new, grammatical excursion. And the story of Aristotle's fall, like the story of the fall of Adam, is a myth." pp. 201-202
5. Bastit, Michel, and Follon, Jacques, eds. 2001. *Logique Et Métaphysique Dans L'organon D'Aristote*. Louvain: Peeters.
Actes du colloque de Dijon
6. Berg, Jan. 1983. "Aristotle's Theory of Definition." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Michele Abrusci, Casari, Ettore and Mugnai, Massimo, 19-30. Bologna: CLUEB.
7. Bochenski, Joseph. 1951. "Non-Analytical Laws and Rules in Aristotle." *Methodos* no. 3:77-79.
8. Bolton, Robert. 1990. "The Epistemological Basis of Aristotelian Dialectic." In *Biologie, Logique Et Métaphysique Chez Aristote*, edited by Devereux, Daniel and Pellegrin, Pierre, 185-236. Paris: Éditions du CNRS.
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- Métaphysique Chez Aristote*, edited by Devereux, Daniel and Pellegrin, Pierre, 237-262. Paris: Éditions du CNRS.
11. ———. 1991. "Sur Quelques Malentendus Concernant La Logique D'Aristote." In *Penser Avec Aristote*, edited by Sinaceur, Mohammed Allal, 423-428. Paris: Éditions érès.
 12. Calogero, Guido. 1927. *I Fondamenti Della Logica Aristotelica*. Firenze: Le Monnier.
Second edition with appendixes by Gabriele Giannantoni and Giovanna Sillitti - Firenze, La Nuova Italia, 1968.
 13. Charles, David. 2000. *Aristotle on Meaning and Essence*. New York: Oxford University Press.
 14. Dancy, Russell M. 1975. *Sense and Contradiction: A Study on Aristotle*. Dordrecht: Reidel.
 15. Deslauriers, Marguerite. 2007. *Aristotle on Definition*. Leiden: Brill.
 16. Detel, Wolfgang. 2006. "Aristotle's Logic and Theory of Science." In *A Companion to Ancient Philosophy*, edited by Gill, Mary Louise and Pellegrin, Pierre, 245-269. Malden: Blackwell.
 17. Devereux, Daniel. 1990. "Comments on Robert Bolton's *the Epistemological Basis of Aristotelian Dialectic*." In *Biologie, Logique Et Métaphysique Chez Aristote*, edited by Devereux, Daniel and Pellegrin, Pierre, 263-286. Paris: Éditions du CNRS.
 18. Ebert, Theodor. 1977. "Zur Formulierung Prädikativer Aussagen in Den Logischen Schriften Des Aristoteles." *Phronesis* no. 22:123-145.
 19. Gohlke, Paul. 1936. *Die Entstehung Der Aristotelischen Logik*. Berlin: Junker und Dünhaupt.
"In this monograph Dr. Wilke attempts to distinguish within the text of the *Organon* the different strata which mark the stages of development in Aristotle's logic. This development, he believes, is essentially the history of Aristotle's discovery of the quantity of judgments and the ever increasing role of the particular proposition, which means the gradual emancipation of logic from its metaphysical (i. e. Platonic) background. In the development of the doctrine of modality

Dr. Gohlke finds a second means of distinguishing different chronological strata and a third in the changing theory of method, particularly in the supposed alteration of Aristotle's attitude toward the object of demonstration."

From: Harold Cherniss - Review in *The American Journal of Philology*, 1938, 59, pp. 120-122

20. Gourinat, Jean-Baptiste. 2001. "Principe De Contradiction, Principe Du Tiers-Exclu Et Principe De Bivalence: Philosophie Première Ou *Organon*?" In *Logique Et Métaphysique Dans L'organon D'Aristote*, edited by Bastit, Michel and Follon, Jacques, 63-91. Louvain: Peeters.
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Commentary on: R. Smith - *What use is Aristotle's Organon?* (1999)
Reprinted in: Lloyd P. Gerson (ed.) - *Aristotle. Critical assessments* - Vol. I: *Logic and metaphysics* - New York, Routledge, 1999, pp. 20-27
22. ———. 1995. "Commentary on James Allen *the Development of Aristotle's Logic: Part of an Account in Outline*." *Boston Area Colloquium in Ancient Philosophy* no. 11:206-215.
23. Lear, Jonathan. 1980. *Aristotle and Logical Theory*. Cambridge: Cambridge University Press.
24. Leszl, Walter. 1970. *Logic and Metaphysics in Aristotle. Aristotle's Treatment of Types of Equivocity and Its Relevance to His Metaphysical Theories*. Padova: Antenore.
25. ———. 2004. "Aristotle's Logical Works and His Conception of Logic." *Topoi. An Internationale Review of Philosophy* no. 23:71-100.

"I provide a survey of the contents of the works belonging to Aristotle's *Organon* in order to define their nature, in the light of his declared intentions and of other indications (mainly internal ones) about his purposes. No unifying conception of logic can be found in them, such as the traditional one, suggested by the very title *Organon*, of logic as a methodology of demonstration. Logic for him can also

be formal logic (represented in the main by the *De Interpretatione*), axiomatized syllogistic (represented in the main by the *Prior Analytics*) and a methodology of dialectical and rhetorical discussion. The consequent lack of unity presented by those works does not exclude that both the set of works called *Analytics* and the set of works concerning dialectic (*Topics* and *Sophistici Elenchi*) form a unity, and that a certain priority is attributed to the analytics with respect to dialectic."

26. Łukasiewicz, Jan. 1929. *Elements of Mathematical Logic*. Warsaw: Warsaw University.
English translation by Olgierd Wojtasiewicz edited with footnotes by Jerzy Slupecki, New York, Macmillan, 1963.
27. ———. 1979. "Aristotle on the Law of Contradiction." In *Articles on Aristotle. Vol. 3: Metaphysics*, edited by Barnes, Jonathan, Schofield, Malcolm and Sorabji, Richard, 50-62. London: Duckworth.
Translated by Jonathan Barnes.
Originally published as *Über den Satz des Widerspruchs bei Aristoteles* - in: *Bulletin International de l'Académie des Sciences de Cracovie*, Cl. d'histoire et de philosophie, 1910.
Already translated into English by V. Wedin as *On the principle of contradiction in Aristotle* in *The Review of Metaphysics* 24, 1970/71 pp. 485-509.
28. ———. 1993. *Über Den Satz Des Widerspruchs Bei Aristoteles*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 5).
Translated from the Polish *O zasadzie sprzeczności u Arystotelesa* (1910) by Jacek Barski; with a preface by Joseph Bochenski-
Translated in Italian as: *Del principio di contraddizione in Aristotele* - A cura di Gabriele Franci e Claudio Antonio Testi; presentazione di Maurizio Matteuzzi - Macerata, Quodlibet, 2003.
Translated in French as: *Du principe de contradiction chez Aristote* - Paris, Édition Éclat, 2000

29. Mariani, Mauro. 2000. "Numerical Identity and Accidental Predication in Aristotle." *Topoi. An Internationale Review of Philosophy* no. 19:99-110.
30. Menne, Albert, ed. 1962. *Logico-Philosophical Studies*. Dordrecht: Reidel.
31. Menne, Albert, and Öffenberg, Niels, eds. 1982. *Über Den Folgerungsbegriff in Der Aristotelischen Logik*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 1)
32. ———, eds. 1985. *Formale Und Nicht-Formale Logik Bei Aristoteles*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 2)
33. ———, eds. 1988. *Modallogik Und Mehrwertigkeit*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 3)
34. Mignucci, Mario. 1985. "Puzzles About Identity. Aristotle and His Greek Commentators." In *Aristoteles. Werk Und Wirkung: Paul Moraux Gewidmet. Erster Band: Aristoteles Und Seine Schule*, edited by Wiesner, Jürgen, 57-97. Berlin: de Gruyter.

"Aristotle's conception of identity is too large a subject to be analyzed in a single article. I will try to discuss here just one of the many problems raised by his views on sameness. It is not, perhaps, the most stimulating question one could wish to see treated, but it is a question about logic, where I feel a little more at ease than among the complicated and obscure riddles of metaphysics. My subject will be Aristotle's references to what is nowadays called 'Leibniz' Law'(*LL*): if two objects *x* and *y* are the same, they both share all the same properties.

(...)

First, I will consider Aristotle's statements about (*LL*) and the analyses he gives of some supposed counterexamples to this principle. Secondly, the interpretations of his view among his Greek commentators will be taken into account and their distance from the position of the master evaluated.

As Professor Moraux has taught us, the study of the Aristotelian tradition often gives us the opportunity of understanding Aristotle's own meaning better." pp. 57-58

35. ———. 1996. "Aristotle's Theory of Predication." In *Studies on the History of Logic. Proceedings of the Third Symposium on the History of Logic*, edited by Ignacio, Angelelli and Cerezo, Maria, 1-20. Berlin, New York: de Gruyter.
36. Öffenberg, Niels, and G., Vigo Alejandro. 1997. *Südamerikanische Beiträge Zur Modernen Deutung Der Aristotelischen Logik*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 7)
37. Öffenberg, Niels, and Skarica, Mirko, eds. 2000. *Beiträge Zum Satz Vom Widerspruch Und Zur Aristotelischen Prädikationstheorie*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 8)
38. Öffenberg, Niels, and Surdu, Alexandru, eds. 2004. *Rumänische Beiträge Zur Modernen Deutung Der Aristotelischen Logik*. Hildesheim: Georg Olms.
Zur Modernen Deutung der aristotelischen Logik (Band 9)
"In keeping with the fundamental aims of the series *Zur modernen Deutung der Aristotelischen Logik* -- i.e. to make available articles otherwise difficult to trace -- the editors of this IXth volume present essays from Romania, together with a brief overview of the history of logic in Romania. Although the essays were published in two major international languages -- mainly in French, with some in German -- they appeared in Romanian journals which have a limited circulation in the West. Studies have been selected for their focus on major areas of Aristotelian logic: the theory of categories, syllogistics, logical principles and the theory of knowledge; an additional theme is the historical significance of Theophil Corydaleu's work. All these combine to give a comprehensive view of contemporary Aristotle scholarship in Romania."

39. Parry, William, and Hacker, Edward. 1991. *Aristotelian Logic*. New York: State University of New York Press.
40. Pasquale, Gianluigi. 2006. *Aristotle and the Principle of Non-Contradiction*. Sankt Augustin: Academia Verlag. Traduzione italiana: *Il principio di non-contraddizione in Aristotele* - Torino, Bollati-Boringhieri, 2008. Index: Introduction 9; I. The PNC as a law of reality and thought 17; II. The PNC as indemonstrable principle 69; Conclusion 111; Bibliography 119; Index of names 127-128. "The aim of this study is to discuss the formulation of the principle of non-contradiction (PNC) based on the text of Aristotle. It does not deal with the whole Aristotle's *Metaphysics*. We take certain passages selectively from chapter 3 and chapter 4 of the *Metaphysics*, with a view to interpreting the PNC as a law of being. Our discussion focuses mainly on how Aristotle regards the PNC as a law of reality and a law of thought. Then we shall see the possibility of knowing the PNC by way of intuitive understanding. This leads us to affirm that the PNC is a supreme principle that we cannot demonstrate. The only way Aristotle thinks it possible to speak about the principle in question is by way of confutation, using a dialectical argument: in order to proceed with the confutational proof, the opponent must say something which is meaningful for himself and for others. Aristotle distinguishes proper demonstration from a dialectical argument. We shall also try to specify the dialectical method that Aristotle uses to prove the PNC. This study has two chapters. The first chapter deals with the PNC as a law of reality and thought. This has two parts: the first part deals with *Metaph.* IV, 3, 1005b 19-20; IV, 3, 1005b 26-27; IV, 6, 1011b 15-20 and the second part analyses *Metaph.* IV, 3, 1005b 24-26; IV, 3, 1005b 28-31. These passages treat the PNC as a law of reality and thought respectively.

We shall interpret the PNC as a law of being from two points of view: first, based on the different types of opposition that Aristotle explains in the *Categories*, we shall see the meaning of «contradiction» that Aristotle understands in the formulation of PNC. Our conclusion will be that the greatest opposition that Aristotle has conceived in his whole work is the contradiction between being and non-being. The other oppositions such as contraries, privation and relatives, are oppositions that do not produce contradiction. As we shall see, the opposition between the relatives father and son, between privations vision and blindness, and between the contraries white and black, could not be predicated at the same time of the same subject in the same respect. But they are different from the sense of contradiction that Aristotle conceived in the formulation of the PNC -- because they do not distinguish absolutely the two extreme existences being and non-being." pp. 9-10

41. Perreiah, Alan R. 1993. "Aristotle's Axiomatic Science: Peripatetic Notation or Pedagogical Plan?" *History and Philosophy of Logic* no. 14:87-99.
"To meet a dilemma between the axiomatic theory of demonstrative science in "Posterior analytics" and the non-axiomatic practice of demonstrative science in the physical treatises, Jonathan Barnes has proposed that the theory of demonstration was not meant to guide scientific research but rather scientific pedagogy. The present paper argues that far from contributing directly to oral instruction, the axiomatic account of demonstrative science is a model for the written expression of science. The paper shows how this interpretation accords with related theories in the "Organon", including the theories of dialectic in "Topics" and of deduction in "Prior analytics"."
42. Rijk, Lambertud Marie de. 2002. *Aristotle: Semantics and Ontology. Volume I: General Introduction. The Works on Logic*. Leiden: Brill.

From the Preface: "In this book I intend to show that the ascription of many shortcomings or obscurities to Aristotle resulted from persistent misinterpretation of key notions in his work. The idea underlying this study is that commentators have wrongfully attributed anachronistic perceptions of 'predication', and statement-making in general to Aristotle. In Volume I, what I consider to be the genuine semantics underlying Aristotle's expositions of his philosophy are culled from the *Organon*. Determining what the basic components of Aristotle's semantics are is extremely important for our understanding of his view of the task of logic -- his strategy of argument in particular. In chapter 1, after some preliminary considerations I argue that when analyzed at deep structure level, Aristotelian statement-making does not allow for the dyadic 'S is P' formula. An examination of the basic function of 'be' and its cognates in Aristotle's philosophical investigations shows that in his analysis statement-making is copula-less. Following traditional linguistics I take the 'existential' or hyparctic use of 'be' to be the central one in Greek (*pace* Kahn), on the understanding that in Aristotle hyparxis is found not only in the stronger form of 'actual occurrence' but also in a weaker form of what I term 'connotative (or intensional) be' (1.3-1.6). Since Aristotle's 'semantic behaviour', in spite of his skilful manipulation of the diverse semantic levels of expressions, is in fact not explicitly organized in a well-thought-out system of formal semantics, I have, in order to fill this void, formulated some semantic rules of thumb (1.7).

In chapter 2 I provide ample evidence for my exegesis of Aristotle's statement-making, in which the opposition between 'assertible' and 'assertion' is predominant and in which 'is' functions as an assertoric operator rather than as a copula (2.1-2.2). Next, I demonstrate that Aristotle's doctrine of the categories fits in well with his view of copula-less statement-making, arguing that the ten categories are

`appellations' ('nominations') rather than sentence predicates featuring in an `S is P' formation (2.3-2.4). Finally, categorization is assessed in the wider context of Aristotle's general strategy of argument (2.5-2.7). In the remaining chapters of the first volume (3-6) I present more evidence for my previous findings concerning Aristotle's `semantic behaviour' by enquiring into the role of his semantic views as we find them in the several tracts of the *Organon*, in particular the *Categories* *De interpretatione* and *Posterior Analytics*. These tracts are dealt with *in extenso*, in order to avoid the temptation to quote selectively to suit my purposes."

43. ———. 2002. *Aristotle: Semantics and Ontology. Volume Ii: The Metaphysics, Semantics in Aristotle's Strategy of Argument*. Leiden: Brill.

From the Preface to the first volume: "The lion's part of volume two (chapters 7-11) is taken up by a discussion of the introductory books of the *Metaphysics* (A-E) and a thorough analysis of its central books (Z-H-O). I emphasize the significance of Aristotle's semantic views for his metaphysical investigations, particularly for his search for the true *ousia*. By focusing on Aristotle's semantic strategy I hope to offer a clearer and more coherent view of his philosophical position, in particular in those passages which are often deemed obscure or downright ambiguous.

In chapter 12 I show that a keen awareness of Aristotle's semantic *modus operandi* is not merely useful for the interpretation of his metaphysics, but is equally helpful in gaining a clearer insight into many other areas of the Stagirite's sublunar ontology (such as his teaching about Time and Prime matter in *Physics*).

In the Epilogue (chapter 13), the balance is drawn up. The unity of Aristotelian thought is argued for and the basic semantic tools of localization and categorization are pinpointed as the backbone of Aristotle's strategy of philosophic argument.

My working method is to expound Aristotle's semantic views by presenting a running commentary on the main lines found in the *Organon* with the aid of quotation and paraphrase. My findings are first tested (mainly in Volume II) by looking at the way these views are applied in Aristotle's presentation of his ontology of the sublunar world as set out in the *Metaphysics*, particularly in the central books (ZHO). As for the remaining works, I have dealt with them in a rather selective manner, only to illustrate that they display a similar way of philosophizing and a similar strategy of argument. In the second volume, too, the exposition is in the form of quotation and paraphrase modelled of Aristotle's own comprehensive manner of treating doctrinally related subjects: he seldom discussed isolated problems in the way modern philosophers in their academic papers, like to deal with special issues tailored to their own contemporary philosophic interest."

44. Sainati, Vittorio. 1968. *Storia Dell' "Organon" Aristotelico. I: Dai "Topici" Al "De Interpretatione"*. Firenze: Le Monnier.
45. ———. 1973. *Storia Dell' "Organon" Aristotelico. Ii: L'analitica. Parte Prima. La Crisi Epistemologica Della Topica*. Firenze: Le Monnier.
Ristampato con il titolo: *Dalla Topica all'Analitica in Teoria*, 2, 1993 pp. 1-117
46. ———. 1993. "Aristotele. Dalla Topica All'analitica." *Teoria.Rivista di Filosofia* no. 2:1-117.
Scritto nel 1973.
47. Sisson, Edward. 1939. "The Copula in Aristotle and Afterwards." *Philosophical Review* no. 48:57-64.
48. Smith, Robin. 1993. "What Use Is Aristotle's *Organon*?" *Proceedings of the Boston Area Colloquium in Ancient Philosophy* no. 9:261-285.
Reprinted in: Lloyd P. Gerson (ed.) - *Aristotle. Critical assessments* - Vol. I: *Logic and metaphysics* - New York,

Routledge, 1999, pp. 1-19

49. Solmsen, Friedrich. 1929. *Die Entwicklung Der Aristotelischen Logik Und Rhetorik*. Berlin: Weidmannsche Buchhandlung.

Reprinted Hildesheim, Georg Olms, 2001

50. Sorbi, Luca. 1999. *Aristotele: La Logica Comparativa*. Firenze: Olschki.

Due volumi: I (1999); II (2002).

51. Striker, Gisela. 1998. "Aristotle and the Uses of Logic." In *Method in Ancient Philosophy*, edited by Gentzler, Jyl, 209-226. New York: Oxford University Press.

"Aristotle, as we all know, invented formal logic. Over the last fifty years or so, scholars have learned to recognize that what he presented in the first few chapters of the *Prior Analytics* (An. pr.) is the real thing -- a system of formal logic, whether or not the inspiration for the discovery of the syllogism had anything to do with Platonic division. We no longer hear about the magical force of the middle term or the alleged demonstrative power of first figure syllogisms as opposed to, say, the superficial subtleties of Stoic logic.

Although Aristotle's syllogistic covers only a small part of the field of modern mathematical logic, what he offered contained all the elements of a formal deductive system. He introduces the system of syllogistic moods by defining its technical terms, stating and justifying the primitive rules, and then providing formally correct proofs of the derivative rules. In other words, he developed a complete system of natural deduction, limited indeed by the assumption that all propositions must be simple subject-predicate sentences, but otherwise flawless. (1)

(...)

Aristotle was interested both in logic as a theory and in its more humdrum uses in philosophical, or indeed everyday, argument, and more than half of the text of the *Prior Analytics* is concerned with the uses of logic in argument, rather than with either the exposition of a formal system or

what we would call logical theory. This is what one should expect, since Aristotle invented formal logic for the purposes of his general theory of argument, not just as a formal theory of deductive proof or an 'underlying logic' for demonstrative science. (5) In order to show how the perspective of a general theory of argument differs from that of logical theory, I will argue that although syllogistic can be shown to be complete in the modern logician's sense, it was not considered by its author to be complete in the sense relevant to his project. A deduction system is complete in the modern sense if it allows one to deduce all (and only) the valid formulae.

What Aristotle has in mind when he set out to show that 'every deductive argument (sullogismos) is one of the (syllogistic) figures' (A23 40b20-22) was the claim that every valid deductive argument can be formulated as one or more syllogisms in the narrow sense. This, as Aristotle recognized, is not the case (A 44. 50b2-3). However, I will also argue that he thought syllogistic captured at least a necessary component of every valid deductive argument, and perhaps that it was indeed sufficient as an account of the logical form of scientific demonstration. Finally, I will illustrate the role of formal syllogistic in the theory of argument by a few examples from the second half of book A and from book B." pp. 210-211

(1) This summarizes the conclusion of J. Corcoran, 'Aristotle's Natural Deduction System', in idem (ed.), *Ancient Logic and its Modern Interpretations* (Dordrecht: Reidel. 1974), 122-3.

(5) Corcoran 'Aristotle's Natural Deduction System'. 98.

52. Surdu, Alexandru. 2006. *Aristotelian Theory of Prejudicative Forms*. Hildesheim: Georg Olms. Zur Modernen Deutung der aristotelischen Logik (Band 10). "Alexandru Surdu is an outstanding representative of the Romanian school of Aristotle research. The special characteristic of this school is that its members have not

based their research solely on the *An. pr.* and the *De int.* but have also paid particular attention to the *Categories*. This volume contains a thorough modern interpretation of the *Categories* in which the author takes into account commentators in the Greek, Latin and modern traditions, for example Adolf Trendelenburg.

The symbolic-logical-mathematical presentation of the first chapter of the *Categories* with reference to the difference between the predicative types 'dicitur de' and 'inesse', especially in the case of the ante-predicative 'universal accident' allows the author to elaborate the 'prejudicative forms' which carry no values of truth and do not come into being through assent or denial. Using an original interpretation of these 'prejudicative forms' the author is able to reveal forms and modes similar to those of syllogistics which have hitherto been unknown to either traditional or symbolic logic."

53. Theron, Stephen. 2002. "The Interdependence of Semantics, Logic, and Metaphysics as Exemplified in the Aristotelian Tradition." *International Philosophical Quarterly* no. 42:63-91.

"We need to recognize, or to remember, the priority of being to truth and not to conflate them. We need to explicate the origin of thinking (abstraction) as at one remove from immediate sense-experience.

Syllogistic logic then emerges as a true causal account of reasoning in general; it is not some primitive attempt to outline a formal logical system. An account of *suppositio* as controlling the analogous uses of our finite store of words in reference to an infinite reality itself shaped by crisscross patterns of likenesses, governs the general picture supplied here."

54. Thompson, Manley. 1953. "On Aristotle's Square of Opposition." *Philosophical Review* no. 62:251-265.
55. Viano, Carlo Augusto. 1955. *La Logica Di Aristotele*. Torino: Taylor.

56. ———. 1983. "La Proposizione in Aristotele." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Michele Abrusci, Casari, Ettore and Mugnai, Massimo, 3-18. Bologna: CLUEB.
57. Vuillemin, Jules. 1967. *De La Logique À La Théologie. Cinq Études Sur Aristote*. Paris: Flammarion.
Nouvelle version remaniée et augmentée par l'auteur editée et prefacée par Thomas Benatouil - Louvain-La-Neuve, Peeters, 2008.
58. Wedin, Michael. 1978. "Aristotle on the Existential Import of Singular Sentences." *Phronesis* no. 23:179-196.
59. ———. 1990. "Negation and Quantification in Aristotle." *History and Philosophy of Logic* no. 19:131-150.
"Two main claims are defended. The first is that negative categorical statements are not to be accorded existential import insofar as they figure in the square of opposition. Against Kneale and others, it is argued that Aristotle formulates his O statements, for example, precisely to avoid existential commitment. This frees Aristotle's square from a recent charge of inconsistency. The second claim is that the logic proper provides much thinner evidence than has been supposed for what appears to be the received view, that is, for the view that insofar as they occur in syllogistic negative categoricals have existential import. At most there is a single piece of evidence in favor of the view -- a special case of *echthesis* or the setting out of a case in proof."
60. Weidemann, Hermann. 1980. "In Defence of Aristotle's Theory of Predication." *Phronesis. A Journal for Ancient Philosophy* no. 25:76-87.
61. ———. 1989. "Aristotle on Inferences from Signs (*Rhetoric* I 2, 1357 B 1-25)." *Phronesis* no. 34:343-351.
62. Wieland, Wolfgang. 1967. "Zur Deutung Der Aristotelischen Logik." *Philosophische Rundschau* no. 14:1-27.
63. Williams, C.J.F. 1985. "Aristotle's Theory of Descriptions." *Philosophical Review* no. 94:63-80.

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Semantics and Philosophy of Language in Aristotle's *De Interpretatione*

INTRODUCTION

"The central theme of the *De interpretatione* is the nature of contradiction between assertions. This is a crucially important theme for dialectic, whose regular tasks include that of establishing the contradictory of a proposed thesis, and that of replying to a dilemmatic question by choosing between the affirmation and the negation of a given thesis.(4) The inquiry into language as such, which occupies the first four chapters, is subordinated to this goal.

One apparent obstacle to such a view of the treatise is the (highly suspect) transmitted title, Περὶ ἐρμηνείας, which should probably be understood in the sense "On language" (cf. *De anima* II 8, 420b19-21, where ἐρμηνεία functions as a synonym of δῖάληκτος). A second obstacle is the opening announcement: "First we must determine what a name is, and what a verb is, then what are a negation, an affirmation, an assertion, and a sentence (λόγος)". This programme attaches no special importance to contradiction: affirmation and negation merely appear in the middle of the agenda.(5) In fact though, these two obstacles may helpfully cancel each other out. All we need is the simple hypothesis that the original, lost title of the work (or lecture

course) already specified contradiction as the principal theme. There is in fact good reason to think that the authentic title was *On affirmation and negation*.⁽⁶⁾ In that case the opening sentence was unambiguously understood as specifying the series of definitions required as a *preliminary* to that central theme. Later, when the authentic title was lost, we need only suppose that an early editor was misled by the programmatic opening sentence into identifying language itself as the work's main theme, and inventing its current title, "On language".

As regards the progression in the opening chapters from "name" (ὄνομα) and "verb" (ῥήμα) to "sentence" (λόγος), even this should not really be seen as an investigation of language as such. In ignoring all components of statements other than "names", "verbs", and the negation sign, Aristotle continues and reflects the project in Plato's *Sophist* 260-264 of investigating statements *qua* bearers of truth and falsity. (Even the treatment of negation represents the legacy of the *Sophist*: Aristotle follows Plato (257b-c) in regarding "not" as negating only the word which follows, ⁽⁷⁾ in contrast with Stoic logic, which uses it to negate an entire proposition). This is a further sign that the dominant theme is a specific one, the relation between certain kinds of assertion, rather than language in general." (pp. 88-89)

Notes

(4) My understanding of this and many other aspects of the *De int.* has been transformed by a recently completed Cambridge doctoral thesis, soon to be published: C.W.A. Whitaker, *An analysis of Aristotle's De interpretatione* [published in 1996 as: *Aristotle's De interpretatione. Contradiction and dialectic*. Oxford: Clarendon Press]. He shows that the treatise is to be read in conjunction with the *Topics* much more than with the *Analytics*.

(5) The agenda itself does not observe a strictly linear sequence. The first pair, ὄνομα/ῥήμα, does correspond to chapters 2 and 3 respectively. But ἀπόφασις καὶ κατάφασις καὶ ἀπόφανσις καὶ

λόγος precisely reverses the order followed in chapters 4-6, starting with the two species, then moving to their genus and finally to the genus of their genus. On this, see Montanari (1984, I: 25-31).

(6) I suggest this because (a) the ancient commentators knew a work by Theophrastus entitled *Περὶ καταφάσεως καὶ ἀποφάσεως*, which they said covered the same themes as *Int.* (Theophrastus fr. 71G, 72A, 79, 8 1B FHS; cf. schol. in Ar. *De int.* 94b14-17 Brandis, in Bekker (1961, vol.4), and (b) Theophrastus' other works corresponding to the *Organon* all had identical titles to the matching Aristotelian texts: he wrote a *Categories*, a *Topics*, a *Prior Analytics* and a *Posterior Analytics* (fr. 1, 2, 71F, 100B, 104, 112B, 113B, 117, 124A, 127A, 127B FHS). (Despite fr. 71A and 71E (FHS), it seems most unlikely that Theophrastus wrote a work actually entitled *Περὶ ἐρμηνεύσεως*). An alternative but less plausible hypothesis is that of Maier (1900: 70-1) that it was Theophrastus himself who, finding the Aristotelian treatise already untitled, invented the title *Περὶ καταφάσεως καὶ ἀποφάσεως*. But it is hard to believe that Aristotle's long-term close collaborator on logic and dialectic was ignorant of its authentic title. The likelier story is that it was only after Theophrastus' death that the inauthentic title was invented to fill a gap in the MSS.

(7) This is well demonstrated by Whitaker [1996] *cit.*

From: David Sedley, Aristotle's *De interpretatione* and Ancient Semantics, in: Giovanni Manetti (ed.), *Knowledge Through Signs. Ancient Semiotic Theories and Practices*, Turnhout: Brepols, 1996, pp. 87-108.

"The results so far are as follows. The semantic theory of the *De interpretatione* places itself at the service of Aristotle's study of contradiction between assertions, and reflects a Platonic debate on the question how beliefs and assertions come to be true or false. It is from this perspective, and not for their own sake, that

the theory also addresses itself to the minimum semantic components of assertions, names and verbs. Therefore the semantic passage in chapter 1 is to be thought of as prefixed to the entire work, especially the final chapter, and not specially to chapters 1-4" p. 100

From: David Sedley, Aristotle's *De interpretatione* and Ancient Semantics, in: Giovanni Manetti (ed.), *Knowledge Through Signs. Ancient Semiotic Theories and Practices*, Turnhout: Brepols, 1996, pp. 87-108.

Abbreviation: FHSB = Fortenbaugh, Huby, Sharples and Gutas (eds.), *Theophrastus of Eresus: Sources for His Life, Writings Thought and Influence*, Leiden: Brill 1992 (two volumes).

AN OVERVIEW OF THE DE INTERPRETATIONE (PERI HERMENEIAS)

ORDER OF THE *PERI HERMENEIAS*.

"Since the enunciation is the principal subject of the *Peri Hermeneias* the treatise is divided according to the consideration of the enunciation and its parts. (1) After a preliminary chapter on signification and different ways of signifying, (2) Aristotle treats first the principles of the subject i.e., the principles of the enunciation. These are of two kinds: material and formal. The material (or, as St. Thomas refers to them, "quasi material" (3) principles or integral parts of the enunciation are the noun and the verb, the former signifying the substance of a thing and the latter signifying an action or a passion proceeding from a thing. (4) Aristotle defines the noun as a vocal sound which signifies by convention, without time, no part of which signifies separately. (5) "Vocal sound" is the matter or subject on which the

signification of the noun is imposed; it distinguishes the noun from sounds not emitted by animals. "Which signifies" distinguishes the noun from nonsense words. "By convention" manifests that this signification of a noun proceeds arbitrarily from the human will; the noun is distinct from sounds which are naturally significant, such as groans and cries. "Without time" distinguishes the noun from the verb, and this last phrase, "no part of which signifies separately," distinguishes the noun from speech (*oratio*) of which it is a part. The verb is defined in the same way, except that it signifies with time, since it signifies action. It is moreover, distinguished from the participle in that it is always a sign that something is predicated of another. The formal principle of the enunciation is speech, which is its genus.

(6) The genus of the enunciation is then called its formal principle, because the more universal *in praedicando* since it is not of itself contracted to this or that species, is as a form including the species. A genus is logically superior to the species contained under it; since the species are as subjects of which the genus is predicated, the genus is their formal principle.

Having treated the principles of the subject, Aristotle now takes up the subject, i.e., the enunciation, in the rest of the book. This falls into two sections, the first is on the enunciation absolutely considered, (7) the second is on the different kinds of enunciations.(8) The absolute consideration of the enunciation comprises three parts: its definition, (9) its division, (10) and its property of opposition.(11)

The enunciation is defined as speech in which the true or false is found.(12) This definition distinguishes the enunciation from incomplete speech (*orationes imperfectae*) as well as from questions, commands, prayers, and salutations which do not absolutely signify concepts in which the true or false is found.(13) The first division is into the enunciation which is simply one because what it signifies is one and the enunciation which is one only by conjunction because it signifies many. The latter, called a composite enunciation, is one only *secundum quid*; *simpliciter* it is many.(14) The second division is into the species of the

enunciation: the affirmation and the negation. This division is primarily of the simple enunciation, but can also be applied *ex consequenti* to the composite enunciation.(15)

These divisions are followed by a treatment of opposition between the subjective parts of the enunciation, i.e., between affirmation and negation. First, Aristotle shows how enunciations are opposed to each other,(16) and, secondly, he answers a difficulty about whether in future singular enunciations in contingent matter one of the opposed enunciations must be true or false.(17) To show how enunciations are opposed to each other he takes up, first of all, the opposition of affirmation and negation absolutely considered, i.e., without reference to differences arising from the subject. This opposition of affirmation and negation is called contradiction.(18) In this connection, St. Thomas points out that affirmation and negation divide the enunciation on the part of its very form or mode of enunciating, whereas the true and the false divide it in comparison to things, e.g., "The crow is white" is affirmative in its mode of enunciating, but false; "The crow is not white" is negative and true.

...Philosophus assumit duplicem diversitatem enunciationis: quarum prima est ex ipsa forma vel modo enunciandi, secundum quod dictum est quod enuntiatio vel est affirmativa, per quam scilicet enunciatur aliquid esse, vel est negative per quam significatur aliquid non esse; secunda diversitas est per comparisonem ad rem, ex qua dependet veritas et falsitas intellectus et enunciationis. Cum enim enunciatur aliquid esse vel non esse secundum congruentiam rei, est oratio vera; alioquin est oratio falsa.(19)

Next, Aristotle shows how enunciations are furthermore opposed by reason of their subjects.(20) This involves a new division of enunciations according to the quantity of the subject, i.e., according as something is predicated of many or of one only. Since a subject is either singular or universal, and since a predicate is said of a universal either universally,

particularly, or indefinitely, there are four kinds of enunciations: singular, universal, particular, and indefinite. (21) Then, combining the qualities of affirmation and negation with the quantity of the subject, Aristotle shows that an affirmative universal and a negative universal are opposed as contraries, e.g., "Every man is white" and "No man is white." (22) However, when nothing is predicated universally of a universal subject, there cannot be an opposition of contrariety; therefore indefinite enunciations cannot be opposed as contraries. (23) A particular affirmative cannot properly be said to be opposed to a particular negative, because opposition demands the same subject in both enunciations, but a particular enunciation is opposed as a contradictory to the universal of the opposite quality, e.g., "Some man is white" is the contradictory of "No man is white." (24) Next, the author considers how these opposed affirmations and negations are related to truth and falsity: contraries cannot be simultaneously true, etc. (25)

After distinguishing the different modes of opposition, Aristotle shows that there is only one negation opposed to every affirmation, e.g., "Some man is not white" is the only negation of "Every man is white," because it alone removes the very universality of the universal enunciation. (26) Finally, Aristotle takes up the problem of whether one of the opposites must be determinately true or false in all kinds of enunciations or not. (27) To treat this question it is necessary to observe that enunciations can be divided according to time into present, past, and future and according to their matter into necessary, impossible, and possible or contingent. (28) For enunciations in present or past time, either a universal or its contradictory particular is necessarily true and its opposite is false, in any kind of matter, e.g., "Some man is not white" is necessarily true, if "Every man is white" is false. This is also true for singular enunciations which are opposed as contradictories, e.g., if "This man is white" is true, "This man is not white" is necessarily false. From the truth of a particular affirmation, however, the falsity of

its negative cannot be inferred, e.g., "Some man is white" and "Some man is not white" can both be true. But for enunciations in future time a distinction must be made according to the matter of the enunciation. Future enunciations in necessary and impossible matter are determinately true or false in the same way as enunciations in present and past time. Likewise, in contingent matter, universals are false and particulars are true, as for present and past enunciations. It is for singular enunciations in future time that a problem arises, for, although a future singular enunciation in necessary matter is determinately true or false, it does not seem to be so in contingent matter.(29) The answer to this problem and the reasons for the answer take up the rest of this chapter in Aristotle and the rest of the first book of St. Thomas's commentary.

The remainder of the *Peri Hermeneias* (30) is devoted to the enunciation as it is diversified by the addition of something. First of all, something can be added to a part of the enunciation, i.e., to the subject or to the predicate. Sometimes such an addition does not take away the unity of the enunciation, as when the subject or predicate is rendered infinite by the addition of a negative.(31) Aristotle first takes up the simplest kind of enunciation which consists only of a noun and the verb "is," e.g., "Socrates is." (32) Since only the subject can be made infinite in this kind of enunciation, only two affirmations can be formed from it: "Socrates is" and "Non-Socrates is." There are also the two corresponding negations: "Socrates is not" and "Non-Socrates is not." These enunciations are said to be *de secundo adjacente*, (33) because "is" is the second diction in the enunciation; "is" signifies that "Socrates" really exists. There are also enunciations *de tertio adjacente* (34) in which "is" is not the principal predicate but serves to connect the principal predicate with the subject, e.g., "Socrates is white." In such enunciations, the predicate as well as the subject can be made infinite. If an enunciation is constructed from a finite noun, the verb "is," and a predicate which can be either finite or infinite, four enunciations are possible: "Man is just" with its negation, "Man is not just,"

and "Man is non-just" with its negation, "Man is not non-just." (35) If, on the other hand, the subject is an infinite noun, four enunciations are also possible: "Non-man is just" with its negation, "Non-man is not just" and "Non-man is non-just" with its negation, "Non-man is not non-just." (36) No more than these twelve enunciations are possible. Since the subject of each can be singular, universal, particular, or indefinite, a total of forty-eight enunciations is possible from the point of view taken here. (37) Enunciations whose verbs are adjectival, (38) such as "Socrates runs," are affected by an addition to a part of the enunciation in the same way as simple enunciations, i.e., *de secundo adjacente*. This is true, despite the fact that from the point of view of what is signified such enunciations are the equivalent of enunciations *de tertio adjacente*: "Socrates runs" is equivalent to "Socrates is running."

Sometimes an addition takes away the unity of the enunciation. (39) An enunciation is multiple, if what is signified is multiple, even though the enunciation may appear to be simple. An enunciation can be multiple in four ways: (a) when the subject or predicate is one noun which is imposed on several things, which combine into one, but not insofar as they are one (b) when the several which combine into one are the subject or predicate insofar as they are distinct actualities; (c) when one noun is imposed of several things which do not combine into one; and (d) when the several which do not combine into one are the subject or predicate. (40) After distinguishing the multiple enunciations, Aristotle takes up their consequences. (41) He proposes first the problem of why some predicates are true of a subject both when the predicates are taken separately and when they are joined, while others are true only separately, e.g., from the fact that Socrates is a man and is white it follows that Socrates is a white man but from the fact that he is good and is a musician it does not follow that Socrates is a good musician. (42) The second problem is whether from any enunciation whose predicate includes several notions it is legitimate to infer several enunciations each having one of the notions for its predicate e.g., from "Socrates is a white

man" it follows that he is white and that he is a man, but from "Socrates is a good musician" it does not follow that he is good. (43)

Secondly, an addition can be made, not merely to a part of the enunciation, but to its very composition. Such an addition is a mode, and it distinguishes the modal enunciation from the *de inesse* enunciation. There are four of these modes: possible, contingent, impossible, and necessary.(44) The introductory paragraphs of Cajetan's commentary explain the distinction between the modal and the *de inesse* enunciations, which mode make an enunciation modal, the parts of the modal enunciation, and its definition.(45) The text of Aristotle covers the opposition of modals by reason of affirmation and negation(46) as well as their consequences. Thus, to the affirmation, "That man is white is possible," is opposed the negation, "That man is white is not possible." (47) A modal is negative only by addition of a negative to the mode, regardless of whether or not the dictum is negative. (48) The following is an example of the consequence of equipollent modals: that which is necessary to be is, consequently, no possible not to be, not contingent not to be, and impossible not to be.(49) Cajetan concludes this section with some paragraphs on the quantity peculiar to modals and their opposition by virtue of their quantity.(50)

Lastly, Aristotle treats the opposition of enunciations deriving from an addition made to a simple enunciation.(51) In this section, he asks whether the contrary of an affirmative enunciation is the negation of the same predicate or the affirmation of the contrary predicate, e.g., is the contrary of "Every man is just" "No man is just" or "Every man is unjust" ?

DIVISIONS OF THE ENUNCIATION

Six ways of dividing the enunciation can be gathered from the *Peri Hermeneias*: by reason of unity, quality, quantity, time, matter, and expression or non-expression of the mode of composition.

The *first* division is into the enunciation that is one (*una simpliciter*) and that which is composite (*una conjunctione*). The former is sometimes called categorical, and the latter hypothetical.(52) This is an essential division of the enunciation, because it is a division on the part of the copula.

The *second* is into affirmation and negation, which St. Thomas frequently asserts is the division of the enunciation into its species.

Quae quidem est divisio generis in species, quia sumitur secundum differentiam praedicati ad quod fertur negatio; praedicatum autem est pars formalis enunciationis; et ideo hujusmodi divisio dicitur pertinere ad qualitatem enunciationis, qualitatem, inquam, essentialem, secundum quod differentia significat *quale quid*.(53)

The *third* division is by reason of a difference found in the subject of the enunciation, according as it is said of many or only of one. St. Thomas says this division pertains to the quantity of the enunciation, for quantity follows matter, and the subject is as matter in the enunciation.(54) But when the subject is a universal (i.e., it can be said of many) something can be predicated of it in three ways: universally, if the predicate belongs to the entire multitude in which the universal is found, e.g., "Every man is an animal" ; particularly, if the predicate is said to belong to an indeterminate individual that falls under the universal, e.g., "Some man is white"; or indefinitely, when something is predicated of a universal without any sign of universality or particularity. Thus from the point of view of quantity, the enunciation is divided into singular, universal, particular, and indefinite.(55)

The *fourth* division of the enunciation is according to time, i.e., into past, present, and future. As the third division was on the part of the subject, this is on the part of the verb, because every enunciation must have a verb or a form of a verb and must, therefore, signify present past, or future time.(56) Both the third and fourth divisions are accidental because they are according to a part of the enunciation.

The *fifth* division of the enunciation is according to matter, i.e., according to the relationship of predicate to subject. If the predicate is in the, subject per se, the enunciation is said to be in necessary matter, e.g. "Man is an animal," or "Man is capable of laughter." If it is per se repugnant that the predicate be in the subject, the enunciation is said to be in impossible or remote matter, e.g., "Man is a horse." If the predicate is neither per se repugnant to the subject nor per se contained it, the enunciation is said to be in possible or contingent matter.(57)

The *sixth* and last division of the enunciation is into the *de inesse* and the modal enunciation, the former merely stating that the predicate, is or is not in the subject, the latter stating the mode in which the predicate does or does not belong to the subject, i.e., necessarily, impossibility, possibly or contingently.(58)The extremes of this division are the expression o the non-expression of the mode of composition of predicate with subject."

Notes

- (1) "Principaliter tamen modum scientiae considerantis subjectum et partes subjecti, de quibus per principia propria probat passiones." St. Thomas, In *Peri Hermenias*, p.377a.
- (2) Aristotle, *Peri Herm.*, chap.1; St. Thomas, In *Peri Herm.*, lect.1-3.
- (3) lect.4, n.1.
- (4) *Ibid.*; the noun and the verb are treated in Aristotle, chaps. 2, 3; St. Thomas, lect. 4, 5.
- (5) It is important to note that *nomen* or noun includes both the noun substantive and the noun adjective. This is not only true in logic, but is also in accordance with the usage of the older grammarians. Thus, in "Man is white" both "man" am "white" are nouns.
- (6) Aristotle, chap. 4, 16b27-35; St. Thomas, lect. 6.
- (7) Chap. 4, 17a1-chap. 9.
- (8) Chaps. 10-14; in the commentary of St. Thomas, the first is treated in lessons seven to fifteen of what he calls the first book;

all the rest in the commentaries of St. Thomas and Cajetan is called the second book.

(9) Chap. 4, 17a1-8.

(10) Chaps. 5-6, 17a26.

(11) Chap. 6, 17a27-chap. 9.6

(12) "Enunciatio est oratio, in qua verum vel falsum est." St. Thomas, lect.7, n.2.

(13) *Ibid.*, n.4.

(14) *Ibid.*, lect.8, n.13.

(15) *Ibid.*, n.19.

(16) Chap. 6, 17a27-chap. 8; St. Thomas, lect.9-12.

(17) Chap. 9; St. Thomas, lect.13-15.

(18) St. Thomas, lect.9, n.8.

(19) *Ibid.*, n.2.

(20) Aristotle, chap.7, 17a37-17b22; St. Thomas, lect.10, 11, nn.1-5.

(21) St. Thomas, lect.10, nn.10, 14, 15, 16.

(22) *Ibid.*, n.18.22

(23) *Ibid.*, n.19.

(24) *Ibid.*, lect.11, nn.2, 3.

(25) Aristotle, chap.7, 17b23-37; St. Thomas, lect.11, nn.6-11.

(26) Chap.7, 17b38-chap.8; St. Thomas, lect.12.

(27) Chap.9; St. Thomas, lect.13-15.

(28) St. Thomas, lect.13, n.3.

(29) *Ibid.*, nn.4, 5, 6.

(30) Aristotle, chaps.10-14; the second book of the commentaries.

(31) Chap.10; St. Thomas and Cajetan, II, lect.1-4.

(32) St. Thomas, lead.

(33) *Ibid.*, lect.2, n.2.

(34) *Ibid.*

(35) Cajetan, lect.3, nn.1-8.

(36) *Ibid.*, n.9.

(37) *Ibid.*, n.10.

(38) *Ibid.*, nn.12-16.

(39) Aristotle, chap.11; Cajetan, lect.5-7.

(40) Cajetan, lect.5, n.4.

- (41) 20b32-21a33; Cajetan, lect.6, 7.
- (42) Cajetan, lect.6.
- (43) *Ibid.*, lect.7.
- (44) Aristotle, chaps.12, 13; Cajetan, lect.8-12.
- (45) lect.8, nn.1-6.
- (46) Chap.12; Cajetan, lect.8 n.7, lect.9.
- (47) Chap.13; Cajetan, lect.10-12, n.9.
- (48) Cajetan lect.9, n.5.
- (49) *Ibid.*, lect.12, n.7.
- (50) *Ibid.*, nn.10-13.
- (51) Chap.14; Cajetan, lect.13, 14.
- (52) John of Saint Thomas, *Cursus philosophicus* (ed. Reiser, 3 vols.; Rome: Marietti, 1930), T.I, p.25.
- (53) *In I Peri Herm.*, lect.10, n.10.
- (54) *Ibid.*
- (55) *Ibid.*, n.13-16.
- (56) *Ibid.*, lect.13,
- (57) *Ibid.*
- (58) Cajetan, *In II Peri Herm.*, lect.8, n.2.

From: Henri DuLac, "The 'Peri Hermenias'. Its Place in Logic and Its Order", *Laval Théologique et Philosophique* 5, 1949, pp. 161-169.

ONOMA AND RHEMA IN THE DE INTERPRETATIONE

"3.2. The expression of thought in speech

3.2.1. As we saw in 2.4.3, one of the words that Plato uses for giving verbal expression to what one holds true in one's mind is the verb *apophainesthai*. This verb, with *gnomon* or *doxan* as the expressed or unexpressed object, was familiar to every Greek and had the quite ordinary meaning of making known one's opinion.

It is this word that plays a central role in Aristotle's treatment of the expression of thought in speech, at least in *De interpretatione*. Together with the noun *apophansis*, it becomes a more or less technical term for the speech act of making known to others what one holds true in one's mind, of asserting that something is the case. This speech act is either an affirmation or a denial: *a kataphasis is an apophansis* in which it is asserted that one thing belongs to another, *an apophasis is an apophansis* in which one thing is separated from another (*De int.* 17 a 25). Both *kataphasis* and *apophasis* are species of the genus *phasis*: they are forms of saying (*phanai*) that something is or is not the case. All these nouns suffer from a process-product ambiguity.

Sometimes they indicate the activity of making known one's opinion by means of affirming or denying that something is the case. But they may also designate the utterance which is produced in the course of that activity. So *an apophansis* is defined as a significant spoken sound about whether something does or does not hold (*De int.* 17 a 23). The two species of the genus *phasis*, *kataphasis* and *apophasis*, are defined as *logos kataphatikos* and *logos apophatikos*, as an affirmative or negative utterance (*Cat.* 12 b 8). Each is a *logos apophantikos*, an utterance used in the activity of revealing one's thought (*De int.* 17 a 8).

It is this utterance, as used for a special purpose, that is the typical unit of the *legein-level*, the Platonic *logos*. In contrast with other sorts of expressions which do not yet admit of truth or falsity, *a kataphasis* or *apophasis* and *a logos apophantikos* are the kind of units that are rightly called true or false (*Cat.* 2 a 7; *De int.* 17 a 3, 20 a 35).

3.2.2. The other sorts of expressions, which do not yet admit of truth or falsity and are for that reason incomplete and defective, are the units of Plato's *onomazein-level*, the *onomata* and *rhemata*. By uttering *an onoma* or *a rhema* one cannot reveal anything by one's utterance in such a way as to be making a statement (*De int.* 17 a 17). This 'not yet'-character of *onomata* and *rhemata* is a point to which Aristotle remarkably often returns.

In *Cat. 1* a 16 he distinguishes between expressions whose utterance involves a combination (*symploke*) and expressions that are uttered without combination. As examples are given: 'Man runs', 'Man wins'; 'Man', 'Ox', 'Runs', 'Wins'. The expressions formed without any combination designate something belonging to one of the categories, and none of them is either true or false (*Cat. 2* a 8, 13 b 10).

In *De int.* 16 a 9 a parallel is drawn between the mental sphere and the verbal sphere. In the mental sphere two kinds of thoughts are found, those unaccompanied by truth or by falsity and those that necessarily have one or the other. In the verbal sphere *onomata* and *rhemata* which are pronounced without any addition -- for instance, 'Man', 'White' -- are like thoughts that are formed without any combination; they are not yet true or false. Even a word such as 'Goat-stag' does not yet signify anything true or false. It does so only when 'is' or 'is not' is added.

That the *symploke* must be of a special kind is shown by *De int.* 16 b 1. When 'is' or 'is not' is added to a genitive or dative case (Philo's' or 'to-Philo), the combination does not yet yield a truth or falsehood. The oblique cases cannot play the role of naming the subject in a statement-making utterance.

Further examples of the 'not yet'-terminology are *De int.* 16 b 19 and 17 a 9. Verbs uttered by themselves signify something but they do not yet signify whether something is the case or not (Compare *De int.* 16 b 28: a word like 'Man' signifies something but not that something is the case or is not the case). The definition (*logos*) of man, without 'is' or 'was' or 'will be' or something of that kind, is not yet a statement-making utterance. These passages are sufficient proof that Aristotle, probably inspired by Plato, is fully aware of the incomplete and defective character of *onomata* and *rhemata*. Measured against the relative independence of utterances by means of which expression is given to a belief that something is the case, and which therefore admit of truth or falsity, the meaning of *onomata* and *rhemata* is imperfect. A composite unit of the *legein-level*, which has the

complete sense of a true or a false thought, is formed only when the open place accompanying each separate *onoma* or *rhema* is occupied by a proper complement.

Aristotle defines *onomata* and *rhemata* as spoken sounds significant by convention none of whose parts is significant in separation (*De int.* 16 a 20, 16 b 6; *Poetics* 1457 a 10, 14). The difference between the two is that an *onoma* signifies without any reference to time, whereas a *rhema* additionally signifies time. Moreover, the *rhema* is a sign of something said of something else, the subject. The verb *legein* which Aristotle uses in this connection indicates both the predicative and the assertive function of the *rhema*; if someone says 'Callias runs', the component 'runs' is a sign that the speaker connects the activity of running with Callias, but also that he holds that this predicate actually belongs to Callias, at the time indicated. As for cases like 'Callias is running' or 'Man is just', where the word 'is' occurs as a third element, there the verb 'is' by itself is nothing, but it additionally signifies some combination (*synthesis*) which cannot be thought without the components (*De int.* 16 b 25). This *synthesis*, of which the spoken sounds 'is' or 'is not' are the appropriate sign, is the mental activity of bringing together or separating two concepts which, at the same time, is an act of assenting to the combination, or of dissenting from it. Aristotle does not seem to distinguish between merely conceiving of a certain combination, in a neutral *state* of mind, and actually accepting or rejecting it; for him a *synthesis* is always a mental assertion. That the copula 'is' has this assertive force is confirmed by *Met.* 1017 a 31; although Aristotle speaks there of an emphatic use of 'is' and 'is not', in the sense of 'Socrates is educated, he really is so', there is reason to believe that this emphatic use is only a strengthening of what is normally present in all cases. For in *De int.* 21 b 31 it is said that in utterances of the form 'Man is white', 'Man is not white' the parts 'is' and 'is not' determine the true; this presumably means that they lend assertive force to these utterances (The passage is, however, far from clear).

De int. 16 b 20 is also interesting because it is in these lines that we find the first trace of a distinction that later came to be known as the distinction between categorematic and syncategorematic words. Although verbs by themselves do not yet signify whether something is the case or not and therefore do not possess the degree of completeness and independence which is characteristic of the units of the *legein-level*, it is still true that most of them have a meaning of their own in the sense that both the speaker and the hearer, in pronouncing or hearing the word, will have a definite thought in their minds, a thought that has some kind of self-sufficiency. The copula 'is', on the contrary, is not accompanied by any such distinct and relatively self-sufficient thought; it only adds a certain nuance to the meaning of the words to which it is joined. For this additional way of signifying Aristotle uses the word *prosemainein*. This verb also occurs in *De int* 20 a 13, in connection with 'every' and 'no'; these words additionally signify nothing other than that the affirmation or negation is about the name taken universally. Thus we have here the beginning of a trichotomy: expressions signifying that something is the case; verbs and nouns, which do not yet signify that something is the case but have some meaning of their own; and words like 'is', 'every', 'no', which do not signify (*semainein*) in either of those ways but only contribute to the meaning of other words." pp. 26-29

(...)

"3.6. Summary

This chapter clearly shows that the treatment of problems concerning acts and attitudes of holding something true and their objects with which Plato had made a modest but hopeful beginning in *Sophist* 261-264 was considerably extended and refined by Aristotle's efforts. By way of conclusion I shall give a synopsis of what we have found out about his conception of the bearers of truth and falsity.

In the first place that is true or false which is thought or believed to be the case. This bearer of truth or falsity may be designated by such expressions as *doxa*, *hypolepsis*, *doxazomenon* (*doxaston*),

hypolambanomenon (*hypo-lepton*), or by a *hoti*-clause or an accusative and infinitive phrase. In so far as a thought or belief is expressed in words it is perhaps also referred to as the *pragma* that underlies an affirmation or negation; but Aristotle does not seem to make a clear terminological distinction between the thing believed or asserted and that which is actually the case in reality. Although it is not denied that *logos* sometimes stands for that which is asserted, in the contexts that are most relevant to our subject the word usually has the sense of utterance. Utterances that are used to make statements are the second category of bearers of truth and falsity, designated by such expressions as *logos apophantikos*, *logos kataphatikos*, *logos apophatikos*, *apophansis*, *kataphasis*, *apophasis*, and *protasis*. It is probable that Aristotle in speaking of utterances commonly has in mind what would nowadays be called utterance-tokens. There are, however, some passages in which the bearer of truth or falsity must be taken to be an utterance-type of a certain kind.(*)
As some of the terms for that which is thought or believed and for the utterances used to express it are also employed for the acts or attitudes of judging and believing and for the acts of uttering words with a special intention, the qualifications 'true' and 'false' can easily come to be applied to those acts and attitudes as well. Such cases are, however, exceptional and at any rate derivative."
pp. 43-44

Notes

(*) For the problem of the so-called future contingencies see Dorothea Frede, *Aristoteles and die 'Seeschlacht. Das Problem der Contingentia Futura in De interpretatione* 9, Gottingen, 1970.

From: Gabriel Nuchelmans, *Theories of Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*. Amsterdam: North-Holland 1973.

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Revised reprint in: J. M. E. Moravcsik (ed.), *Aristotle: A Collection of Critical Essays*, London: Macmillan, 1968, pp. 15-33 and in: *The Collected Philosophical Papers of G.E.M. Anscombe*, Vol. 1: *From Parmenides to Wittgenstein*, Oxford: Blackwell, 1981, pp. 44-55.
"Aristotle's point (as we should put it) is that "Either p or not p" is always necessary; this necessity we are familiar with. But - and this is from our point of view the right way to put it, for this is a novelty to us - that when p describes a present or past situation, then either p is necessarily true, or $\sim p$ is necessarily true; and here "necessarily true" has a sense which is unfamiliar to us. In this sense I say it is necessarily true that there was not - or necessarily false that there was - a big civil war raging in England from 1850 to 1870; necessarily true that there is a University in Oxford;

and so on. But "necessarily true" is not simply the same as "true"; for while it may be true that there will be rain tomorrow, it is not necessarily true. As everyone would say: there may be or may not. We also say this about things which we don't know about the past and the present. The question presents itself to us then in this form: does "may" express mere ignorance on our part in both cases?

Suppose I say to someone: "In ten years' time you will have a son; and when he is ten years old he will be killed by a tyrant." Clearly this is something that may be true and may not. But equally clearly there is no way of finding out. (Unless indeed you say that waiting and seeing is finding out; but it is not finding out that it will happen, only that it does happen).

Now if I really said this to someone, she would either be awestruck or think me dotty; and she would be quite right. For such a prediction is a prophecy.

Now suppose that what I say comes true. The whole set of circumstances - the prophecy together with its fulfilment - is a miracle; and one's theoretical attitude (if one has one at all) to the supposition of such an occurrence ought to be exactly the same as one's theoretical attitude to the supposition that one knew of someone's rising from the dead and so on." (p. 53 of the reprint)

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Selection, translation and commentary by Hans Arens.

Contents: Preface 1; 1. The extraordinary fate of *Peri hermeneias* 6; 2. Aristotle's text (*Peri hermeneias* 16a1 - 17a7) 16; 3. Commentary to Aristotle 24; 4. Ammonius Hermeiu: Commentary to Aristotle's *Peri hermeneias* 58; 5. Commentary to Ammonius 124; 6. Anicius Manlius Severinus Boethius: Commentaries to Aristotle's *Peri hermeneias*. *Second edition*. 159; 7. Commentary to Boethius 205; 8. Peter Abaelard: *Glosses on Peri*

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"It is a very small particle of the philosophic and scientific cosmos that bears Aristotle's name, in fact, it is little more than one page of the whole corpus that I am going to consider, that one page out of 1500 where, in the frame of his logic, he formulates his general views on language. Yet, here, in the first four chapters of *Peri hermeneias*, he is not primarily interested in language, which is a natural - and therefore self-evident - instrument of expression and communication: he considers it only as the indispensable means of forming a proposition, which is part of a syllogism. The linguistic theory sketched here without any pretence to originality would not claim our serious attention and careful examination if those 48 Greek words in ch. 1 had not proved of such incredibly far-reaching influence in the development of linguistic thought. This influence was rendered possible by the steady tradition of the text, and this book is intended as its documentation. As far as I know there exist no modern translations of all the old commentaries I present, and so I hope to do some pioneer work in the field. As the list in ch. 1 shows, I offer only a selection: the works of eminent authors available in modern editions.

Up to Martinus de Dacia the material consists of explanations of the Philosopher's words, and it is obvious that the same words must often lead to the same explanations, the more so as the explainers did not want to criticize him, but to prove him right. This attitude was

bound to lead to many parallelisms between the different texts. I could not omit all those repetitions if I did not want to present mere fragments to the reader. Fortunately the writers are different personalities with different styles and ways of handling the matter so that the reader does not only get acquainted with the medieval ways of thinking and argumentation, but also with the different forms of that sort of literature: the commentary, the exposition, the glosses, the paraphrase, and the questions. At the same time he can follow the development of the scholastic method. And with all the burden of formalism, traditionalism, and dependence on authority which the authors carry along, they have ideas of their own - more or less, of course - and all these chapters add up to a book on linguistic logic or the logic of language, which makes an interesting section in the history of linguistics, being a museum of past views on language. And my serious advice is to wander through it and see what is there, so as to avoid presenting thoughts as new and progressive which are in fact very old - it is always a poor sight and a little ridiculous too.

I had to content myself with presenting the Greek and Latin material in English and adding my comment where I thought it necessary or at least desirable. I am not giving a philosophical exegesis, but an interpretation from the linguistic point of view. The *grammatica speculativa* and the *grammaire générale* or universal grammar could not be included, though I end with the latter (James Harris). From Aristotle on, the translation is always more or less an interpretation, sometimes not really possible, because there is no exact equivalent, for instance, of *onoma* and *rhema*. And the interpretation is a hazardous enterprise because of the distance of time (1500 years between us and our first commentator) and the lack of an elaborate terminology, which manifests itself in the polysemy of the essential terms, especially in the Latin commentaries, for instance: *forma*, *vox*, *intellectus*, *ratio*. And, also from Aristotle on,

one often cannot be sure that the text is correct or whether by an error of the author, of the scribe, of the editor or, lastly, of the printer, there is something wrong with it - sometimes the only thing one knows (or thinks one knows). For all these reasons, and because I am neither an expert medievalist nor a logician, I can, despite several revisions of my text, not guarantee that my translation is always correct." (From the Preface)

4. Aubenque, Pierre. 1991. "Herméneutique et ontologie. Remarques sur le *Peri Hermeneias* d'Aristote." In *Penser avec Aristote*, edited by Sinaceur, Mohammed Allal, 93-105. Toulouse: Éditions Érès.
Repris dans P. Aubenque, *Problèmes aristotéliens. Philosophie théorique*, Paris: Vrin 2009, pp. 101-116.
5. ———. 1992. "Das Verhältnis von Hermeneutik und Ontologie am Beispiel des 'Peri hermeneias' von Aristoteles." *Perspektiven der Philosophie* no. 18:27-46.
6. Ax, Wolfram. 1979. "Zum isolierten ῥῆμα in 'Aristoteles' *De interpretatione* 16b19-25." *Archiv für Geschichte der Philosophie* no. 61:271-279.
7. ———. 2007. "Psophos, phoné und dialektos als Grundbegriffe aristotelischer Sprachreflexion." *Glotta* no. 56:245-271.
8. Bäck, Allan. 1992. "Sailing through the Sea Battle." *Ancient Philosophy* no. 12:133-151.
9. Baffioni, Carmela, and Nasti de Vincentis, Mauro. 1981. *Il capitolo 9 del De interpretatione di Aristotele nel commentario di Al-Farabi*. Napoli: Istituto Universitario Orientale.
Con un'appendice di Emanuela Galanti.
10. Bärthlein, Karl. 1984. "Nochmals über das isolierte Aussagewort (CA, *De Interpretatione*, Kap. 3). Mit einem Anhang zur Diskussion über die Echtheit dieser Schrift." *Rheinisches Museum für Philologie* no. 127:227-258.
"In den Schriften, die Aristoteles zugeschrieben und im Corpus Aristotelicum (CA) zusammengefaßt werden, gibt es so manche Stelle, die wegen der Knappheit ihrer

Formulierung oder wegen Zweifeln an der Überlieferung des Textes schwer zu interpretieren ist und daher immer wieder zu neuen Deutungsversuchen anregt. Zu diesen Stellen gehört zweifellos die zweite Hälfte des Kapitels 3 der dem "Organon" zugerechneten Schrift "De Interpretatione". Dazu hat Hans Wagner 1971 eine Interpretation veröffentlicht (1). Mit dieser Interpretation Wagners möchte ich mich hier auseinandersetzen und mit zwei weiteren Interpretationsvorschlägen: dem von Wolfram Ax (2), der einen Gegenvorschlag zu dem wichtigsten Punkt der Interpretation Wagners darstellt, und zu dem Vorschlag von Hermann Weidemann (3), der auf einer Auseinandersetzung mit den Deutungen von Wagner und Ax beruht.

Die Auseinandersetzung mit diesen drei Auslegungen wird mich, vereinfacht gesagt, zur traditionellen Auslegung zurückführen, von der sich Wagner distanziert, auf die Ax wieder zurückkommt, und von der Weidemann wieder weggeht; mein Zurückkommen auf die traditionelle Auslegung wird allerdings mit einigen Präzisierungen dieser Auslegung verbunden sein." (p. 227)

1) Hans Wagner: Aristoteles, *De Interpretatione*, 3.16b 19-25, in: *Philomathes. Studies and Essays in the Humanities in Memory of Philip Merlan*, ed. by R. B. Palmer and R. Harnerton-Kelly, The Hague 1971, p. 95-115. Dieser Aufsatz liegt inzwischen in einem Zweitdruck vor in: Hans Wagner: *Kritische Philosophie. Systematische und hist.*

Abhandlungen, Würzburg 1980, S. 201-212. Ich gebe hier jedesmal zuerst die Seiten nach dem Erstdruck an, dann die nach dem Zweitdruck.

2) Zum isolierten ῥῆμα in Aristoteles' *de interpretatione* 16b 19-25, in: *Arch. f. Gesch. d. Philos.* 61 (1979), S. 271-279.

3) Aristoteles über das isolierte Aussagewort: *De int.* 3, 16b 19-25, in: *Arch. f. Gesch. d. Philos.* 64 (1982), S. 239-256.

11. Becker, Albrecht. 1934. "Zwei Beispiele für Interpolationen im Aristoteles-Text: *Hermeneutik* 13. 22 b 38 - 23 a 26 und

- Metaph.* Θ 4. 1047 b 14-30." *Hermes* no. 69:444-450.
12. ———. 1936. "Bestreitet Aristoteles die Gültigkeit des „Tertium non datur“ für Zukunftsaussagen? (Zum 9. Kapitel der Aristotelischen *Hermeneutik*)." In *Actes du Congrès International de Philosophie Scientifique (Paris 1935)*, VI: *Philosophie des Mathematiques*, 69-74. Paris: Hermann.
 13. Belardi, Walter. 1975. *Il linguaggio nella filosofia di Aristotele*. Roma: Kappa Libreria Editrice.
 14. ———. 1981. "Riconsiderando la seconda frase del *De interpretatione*." *Studi e Saggi Linguistici* no. 21:79-83.
 15. Bluck, Richard. 1963. "On the interpretation of Aristotle, *De interpretatione* 12-13." *Classical Quarterly* no. 13:214-222. "Chapters 12 and 13 of the *De Interpretatione* present some puzzles, which it is my purpose to try to solve. The latest commentator, Professor Jaakko Hintikka, attempts in *Acta Philosophica Fennica* XIV (1962), 5-22, to abolish the difficulties by taking certain verbs in an unusual way. He suggests that in these chapters ἀκολουθεῖν, which is usually taken to denote logical consequence, sometimes expresses simply compatibility (2Ib35-22a1, 22b11-I4, 22b17-22), sometimes equivalence (22a14 and 33, 22b22 ff., 23a18 ff.), and that at 22a38 ff., 22b30, and 23a17 ἔπεσθαι, which again is usually taken to denote consequence, in fact expresses compatibility. I propose to counter Hintikka's arguments and to maintain that both verbs express consequence; but as my main purpose is to give my own explanation of the general trend of Aristotle's remarks, I shall take the passages discussed by Hintikka in the order in which they occur in Aristotle's text.
- The root of the difficulties that arise is what appears, at least at first sight, to be a confusion about the meaning of 'possible' (δυνατόν), which may mean 'contingent' or may include what is necessary. For convenience I shall keep in my translations to the rendering 'possible', and where necessary discuss the meaning of the word in the commentary that follows. Where either of the above-

mentioned verbs occurs, I shall translate as though it expresses consequence, since I wish to show that good sense can thus be obtained." (p. 214)

16. Bobzien, Susanne. 2007. "Aristotle's *De Interpretatione* 8 is about Ambiguity." In *Maieusis. Essays in Ancient Philosophy in Honour of Myles Burnyeat*, edited by Scott, Dominic, 301-321. New York: Oxford University Press.
"My goal in this paper is to show that contrary to the prevalent view, in his *De Interpretatione* 8, Aristotle is concerned with homonymy; more precisely, with homonymy of linguistic expressions as it may occur in dialectical argument. The paper has two parts. In the first I argue that in *Soph. el.* 175 b 39 - 176 a 5, Aristotle indubitably deals with homonymy in dialectical argument; that *De Interpretatione* 8 is a parallel to *Soph. el.* 175 b 39 - 176 a 5; that *De Interpretatione* 8 is concerned with dialectical argument; that, hence, *De Interpretatione* 8, too, deals with homonymy in dialectical argument. In the second part I discuss objections that have been put forward against the view that *De Interpretatione* 8 is about homonymy and shows that they do not succeed." (p. 301)
17. Bolonyai, Gábor. 2005. "Aristotle on Sentence Types and Forms of Speech." *Acta Antiqua Academiae Scientiarum Hungaricae* no. 45:143-152.
18. Bosley, Richard. 1978. "In Support of an Interpretation of *On Int.* 9." *Ajatus* no. 37:29-40.
19. Brandon, E. P. . 1978. "Hintikka on ἀκολουθεῖν." *Phronesis. A Journal for Ancient Philosophy* no. 23:173-178.
"Hintikka has argued (1) that the term ἀκολουθεῖν, usually translated in logical contexts as 'follow from', is in fact less definite, sometimes possessing a wider sense of 'going together with', 'accompanying', 'being compatible with', 'conforming with', sometimes a stronger sense of 'logically equivalent with'. These claims were originally used to clear up some difficulties in Aristotle's *De Interpretatione* 12-13, but they have subsequently been employed in an attempt to

obtain a consistent interpretation of Pappus' remarks about the geometrical method of analysis and synthesis.(2)

It is not my intention to query the general claim that ἀκολουθεῖν and its cognates have a less definite meaning in ordinary Greek than 'to follow logically from'. What I do wish to show, however, is that Hintikka does not give sufficient grounds for disputing the traditional understanding of this term in the discussion of modal notions in the *De Interpretatione*. (3)" (p. 173)

(1) In 'On the Interpretation of *De Interpretatione* 12-13' originally published in *Acta Philosophica Fennica* 1962, reprinted with revisions as chapter III of his *Time and Necessity* (Oxford, 1973). All page references to this later version.

(2) J. Hintikka and U. Remes, *The Method of Analysis* (Dordrecht, 1974)passim, esp. ch. II.

(3) Thus my argument has no immediate consequences for the understanding of Pappus. It may be noted, however, that, as Hintikka and Remes show, the method of analysis Pappus seeks to characterise is in fact largely deductive, so that it would not be wildly irresponsible to suggest that the part of his characterisation that involves an 'upward' movement through ἀκολουθα somewhat misleading. Cf. Mueller's review of Hintikka and Remes, *Journal of Philosophy* 73 (1976) 158-62.

20. Brekle, Herbert E. 1970. "A Note on Aristotle's *De Interpretatione* 20b-21a." *Folia Linguistica* no. 4:167-173. "This contribution is intended to be a discussion of a few passages of Aristotle's *de interpretatione* (20b-21a) where the Philosopher deals with the notion of 'simplicity of a proposition' and with certain relations holding between several types of predicates contained in a proposition. It is the aim of these remarks to clarify — as far as possible — Aristotle's view of the problems just mentioned and, secondly, to venture an explanation of one of the questions raised in terms of modern linguistics." (p. 167)

21. Broadie, Sarah Waterlow. 1982. *Passage and Possibility. A Study of Aristotle's Modal Concepts*. Oxford: Clarendon Press.
22. ———. 1987. "Necessity and Deliberation: An Argument from *De Interpretatione* 9." *Canadian Journal of Philosophy* no. 17:289-306.
23. Brunschwig, Jacques. 1969. "La proposition particulière et les preuves de non-concluanche chez Aristote." *Cahiers pour l'Analyse* no. 10:3-26.
Repris dans Albert Menne, Niels Offenberger (Hrsg.), *Über den Folgerungsbegriff in der aristotelischen Logik*, Hildesheim: Georg Olms, 1982, pp. 182-205.
"Je me propose ici d' étudier une incidence particulière avec quelque détail: le problème que posent le sens et l'usage de la proposition particulière, notamment en rapport avec le rôle qu'elle joue dans les procédures par lesquelles est démontrée la non-concluanche des couples de prémisses autres que ceux des modes syllogistiques valides. J'espère en effet montrer que les textes relatifs à ces questions manifestent une modification significative de l'attitude d'Aristote, et qu'ils permettent de saisir sur le vif le travail du logicien, d'abord victime des équivoques du langage naturel, prenant ensuite de ces équivoques une conscience progressive, sous la poussée interne des problèmes eux-mêmes, et parvenant enfin à les maîtriser. Au terme de cette évolution, la proposition particulière abandonne celles de ses connotations usuelles qui perturbent son maniement logique, et n'est plus définie que par sa place dans un système d'oppositions, avec toutes les conséquences que cela comporte."
24. ———. 2008. "Le chapitre 1 du *De Interpretatione*. Aristote, Ammonius et nous." *Laval Théologique et Philosophique* no. 64:35-87.
"La treizième réunion du *Symposium Aristotelicum*, en 1993, a eu une très étrange et très triste destinée. Certes, elle s'est tenue dans le cadre enchanteur de la Chartreuse de

Pontignano, près de Sienne; elle a donné lieu, comme ses devancières, à des communications et à des discussions d'un vif intérêt. Mais l'édition de ses Actes, pour une fois, s'est heurtée à d'insurmontables obstacles. La charge en avait été initialement confiée à Mario Mignucci et à Michael Frede, deux des plus fidèles et stimulants participants du Symposium. Ils ont été tragiquement enlevés à notre admiration et à notre affection, le premier en 2004, sous les coups d'une longue et impitoyable maladie, le second en 2007, en conséquence d'un accident imprévisible et brutal. Le retard causé à la publication du XIII^e Symposium par cette double et douloureuse disparition n'a pu être comblé jusqu'à présent; les membres du comité organisateur m'ont assuré qu'à leur avis, il risquait de ne l'être jamais.

Par une coïncidence émouvante (en tout cas pour moi), trois semaines seulement avant la mort de Michael Frede, mon collègue et ami Thomas De Koninck me demanda si j'accepterais de publier dans le *Laval théologique et philosophique* l'étude que j'avais présentée, plus de dix ans auparavant, au XIII^e Symposium. Je passe sur les divers scrupules qui me firent hésiter quelque temps. L'insistance du Professeur De Koninck et celle de ses collaborateurs, Paul Asselin et Martin Achard, en eurent finalement raison, ce dont je leur suis très profondément reconnaissant.

Quant à ce texte, le lecteur voudra bien se souvenir de la longue histoire dont il est l'ultime fruit. Il serait bien difficile de le résumer: il est, il tente d'être cela même pour quoi il se donne, à savoir pour une lecture détaillée du commentaire par Ammonius du célèbre premier chapitre du *De Interpretatione*, lecture focalisée non pas tellement sur la lumière que le commentaire ancien peut (ou peut ne pas) jeter sur la lettre et sur l'interprétation du texte aristotélicien que sur ce que ce commentaire peut nous apprendre sur les méthodes, les choix, les comportements intellectuels de son auteur lui-même, et sur ses propres

motivations philosophiques et pédagogiques face à un texte comme celui qu'il entreprend de commenter."

25. Burrell, David. 1964. "Aristotle and 'Future Contingencies'." *Philosophical Studies* no. 13:37-52.

26. Butler, Edward J. 1955. "Aristotle's Sea Fight and Three-Valued Logic." *Philosophical Review* no. 64:264-274.

"Certainly the most formidable threat to the law of excluded middle in recent times came with the development of many-valued logics, and notably with Lukasiewicz's three-valued system." (p. 264)

(...)

It becomes diagrammatically apparent that the introduction of " $\frac{1}{2}$ " has to some extent modified the significance of both "1" and "0".

The Harvard logician, Professor Donald Williams, supports this conclusion concerning the truth-values in Lukasiewicz's system. "Lukasiewicz," he writes, "seems to have believed at one time that we should abandon the ordinary meanings of 'true,' 'false' and 'not' in favour of something which does fit his three-valued logic, but he did this because he thought he had independent arguments, essentially Aristotle's, against the admission of truth about the future." (4)

Nevertheless, when Aristotle discussed the application of the principle of excluded middle to contingent propositions about the future, I do not think he was suggesting that the usual meanings of "true," "false," and "not" should be modified in any way (nor, indeed, that the law of excluded middle, when formulated in a certain way, is subject to any exceptions at all). Aristotle's problem is that if "it is an irrefragable law that of every pair of contradictory propositions . . . one must be true and the other false," then "all that is or takes place is

the outcome of necessity" (18b 26). (5) But determinism he could not accept, because there are real alternatives concerning the future, events which have a "potentiality in

either direction" (19a 10). If this were not so, "there would be no need to deliberate or to take trouble, on the supposition that if we were to adopt a certain course, a certain result would follow, while, if we did not, the result would not follow" (18b 32). Instead of abandoning the law, however, he attempted so to formulate it that its application to the future is consonant with his view that some future events are not predetermined. Accordingly he concluded that "everything must either be or not be, whether in the present or in the future, but it is not always possible to distinguish and state determinately which of these alternatives must necessarily come about" (19a 27)." (p. 266)

(4) D. C. Williams, "The Sea Fight Tomorrow," *Structure, Method and Meaning*, ed. by P. Henle et al. (New York, 1951), p. 285.

(5) *De Interpretatione*, ch. IX. All quotations are from the Oxford translation, ed. by Sir David Ross.

27. Butler, Travis. 1997. "The Homonymy of Signification in Aristotle." In *Aristotle and After*, edited by Sorabji, Richard, 117-126. London: Institute of Classical Studies, University of London.
28. Cahn, Steven M. 1967. *Fate, Logic and Time*. New Haven: Yale University Press.
29. Carson, Scott. 2000. "Aristotle on Existential Import and Non Referring Subjects." *Synthese* no. 124:343-360.
Abstract: "Much contemporary philosophy of language has shown considerable interest in the relation between our linguistic practice and our metaphysical commitments, and this interest has begun to influence work in the history of philosophy as well.(1) In his *Categories* and *De interpretatione*, Aristotle presents an analysis of language that can be read as intended to illustrate an isomorphism between the ontology of the real world and how we talk about that world. Our understanding of language is at least in part dependent upon our understanding of the

relationships that exist among the enduring πράγματα that we come across in our daily experience. Part of the foundations underlying Aristotle's doctrine of categories seems to have been a concern, going back to the Academy, about the problem of false propositions: language is supposed to be a tool for communicating the way things are, and writers in antiquity were often puzzled by the problem of how we are to understand propositions that claim that reality is other than it is.(2) Aristotle's analysis of propositions raises a particular problem in this regard: if the subject of a proposition does not refer to anything, how can the proposition be useful for talking about a state of the world? The problem falls into two separate but related parts: propositions whose subjects are singular terms and hence make claims about some particular thing, and propositions whose subjects are general terms and hence make claims about classes. In this paper I will explain Aristotle's treatment of each kind, focusing in particular on what has widely been perceived as a problem in his treatment of singular terms. My discussion of his treatment of general terms will be more brief, but will show that his treatment of them is consistent with his treatment of singular terms."

(1) An interesting treatment of this topic that illustrates how such concerns intersect with issues in the history of philosophy can be found in Diamond (1996), Introduction II (pp. 13–38). Whittaker (1996) also touches on these themes. (2) On the treatment by ancient philosophers of the problem of falsehood see Denyer (1991).

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Denyer, N.: 1991, *Language, Thought and Falsehood in Ancient Greek Philosophy*, Routledge, London.
Diamond, C.: 1996, *The Realistic Spirit: Wittgenstein, Philosophy, and the Mind*, MIT Press, Cambridge, MA.
Whittaker, C.: 1996, *Aristotle's De Interpretatione: Contradiction and Dialectic*, Clarendon Press, Oxford.

30. ———. 2003. "Aristotle on Meaning and Reference." *History of Philosophy Quarterly* no. 20:319-337.
31. Cauquelin, Anne. 1990. *Aristote: le langage*. Paris: Presses Universitaires de France.
32. Celluprica, Vincenzo. 1977. *Il capitolo 9 del De interpretatione di Aristotele. Rassegna di studi 1930-1973*. Bologna: Il Mulino.

Indice: Presentazione 7; PARTE PRIMA Gli orientamenti della critica moderna 11; I. Il *De interpretatione* 9 nei recenti studi sulla logica di Aristotele 11; II. Il contenuto del *De interpretatione* 9 24; III. Caratteri della storiografia novecentesca sul *De interpretatione* 9 29; IV.

Interpretazione 'tradizionale' e interpretazione 'non-standard' 32; V. Genesi polemica del *De interpretatione* 9 37; VI. L'interpretazione 'tradizionale' 43; 1. Lukasiewicz e la logica a tre-valori 44; 2. Le interpretazioni 'filologiche' 48; 3. 'Lettura analitica' del *De interpretatione* 9 52; 4. Logica temporale e logica atemporale di fronte al *De interpretatione* 9 54; 5. Determinismo e fatalismo 62; VII. L'interpretazione 'non-standard' 66; VIII.

Un'interpretazione 'anomala' 71; PARTE SECONDA Schede bibliografiche 79; Indice dei nomi 185-188.

"Il presente volume fornisce un panorama pressoché completo del materiale, relativo al *De interpr.* 9 di Aristotele, pubblicato tra il 1930 e il 1973.

Sono stati presi in esame gli studi specifici sull'argomento, quelli sulla logica aristotelica, le storie generali di storia della logica, gli studi sullo stoicismo e infine tutta una serie di lavori in cui il riferimento ad Aristotele è occasionato dalla trattazione dei temi del determinismo e del fatalismo o di alcuni problemi di logica e di epistemologia.

Alle indicazioni bibliografiche tratte da l'*Année Philologique* si aggiungono pertanto quelle ricavate, nel corso del lavoro, da varie riviste e quelle desunte dagli studi presi in esame. Si è cercato di semplificare il più possibile il simbolismo, in modo che il volume fosse immediatamente utilizzabile

anche da coloro che non fossero esperti di logica formale." (Presentazione , p. 7).

33. ———. 1987. "Logica e semantica nella teoria aristotelica della predicazione." *Phronesis. A Journal for Ancient Philosophy* no. 32:166-187.
34. ———. 2005. "Il determinismo logico nel *De interpretatione* IX di Aristotele." In *La catena delle cause. Determinismo e antideterminismo nel pensiero antico e contemporaneo*, edited by Natali, Carlo and Maso, Stefano, 59-74.

Amsterdam: Adolf M. Hakkert.

"Nel capitolo 9 del *De interpretatione* Aristotele discute un'argomentazione che fa parte del cosiddetto determinismo logico, in quanto stabilisce un nesso tra la necessità di tutte le cose e la verità/falsità delle proposizioni. Si tratta, come è noto, di un testo molto problematico, che ha suggerito interpretazioni molto diverse sia dell'intero capitolo sia dei principali punti (1). Le principali questioni sulle quali gli interpreti si sono trovati in disaccordo sono sostanzialmente le seguenti:

1) quale sia esattamente l'argomentazione; 2) se Aristotele ne accetti o meno la validità; 3) quale sia la «soluzione» aristotelica; 4) se Aristotele ha ragione o meno nel derivare dal determinismo logico il fatalismo, l'affermazione cioè che per l'uomo è inutile prendere decisioni ed agire, poiché in ogni caso accadrà ciò che è necessario che accada." (p. 59)

(1) 1 Cfr. Celluprica [1977]. Per ulteriore bibliografia cfr.: Weidemann [1994], Gaskin [1995], Whitaker [1996], Zadro [1999].

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Revised and reprinted as Chapter 4: *The Signification of Names* in: D. Charles, *Aristotle on Meaning and Essence*, New York: Oxford University Press 2000, pp. 78-109.

"Aristotle's discussion of names (*onomata*) and their meaning or signification (*semainein*) is part of his general account of linguistic signification, definition and thought. This is still a somewhat neglected area or study.

(...)

My starting-point will be Aristotle's discussion of the signification of names and 'name-like expressions' in the *Posterior Analytics* (*An. Post.*) and *de Interpretatione* (*Int.*). While he comments on these issues elsewhere (for example in the *Topics*, *Categories* (*Cat.*), *Metaphysics* (*Met.*), *Physics* (*Phys.*) and *Poetics*), *de Interpretatione* and the *Posterior Analytics* suggest the basis for a relatively systematic view, which is clearly connected with his account of definition and thought (*noein*). It may well be that at other times Aristotle held other views on the same topics. But I shall focus mainly on *de Interpretatione* and the *Analytics*, and not attempt an overall survey of all his writings on these issues. The account which he offers there is a striking one which plays a major role in shaping his discussion of other central issues.

In this paper, I shall outline Aristotle's discussion of accounts of what names signify in the *Analytics* (section 2). and of names and similar expressions in *de Interpretatione* (3). This sketch will bring into sharper perspective his discussion of empty names and existence (4). and of permissible substitutions in knowledge (and belief contexts (5). From this vantage-point, I shall seek to articulate some of Aristotle's views on the interconnections between signification, thought and definition (6). In the final sections (7) and (8) I shall make a few remarks about the role his account of signification plays in motivating certain of his other views, and about the philosophical problems which it faces. These final sections do not attempt an

exhaustive treatment of the issues they raise, but aim merely to suggest avenues for further Investigation." (pp. 37-38)

36. Chiesa, Curzio. 1986. "Symbole et signe dans le *De Interpretatione*." In *Philosophie du langage et grammaire dans l'Antiquité. Actes du Colloque International sur philosophie du langage et théories linguistiques dans l'Antiquité. Grenoble 3-6 septembre 1985*, edited by Joly, Henri, 203-218. Bruxelles: Ousia.
37. ———. 2012. "Le problème de l'être dans le « *De interpretatione* » (chapitre 11)." In *Physique et métaphysique chez Aristote*, edited by Bonelli, Maddalena, 19-37. Paris: Vrin.
38. Conso, Daniele. 2001. "Remarques sur la terminologie du « *Liber Peri Hermeneias* » et de la tradition logique de langue latine antérieure à Boèce." *Latomus* no. 60:944-961.
Résumé: "Après avoir rappelé les principales concordances et divergences entre la terminologie logique latine avant et après Boèce, on examine deux choix propres soit à l'auteur du « *Peri hermeneias* » (PH) transmis sous le nom d'Apulée, soit à la première tradition logique de langue latine : celui de « *pars* » (« *particula* ») et celui de « *formula* » (« *forma* » chez Martianus Capella), choix auxquels Boèce substituera « *terminus* » et « *figura* », pour rendre la notion de « *terme* » (ὄρος chez Aristote) et celle de « *figure* (du syllogisme) » (σχήμα chez Aristote). Dans chaque cas, on passe en revue la distribution des emplois dans le PH et chez Martianus, en signalant les attestations antérieures ou postérieures à ces traités. On s'interroge enfin sur les raisons possibles du choix effectué par l'auteur du PH et maintenu ou modifié par Martianus Capella."
39. Craig, William Lane. 1988. *The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*. Leiden: Brill.
Capter I. *Aristotle*, pp. 1-58.
Summary: "In summary, we have seen that in chapter 9 of *De interpretatione* Aristotle argues that if one grants that

the Principle of Bivalence holds for all future singular propositions, then fatalism results. For the semantic relation between propositions and corresponding reality is such that if a proposition is true, then necessarily reality must correspond to it, and if it is false, then necessarily reality must fail to correspond to it. Hence, if a future singular proposition has a truth value, future reality must eventuate according as the proposition is true or false. Because contradictions cannot exist in reality, the relevant state of affairs and its opposite cannot both be actualized; so when the time of the event arrives, one or the other state of affairs must be realized. Hence, in an antiphesis of future singular propositions, both cannot be true, nor can both be false. But both can be indeterminate, in that they lack a truth value. Hence, not all future singular propositions are true or false.

The joker in this deck, if we may call it that, would seem to be Aristotle's view of truth as correspondence.⁽¹³⁷⁾ It might be thought that a future singular proposition must be true if it corresponds to what will in fact be, and if not, then it is false. Accordingly, future-tense propositions must be as bivalent as past- or present-tense statements. But Aristotle apparently thought that if reality were as yet undetermined, then corresponding propositions were also indeterminate as regards their truth value. Ackrill explains that Aristotle held to "a rather crude realistic correspondence theory of truth, and we might well expect him to think that if the state of affairs now is such that it is not settled whether x will or will not occur, then 'X will occur' is not now either true or false: there is not yet anything in the facts for it to correspond or fail to correspond with." ⁽¹³⁸⁾ On such a view, the only future singular propositions which could now have a truth value would be ones about things which will happen necessarily as part of an everlasting cyclical process. In their case, although there is no future state of affairs now existent with which a proposition may correspond, nevertheless

there are in the present the conditions which make the future realization of the state of affairs a necessity, and hence a future singular proposition may be truly asserted of it. But future contingent singular propositions have as yet no truth value. On the basis of the presently existing conditions all that may be truly said of a contingent future singular is "It is going to be." But in such a case, the truth of the proposition says nothing about the eventual actualization of the event-it may or may not occur. Aristotle does not explicitly say that future contingent singular propositions become true or false; but he says they are not already true or false. Technically speaking, they do not become true or false; it is the present-tense version of the statements that comes to possess a truth value. It is not unlikely that this distinction did not concern Aristotle, but he does not in any event commit himself clearly to saying the future-tense versions come to be true or false. (139) When the time of the event arrives, then exactly one of the states of affairs is actualized and in the antiphrasis one of the propositions becomes actually true in its present-tense version. Since future contingent singular propositions are not antecedently true or false, the argument for fatalism based on antecedent truth and the necessity of the semantic relation fails." (pp. 57-58)

(137) See Lukasiewicz, *Aristotle's Syllogistic*, p. 156; Ross, *Aristotle*, p. 26; Taylor, "Future Contingencies," 3, 16; Frede, *Aristoteles und die "Seeschlacht"*, p. 66; McKim, "Fatalism and the Future," p. 103; Dickason, "Sea Fight," p. 20-1; White, "Fatalism and Causal determinism," pp. 233-6.
 (138) Ackrill, *Aristotle's "De Interpretatione"*, pp. 140-1.
 (139) Frede, *Aristoteles und die "Seeschlacht"*, p. 72-3.

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Dickason, Anne. "Aristotle, the Sea Fight, and the Cloud." *Journal of the History of Philosophy* 14 (1976): 11-22.
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Ross, W. D. *Aristotle*. 5th ed. London: Methuen, 1953.

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White, Michael J. "Fatalism and Causal Determinism: an Aristotelian Essay." *Philosophical Quarterly* 31 (1981): 231-41.

40. Crivelli, Paolo. 2001. "Empty terms in Aristotle's logic." *Proceedings of the Boston Area Colloquium in Ancient Philosophy* no. 17:237-269.

41. ———. 2004. *Aristotle on Truth*. Cambridge: Cambridge University Press.

Contents: Acknowledgments IX; Notes on the text X; List of abbreviations of titles of Aristotle's works XI; Introduction 1; Part I. Bearers of truth or falsehood 45; 1. States of affairs, thoughts, and sentences 45; 2. Truth conditions for predicative assertions 77; 3. Truth conditions for existential assertions 99; Part II. 'Empty' terms 129; 4. Truth as correspondence 129; 5. 'Vacuous' terms and 'empty' terms 152; Part III. Truth and time 183; 6. Truth and change 183; 7. Truth and determinism in *De Interpretatione* 9 198; Appendix I. *Metaph.* Theta 10 1051b 1: the text 234; Appendix 2. *Metaph.* Theta 10 1051b 2-3: the text 238; Appendix 3. *Int.* 7, 17b 16-18: the text 239; Appendix 4. The two place relations in Aristotle's definition of truth 254; Appendix 5. Aristotle's theory of truth for predicative assertions: formal presentation 258; Appendix 6. The failure of Bivalence for future-tense assertions formal presentation 266; References 284; Index of names 313; Index of subjects 319; Index of passages 321.

42. ———. 2009. "Aristotle on Signification and Truth." In *A Companion to Aristotle*, edited by Anagnostopoulos, Georgios, 81-100. Malden: Wiley-Blackwell.

"Aristotle discusses signification and truth in passages from several works, mainly the *Categories*, *de Interpretatione*, *Sophistici Elenchi*, *de Anima*, the *Metaphysics*, and the *Poetics*. Signification and truth are not the main topic of these works: their discussions of these subjects are asides. This study reconstructs some views on signification and truth to which Aristotle can be plausibly taken to be committed by his scattered remarks." (p. 81)

43. Dancy, R. M. . 1975. *Sense and Contradiction. A Study in Aristotle*. Dordrecht: Reidel.

Appendix I. *De interpretatione* 14 143-152.

"Ammonius (in *De int.* 251.27ff.) suspected that this chapter was either not by Aristotle or a dialectical exercise. The only visible reason for doubting its authenticity is that some of what it says conflicts with things said elsewhere in Aristotle, and that is not much of a reason. So let us take it as genuine (cf. Ackrill, *Cat. & De int.* p. 153).

In any case, the chapter contains some astounding confusions. So either Aristotle is genuinely confused, or Ammonius' second alternative is right, and he is just trying out arguments. For present purposes, it does not matter which alternative we take." (p. 143)

Appendix II. *De interpretatione* 11. 21a. 25-27 153-155.

"Among too many other things, Aristotle is concerned in *De int.* 11 with patterns of inference in which the cancellation of a term yields a conclusion: it follows from 'this is a pale man' that this is pale, and that it's a man (21a18-20), but not from 'this is a dead man' that this is a man (a21-24). He says of the uncanceled term in the conclusion that it is used 'simply' (απλός a5, etc.): an alternative paraphrase might be 'on its own'. Thus if you went (illicitly) from 'Socrates is a good cobbler' to 'Socrates is good', you would be concluding that Socrates is good simply, or that 'good' on its own applies to Socrates (cf. 20b35-36, 21a14-15).

We can represent this device (which, I think, is almost purely syntactic) with a linguist's boundary marker: your

conclusion would be 'Socrates is good#'." (p. 153)

44. d'Avino, Rita. 1988. "Un proemio esemplare: Aristotele, *Peri Hermeneias*, 16 a 1-16." *Studi e Saggi Linguistici* no. 28:127-146.

45. De Angelis, Alessandro. 2002. "Materialità e funzionalità del segno linguistico nel Proemio del *Περὶ ἑρμηνείας*." *Linguistica e Letteratura* no. 27:9-37.

46. De Cuyper, Ludovic, and Willems, Klaas. 2008. "Meaning and Reference in Aristotle's Concept of the Linguistic Sign." *Foundations of Science* no. 13:307-324.

Abstract: "To Aristotle, spoken words are symbols, not of objects in the world, but of our mental experiences related to these objects. Presently there are two major strands of interpretation of Aristotle's concept of the linguistic sign. First, there is the structuralist account offered by Coseriu (*Geschichte der Sprachphilosophie. Von den Anfängen bis Rousseau*, 2003 [1969], pp. 65-108) whose interpretation is reminiscent of the Saussurean sign concept.

A second interpretation, offered by Lieb (in: Geckeler (Ed.) *Logos Semantikos: Studia Linguistica in Honorem Eugenio Coseriu* 1921-1981, 1981) and Weidemann (in: Schmitter (Ed.) *Geschichte der Sprachtheorie 2. Sprachtheorien der abendländischen Antike*, 1991), says that Aristotle's concept of the linguistic sign is similar to the one presented in Ogden and Richards's (*The meaning of meaning: A study of the influence of language upon thought and of the science of symbolism*, 1970 [1923]) semiotic triangle. This paper starts off with an introductory outline of the so-called *phýsei-thései* discussion which started during presocratic times and culminated in Plato's *Cratylus*. Aristotle's concept of the linguistic sign is to be regarded as a solution to the stalemate position reached in the *Cratylus*. Next, a discussion is offered of both Coseriu's and Lieb's analysis. We submit that Aristotle's concept of the linguistic sign shows features of both Saussure's and Ogden and Richards's sign concept but that it does not exclusively predict one of

the two. We argue that Aristotle's concept of the linguistic sign is based on three different relations which together evince his teleological as well empiricist point of view: one internal (symbolic) relation and two external relations, i.e. a likeness relation and a relation *katà synthéken*."

47. Delcomminette, Sylvain. 2007. "L' un, l'être et le nécessaire dans le « De interpretatione » d'Aristote." *Elenchos. Rivista di studi sul pensiero antico* no. 28:41-78.
48. Denooz, Joseph. 1996. "L'étendue du lexique chez Aristote." In *Aristotelica Secunda. Mélanges offerts à Christian Rutten*, edited by Motte, André and Denooz, Joseph, 81-90. Liège: Université de Liège. Faculté de Philosophie et Lettres.
49. Di Cesare, Donatella. 1980. *La semantica nella filosofia greca*. Roma: Bulzoni.
50. ———. 1981. "Die Semantik bei Aristoteles." *Sprachwissenschaft* no. 6:1-30.
51. Di Mattei, Steven. 2006. "Rereading Aristotle's *De interpretatione* 16a3-8: verbal propositions as symbols of the process of reasoning." *Ancient Philosophy* no. 26:1-21.
52. Dickason, Anne. 1976. "Aristotle, the Sea Fight, and the Cloud." *Journal of the History of Philosophy*:11-22.
 "Since nearly the time Aristotle wrote, interest has waxed and waned in his early work, *De Interpretatione* ix; (1) recent controversy was sparked in 1951, when D. C. Williams discussed the problem of the sea fight in relation to modern logic, and although the flurry of journal articles has quieted down, the problems are not yet solved. One reason for this is that in this passage there is not only the difficulty of evaluating whether Aristotle is correct, but there is the added intrigue of trying to decipher just what it is that he is saying, or even with what issue he is primarily concerned. Many commentators believe he is supporting a correspondence theory of truth by denying the law of the excluded middle for future tense propositions; others believe he is concerned more with metaphysical contingencies and the threat of fatalism than with logical

difficulties. Still others take the main point to be about the relation of tensed sentences to infinite past or future truth; and a few come full circle, interpreting Aristotle as not denying the excluded middle at all, only examining the question of whether the future will be like the past. In general, all of these fit into one of two broad areas of interpretation; either they are concerned with the distinction between 'necessarily (p or not p)' and 'necessarily p or necessarily not p,' or with the distinction between 'necessarily (p is true or not p is true)' and 'necessarily (p will be true or not p will be true).'(2) Because of these different readings of Aristotle it is not enough for us simply to present the text and then examine different conclusions about it. Instead, we will consider the most important commentaries, tracing the development of recent criticism as well as establishing the uniqueness of each position, and then draw our own conclusions based on these interpretations and our own reading of the text. (3) Due to the volume of material on the sea fight, not all commentaries can be discussed here; some, e.g., Albritton (4) and Ryle, (5) are omitted because they do not focus enough on Aristotle, while others, e.g., Strang (6) and McKim (7), are not covered because their basic arguments are found elsewhere." (pp. 11-12 note 3 omitted. The authors summarized are: D. C. Williams, Linsky, Butler, Anscombe, Ackrill, Hintikka, and Frede.)

(1) The problem of the universal applicability of the excluded middle was debated by the Stoics and Epicureans, and specific commentaries on *De Interpretatione* have come down to us from Ammonius and Stephanus. Both Alexander of Aphrodisias and Simplicius wrote commentaries on other Aristotelian works, and these often include remarks relevant to the problems of the sea fight.

(2) D. C. Williams, "Professor Linsky on Aristotle," *Philosophical Review*, 63 (April, 1954), 253.

(4) R. Albritton, "Present Truth and Future Contingency," *Philosophical Review*, 66 (January, 1957), 29-46.

(5) Gilbert Ryle, "It Was to Be," *Dilemmas* (Cambridge: The University Press, 1954).

(6) C. Strang, "Aristotle and the Sea Battle," *Mind*, LXIX (October, 1960), 447-465.

(7) V. R. McKim, "Fatalism and the Future: Aristotle's Way Out," *Review of Metaphysics*, 25 (September, 1971), 80-111.

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Leonard Linsky, "Professor Donald Williams on Aristotle," *Philosophical Review*, 63 (April, 1954), 250.

53. Diebler, Stéphane. 2002. "Les canons de Proclus: problèmes et conséquences de l'interprétation syriano-proclienne du *De interpretatione*." *Dionysius* no. 20:71-94.

"Ammonius' commentary on the third section of Aristotle's *De interpretatione* offers insight into the hermeneutical and logical debates of the 5th-cent. Neoplatonic school in Athens. These debates reveal one of the rare cases of a theory that was developed by Proclus in contradiction to that of his teacher Syrianus, and in the course of which the authoritative status of *De interpretatione* as a carefully composed, syntagmatic work was itself put into question. Ammonius was concerned to establish the coherence of Int. 19 B 19-20 B 12. According to his interpretation, this section falls into two further sections, arranged around two types of logical sequences : the first section (19 B 19-20 A 6) is explained according to an interpretation that derives from Syrianus ; the second (20 A 20-20 B 13) recalls the canons of Proclus."

54. Du Lac, Henri. 1949. "The 'Peri Hermenias'. Its Place in Logic and Its Order." *Laval Théologique et Philosophique* no. 5:161-169.

"Aristotle and St. Thomas commonly divide logic according to the three operations of the human intellect, because logic is the art which directs man in the very act of reasoning that he might proceed in good order, with ease, and without

error. (1) The first two acts of the mind are properly called acts of intellect rather than of reason, because they are not acts of discourse. The first act is the understanding of what is indivisible or incomplex, and is therefore called simple apprehension. By this act the intellect grasps the essence of a thing. The *Predicaments* of Aristotle treats the part of logic pertaining to this operation. The second act of the intellect is that of composition or division, in which truth or falsity is found. Aristotle treated what pertains to this act in the *Peri Hermeneias*. The third operation of the mind is properly called an act of reason, because in it the mind moves from a knowledge of a known truth to a knowledge of a truth previously unknown. This is the act of discourse, that is, of going from one to another. The remaining books of the *Organon* treat of what pertains to this act - the *Prior Analytics*, the *Posterior Analytics*, the *Topics*, and the *Sophistic Refutations*. Just as the first of these acts is ordered to the second, and the second to the third, so the *Predicaments* is ordered to the *Peri Hermeneias* and the latter to the *Prior Analytics* and the books that follow."

(1) St. Thomas, *Expositio in Libros Posteriorum Analyticorum*, I, lect. 1 (ed. Leonina), nn. 1, 4.

55. Fédier, François. 1985. "Interprétations." In. Paris: Press Universitaires de France.
56. Fine, Gail. 1984. "Truth and Necessity in *De interpretatione*." *History of Philosophy Quarterly* no. 1:23-47.
57. Frede, Dorothea. 1970. *Aristoteles und die "Seeschlacht". Das Problem der contingentia futura in De interpretatione* 9. Göttingen: Vandenhoeck & Ruprecht.
58. ———. 1972. "Omne quod est quando est necesse est esse." *Archiv für Geschichte der Philosophie* no. 54:153-167.
59. ———. 1985. "The Sea-Battle Reconsidered. A Defence of the Traditional Interpretation." *Oxford Studies in Ancient Philosophy* no. 3:31-87.

60. ———. 1990. "Fatalism and Future Truth." *Proceedings of the Boston Area Colloquium in Ancient Philosophy* no. 6:195-227.
61. ———. 1998. "Logik, Sprache und die Offenheit der Zukunft in der Antike: Bemerkungen zu zwei neuen Forschungsbeiträgen." *Zeitschrift für Philosophische Forschung* no. 52.
Review of Aristoteles, *Peri hermeneias*, translated and commented by Hermann Weidemann, Darmstadt: Akademie Verlag, 1994 and Richard Gaskin, *The Sea Battle and the Master Argument* (1995).
62. Gaskin, Richard. 1995. *The Sea Battle and the Master Argument. Aristotle and Diodorus Cronus on the Metaphysics of the Future*. Berlin: Walter de Gruyter.
63. ———. 1996. "Sea Battles, Worn-out Cloaks, and Other Matters of Interpretation: Weidemann on Aristotle's *peri Hermeneias*." *Archiv für Geschichte der Philosophie* no. 78:48-59.
64. Graffi, Giorgio. 1986. "Una nota sui concetti di *rhema* e *logos* in Aristotele." *Athenaeum* no. 74:91-101.
"Si mostra come i termini aristotelici "rhema" e "logos", tradizionalmente tradotti con "verbo" e "discorso", abbiano in realtà il valore più ampio di "predicato" (in senso sintattico) e "combinazione di parole", rispettivamente."
65. Gyekye, Kwame. 1974. "Aristotle on Language and Meaning." *International Philosophical Quarterly* no. 14:71-77.
66. Hafemann, Burkhard. 1999. "Indefinite Aussagen und das kontingente Zukünftige: Akzidentien allgemeiner Gegenstände und graduelle Wahrheit in Aristoteles' De Interpretatione 7 und 9." *Philosophiegeschichte und logische Analyse — Logical Analysis and History of Philosophy* no. 2:109-137.
Abstract: "It is argued that an indefinite statement as introduced by Aristotle in De Int. 7 refers to a universal which may partly partake in contradictory accidental predicates together. This fact is mirrored on the semantic

level by ascribing truth to some degree to both parts of a contradiction. Accordingly, Aristotle should be interpreted as saying in *De Int.* 9 that the statement that a certain individual object will be F at some time in its contingent future is to be taken to be true to some degree. This is because an individual object cannot yet, with respect to its contingent future, be regarded as factual but only as - time-independently - exemplifying a universal. In this context, fundamental connections become apparent between indefinite statements on the one hand and Aristotelian modal logic, statistics and theory of science on the other."

67. Hankinson, Robert James. 1987. "Improper Names. On intentional Double Ententes in Aristotle's *De interpretatione*." *Apeiron* no. 20:219-225.
68. Hintikka, Jaakko. 1962. "On the Interpretation of *De Interpretatione* 12-13." *Acta Philosophica Fennica* no. 14:5-22.
Reprinted with revisions as chapter III of his *Time and Necessity*, Oxford, 1973.
69. ———. 1964. "The Once and Future Sea Fight: Aristotle's Discussion of Future Contingents in *De Interpretatione* IX." *The Philosophical Review* no. 74:461-492.
Revised and reprinted as Chapter VIII in: J. Hintikka, *Time and Necessity. Studies in Aristotle's Theory of Modality*, New York: Oxford University Press, 1973, pp. 147-178.
70. Hintikka, Jaakko, Remes, Unto, and Knuuttila, Simo. 1977. "Aristotle on Modality and Determinism." *Acta Philosophica Fennica* no. 29.
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Abstract: "Abstract: This paper shows that Aristotle's *De Interpretatione* does not separate syntax from semantics (contra Boger 2004). Linguistic sentences are not syntactic entities, and non-linguistic meanings are not semantic propositions expressed by linguistic sentences.

In fact, Aristotle resorts to a mental conception of meaning, distinguishing linguistic meanings in a given language from non-linguistic mental contents in relation to actual things: while the former are not the same for all, the latter are shared by everyone. Aristotle is not a modern logician, like Boole, Frege, or Russell, in so far as a mental conception of meaning does not reveal an abstract semantics for a syntactic language."

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- Table des matières: Jonathan Barnes: Avant-propos 7; Suzanne Husson: Introduction 11; Pierre Aubenque: Sens et unité du traité aristotélicien *De l'interprétation* 37; Maddalena Bonelli: Alexandre d'Aphrodise et le *De interpretatione* 51; Cristina Viano: Aristote contre les astrologues. Olympiodore sur le *De interpretatione*, chap. 9 69; Ali Benmakhlouf: La similitude entre les verbes et les noms dérivés 89; Irène Rosier-Catach: Sur le verbe substantif, la prédication et la consignification - *Peri hermeneias* 16 b 20-25 dans les traductions et les commentaires en latin 97; Jonathan Barnes: Le *De interpretatione* dans la philosophie moderne 141; Jean

Baptiste Gourinat: Le traité *De l'interprétation* entre logique classique et logique non-classique 163; Bibliographie 193; Index des sources 205; Index des noms 211; Index des notions 215-222.

"Pendant les années 2003-2005 les membres du Centre Léon Robin ont décidé de consacrer leurs heures de travail commun à une étude du *De interpretatione*. Chaque mois, un samedi matin a été consacré à une séance close où nous avons lu ensemble le texte d'Aristote; chaque mois, un vendredi après-midi s'est tenue une conférence publique sur le thème: "Le *De interpretatione* et sa réception". Le présent livre en rassemble, sous une forme revue, une sélection. Inutile de dire que le livre ne donne pas une histoire de la fortune du *De interpretatione*: une telle histoire remplirait deux volumes chacun de cinq cents pages. Inutile de dire que le livre n'offre pas de récit continu: les recueils de conférences ne sont pas comme cela. Mais il vaut la peine de dire que le livre possède une certaine cohérence, qu'il possède une unité thématique.

Après une introduction générale de la main de Suzanne Husson qui a édité le recueil, le premier chapitre, écrit par Pierre Aubenque, ancien directeur du Centre Léon Robin, discute de la nature et de la spécificité du traité aristotélicien; ensuite, six chapitres présentent six échantillons, les résultats de six sondages pris dans l'histoire du *De interpretatione*. Deux des sondages ont été faits sur l'Antiquité, deux sur le Moyen Âge, deux sur l'époque moderne. Les échantillons font ressortir l'influence du traité sur l'histoire des sujets qu'il a abordés: sur la théorie des parties du discours, par exemple, ou sur la conception de la signification. Ils font également ressortir l'influence du traité sur des sujets apparemment éloignés de ses propres intérêts: sur les attaques contre l'astrologie, par exemple, ou sur le développement d'une logique qui reconnaît plus de deux valeurs de vérité. Ils démontrent comment ce ne furent pas seulement les doctrines professées dans le traité qui

déterminèrent la pensée de ses lecteurs mais aussi les détails-parfois même des variantes textuelles ..." p. 9

75. Ihrig, Ann H. 1965. "Remarks on Logical Necessity and Future Contingencies." *Mind* no. 74:215-228.
76. Irwin, Terence H. 1982. "Aristotle's Concept of Signification." In *Language and Logos. Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Schofield, Malcolm and Nussbaum, Martha, 241-266. Cambridge: Cambridge University Press.
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78. Jacobs, William. 1979. "Aristotle and Nonreferring Subjects." *Phronesis. A Journal for Ancient Philosophy* no. 24:282-300.
79. Joja, Athanase. 1969. "La théorie de la modalité dans le *De interpretatione*." *Revue Roumaine des Sciences Sociales. Série de Philosophie et Logique* no. 13:323-342.
80. Jones, Russell E. 2010. "Truth and Contradiction in Aristotle's *De Interpretatione* 6-9." *Phronesis. A Journal for Ancient Philosophy*:26-67.
Abstract: "In *De Interpretatione* 6-9, Aristotle considers three logical principles: the principle of bivalence, the law of excluded middle, and the rule of contradictory pairs (according to which of any contradictory pair of statements, exactly one is true and the other false). Surprisingly, Aristotle accepts none of these without qualification. I offer a coherent interpretation of these chapters as a whole, while focusing special attention on two sorts of statements that are of particular interest to Aristotle: universal statements not made universally and future particular statements. With respect to the former, I argue that Aristotle takes them to be indeterminate and so to violate the rule of contradictory pairs. With respect to the latter, the subject of the much discussed ninth chapter, I argue that the rule of contradictory pairs, and not the principle of bivalence, is the

focus of Aristotle's refutation. Nevertheless, Aristotle rejects bivalence for future particular statements."

81. Judson, Lindsay. 1988. "La bataille navale d'aujourd'hui. *De interpretatione* IX." *Revue de Philosophie Ancienne* no. 6:5-37.

"Réexamen, mené dans la perspective de la philosophie analytique, des arguments discutés par Aristote à propos des futurs contingents et illustrés par l'exemple de la bataille navale. Aristote ne nie pas la "vérité-par-avance", mais il explique plutôt ce qui est erroné dans l'argument nécessitariste. En outre, il ne répond pas dans le *De int.* IX à l'argument de la vérité future, mais à un argument subtilement apparenté à celui-ci. Enfin il propose une solution qui vaut non seulement pour le problème qu'il discute, mais aussi pour d'autres problèmes posés par l'idée de "vérité-par-avance".

82. Kasabova, Anita, and Marinov, Vladimir. 2016. "Aristotle on Verbal Communication: The First Chapters of *De Interpretatione*." *Empedocles: European Journal for the Philosophy of Communication* no. 7:239-253.

Abstract: "This article deals with the communicational aspects of Aristotle's theory of signification as laid out in the initial chapters of the *De Interpretatione* (*Int.*). We begin by outlining the reception and main interpretations of the chapters under discussion, rather siding with the linguistic strand. We then argue that the first four chapters present an account of verbal communication, in which words signify things via thoughts. We show how Aristotle determines voice as a conventional and hence accidental medium of signification: words as 'spoken sounds' are tokens of thoughts, which in turn are signs or natural likenesses of things. We argue that, in this way, linguistic expressions may both signify thoughts and refer to things. This double account of signification also explains the variety of ontological, logical and psychological interpretations of the initial chapters of *Int.*"

83. King-Farlow, John. 1959. "Sea-Fights Without Tears." *Analysis* no. 19:36-42.
84. Kirwan, Christopher. 1986. "Aristotle on the Necessity of the Present." *Oxford Studies in Ancient Philosophy* no. 4:167-187.
85. Kretzmann, Norman. 1974. "Aristotle on Spoken Sound Significant by Convention." In *Ancient Logic and Its Modern Interpretations*, edited by Corcoran, John, 3-21. Dordrecht: Reidel.

"A few sentences near the beginning of *De interpretatione* (16a3-8) constitute the most influential text in the history of semantics. The text is highly compressed, and many translations, including the Latin translation in which it had its greatest influence, have obscured at least one interesting feature of it. In this paper I develop an interpretation that depends on taking seriously some details that have been neglected in the countless discussions of this text.

The sentence with which *De interpretatione* begins, and which immediately precedes the text I want to examine, provides (as Ackrill remarks 1) the program for Chapters 2-6.

... we must settle what a name is [Chapter 2] and what a verb is [Chapter 3], and then what a negation [Chapters 5 and 6], an affirmation [Chapters 5 and 6], a statement [Chapters 4 and 5] and a sentence [Chapters 4 and 5] are. (16a1-2) (2)

But Aristotle says "First we must settle what a name is ...", and that is what he does in Chapter 2. The remainder of Chapter 1, then, may be thought of as preparatory to the main business of those chapters. And since their main business is to establish definitions, it is only natural to preface them with a discussion of the defining terms. At the beginning of Chapter 2, for instance, Aristotle defines 'name' in these terms: 'spoken sound', 'significant by convention', 'time', and 'parts significant in separation'. These terms continue to serve as defining terms beyond

Chapter 2, and the remainder of Chapter 1 (16a3-18) is devoted to clarifying them. The special task of the text I am primarily concerned with is the clarification of the proximate genus for the definitions in Chapters 2-6:

"spoken sound significant by convention" (3)." (p. 3)

(1) In the notes to his translation (J. L. Ackrill, Aristotle's *Categories* and *De Interpretatione*, Clarendon Press, Oxford, 1963; reprinted with corrections, 1966), p. 113.

(2) I am using Ackrill's translation, the only one in English that shows an understanding of the text.

(3) Cf. Ackrill, op. cit., Notes, p. 115: "'A spoken sound significant by convention' gives the genus under which fall not only names but also verbs (Chapter 3) and phrases and sentences (Chapter 4)".

86. Lallot, Jean. 1988. "Origines et développement de la théorie des parties du discours en Grèce." *Langages* no. 92:11-23.
Résumé : "Cet article a un double propos, historique et méthodologique. Après avoir (1) esquissé brièvement ce qu'on pourrait appeler la « préhistoire » de la théorie des parties du discours en Grèce — préhistoire qui s'achève avec Platon — , puis (2) rappelé les étapes du développement qui nous conduit, au seuil de l'ère chrétienne, à une liste de huit parties (nom, verbe, participe, article, pronom, préposition, adverbe, conjonction), j'examinerai (3), chez le grand grammairien alexandrin du 2^e siècle de notre ère, Apollonius Dyscole, quels sont les critères et les principes mis en oeuvre dans les opérations de classement grammatical des mots de la langue grecque. Une question retiendra plus spécialement mon attention dans cette dernière partie : dans les cas où un même signifiant semble pouvoir légitimement prétendre à figurer dans plus d'une classe, que fait le grammairien grec ? quel discours tient-il ? pour justifier quelle décision ?"
"2. D'Aristote aux grammairiens : l'inventaire des parties du discours

Après le coup d'envoi platonicien, les contributions décisives au développement de la théorie sont celles d'Aristote (2.1.), des Stoïciens (2.2.) et des grammairiens d'Alexandrie (2.3) Je me limiterai ici, faute de place, à des indications brèves sur ces apports successifs, en renvoyant chaque fois le lecteur à des exposés plus détaillés : sur l'ensemble de cette histoire, on pourra se reporter à Steinthal *1890-91, Robins *1966, Pinborg *1975.

2.1. Aristote

La réflexion aristotélicienne sur la langue est dispersée dans l'ensemble de son oeuvre : bonne étude synthétique de McKeon 1946-47. Pour les parties du discours, les deux textes principaux sont les chap. 2 à 4 du *De interpretatione* (voir le commentaire d'Ackrill, Oxford 1968) et le chap. 20 de la *Poétique* (voir Pagliaro *1955, Morpurgo-Tagliabue 1967 et Dupont-Roc & Lallot *1980).

Aristote fait fond sur l'analyse platonicienne du logos en *onoma* + *rhēma*. Il précise la définition du verbe en en faisant un mot « qui signifie en plus le temps » (*prossēmainon khronon*, *De int.* 16 b 6) et enrichit l'inventaire des « parties de l'expression » (*mere lexeôs*, *Poét.* 1456 b 20) de deux nouvelles unités : la « conjonction » (*sundesmos*) et l'« articulation » (*arthron*) (3). Le texte où ces derniers termes sont définis (*Poét.* 1456 b 37 sqq.) étant très confus, il n'est pas possible d'établir de manière sûre quelles classes de mots ils désignaient au juste. Quoi qu'il en soit, les termes eux-mêmes manifestent l'attention portée par Aristote aux mots qui, d'une façon ou d'une autre (conjonctive, prépositive, anaphorique...), remplissent dans le discours une fonction connective.

Un autre apport important d'Aristote à la théorie linguistique est le concept de « cas » (*ptōsis*). Aristote désigne par là, tant pour le verbe que pour le nom, toute forme qui s'écarte, pour le nom, du nominatif (exprimant la fonction sujet) et pour le verbe, de l'indicatif présent (prédicat par excellence de la proposition assertive).

Fondée sur des critères à la fois morphologiques et sémantico-logiques, la notion de « cas » était appelée à jouer un rôle important dans la description de la morphologie nominale." (p. 15)

(3) Il y a doute sur l'authenticité de l'attestation de *arthron* chez Aristote. D'après les témoignages (reflétant sans doute la même source) de Denys d'Halicarnasse, *De comp. verb.* ch. 2, et de Quintilien, *Inst. or.* I 4.18, Aristote ne distinguait que trois parties du discours :

nom, verbe et conjonction. Aujourd'hui encore la question reste controversée.

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"Les propositions indéterminées du chapitre VII de *Peri Hermeneias* sont des particulières traduites par des universelles fausses. La cause de cette bizarrerie est dans le maître, et non dans les traducteurs. Aristote mutile un système naturel de propositions dont l'intégrité est restaurée par l'hexagone de Robert Blanché. Celui-ci ajoute deux postes au carré: Y (quantité partielle) et U (exclusion de la quantité partielle). Le carré représente A (totalité) et E (quantité zéro), mais pas avec la tierce quantité Y. Or, la quantité partielle (Y) est essentielle: c'est celle des particulières naturelles contenant notoirement plus d'information que les particulières logiques. U (exclusion de

la quantité partielle) est le signifié commun aux deux phrases qu'Aristote élimine du système naturel."

104. ———. 2001. "Une exception allemande: la traduction du *De Interpretatione* par le Professeur Gohlke: la note 10 sur les indéterminées d'Aristote." *Revue de Études Anciennes* no. 103:409-427.

"Professor Paul Gohlke (*) is the only translator to fully respect Aristotle's own conception of indeterminates. He was the first to perceive the linguistic problem raised by the indeterminate negative. All the other translators of *De Interpretatione* mistakenly render Aristotle's indeterminates, which are particulars, as universals. The origin of this mistake lies in one of the two Arabic translations."

(*) *Kategorien und Hermeneutik*, Paderborn, Ferdinand Schöningh, 1951

105. ———. 2004. "La transmission d'Aristote par les Arabes à la chrétienté occidentale: une trouvaille relative au *De Interpretatione*." *Revista Española de Filosofía Medieval* no. 11:181-195.

"*Some men are not white* and *Some men are white* versus *No man is white* are illegitimately identified to the two pairs of logical contradictories constituting the logical square: *A* versus *O* and *I* versus *E*, respectively. Thus, the level of natural language and that of logic are confused. The unfortunate Aristotelian alteration is concealed by the translation of propositions known as *indeterminates*. To translate these, which, semantically, are *particulars*, all scholars, except for Paul Gohlke, employ the two natural *universals* excluded by the Master! The work of Isador Pollak, published in Leipzig in 1913, [*Die Hermeneutik des Aristoteles in der Arabischen Übersetzung des Ishiik Ibn Honain*] reveals the origin of this nearly universal translation mistake: the Arabic version upon which Al-Farabi unfortunately bases his comment. In adding the vertices *Y* and *U* to the four ones of the square, the logical

hexagon of Robert Blanché (*) allows for the understanding of the manner in which the logical system and the natural system are linked."

(*) *Structures Intellectuelles. Essai sur l'organisation systématique des concepts* - Paris, Vrin, 1966; *Raison et Discours. Défense de la logique réflexive* - Paris, Vrin, 1967

106. ———. 2005. "Isidor Pollak et les deux traductions arabes différentes du *De interpretatione* d'Aristote." *Revue d'Études Anciennes* no. 107:29-46.

"Dans le chapitre VII du *De interpretatione*, Aristote mutile un système naturel de trois couples de contradictions naturelles. Il évince le couple où deux universelles naturelles "Les hommes sont blancs", "Les hommes ne sont pas blancs" s'opposent contradictoirement. Conséquence grave: les deux couples de contradictoires naturelles, qu'Aristote considère exclusivement, sont identifiés illégitimement aux deux couples de contradictoires logiques constituant le carré logique. Cette mutilation est dissimulée par la traduction des propositions dites "indéterminées". L'ouvrage d'Isidor Pollak, publié à Leipzig en 1913 (*Die Hermeneutik des Aristoteles in der arabischen Übersetzung des Ishak Ibn Honain, Abhandlungen für die Kunde des Morgenlandes*, 13,1), révèle l'origine de cette faute de traduction quasi universelle: la version arabe sur laquelle al-Farabi fonde son commentaire."

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"Introductory

This study is written in honour of a scholar who, among many other things, has laid the solid basis for the study of what may be considered the kernel of the semantics of the statement-making utterance, viz. the definition of the bearers of truth and falsity.

In the first section I present a survey of Plato's semantics of the statement-making expression and a number of key notions involved. Next, I explore Aristotle's views of the matter, starting with a discussion of Aristotle's notion of *pragma* including that of being *qua* truth and not-being *qua* falsehood. In search for the nature of Aristotle's *logos*, I

discuss this notion as it occurs on the *onomazein* level as well as the way in which it acts on the *legein* level. Next, I investigate the important notions of *synthesis* and *dihaeresis* and the role of *einai* as a monadic functor and *qua* syncategorematic container of categorial being. Finally, I attempt to present a characterization of Aristotle's statement-making utterance.

(...) p. 27

"Epilogue

We may summarize what we have found as follows:

1 For Plato,

1.1 a *logos* is a composite expression consisting of a name (*onoma*) and an attribute (*rhêma*) which as such is not yet a statement-making utterance

1.2 a *logos* represents a state of affairs (*pragma*), i.e. an actual combination of some participata (*dynameis*) in the outside world

1.3 a *logos eirêmenos* is a statement-making utterance; it asserts that the *pragma* represented by the *logos* is actually the case.

2 For Aristotle,

2.1 a *logos* is a composite expression consisting of an *onoma* and a *rhêma* which represents both a notional and an ontological state of affairs. It may be characterized as a 'statable complex'

2.2 a *pragma* is a state of affairs either *ontologically*: state of affairs being part of the outside world or *semantically*: state of affairs conceived of and expressed by a *logos*

2.3 a *logos apophantikos* ('statement-making utterance') is a *logos* actually stated (either asserted or denied)

2.4 a *logos* may as such be used either on the *onomazein* level or on the *legein* level (qua *logos apophantikos*).

Similarly, *phasis* (*kataphasis*, *apophasis*) may be used on either of these levels

2.5 *synthesis* is either *synthesis*₁, = the act of uniting an *onoma* and a *rhêma* into a *logos* (on the *onomazein* level) or

synthesis² = the assertion of such a union accomplished in a *logos apophantikos*, (on the *legein* level), while *dihairesis* is always the denial of such a union (on the *legein* level)

2.6 the *esti* forming part of a *logos apophantikos* is not a copula, properly speaking. Rather, it is a sign of (it consignifies, to speak with *De interp.* 3,16b24-5) synthesis².

The onoma and rhêma are already united to make up a *logos* ('statable complex') by synthesis, and, then, the *esti* rather than acting as a dyadic copulative functor, is merely a monadic sign of the 'statable complex' being actually stated

2.7 The propositional structure found in the *logos apophantikos* may be described as follows:

linguistically: a *logos* expressing categorial being (i.e. syncategorematic being implemented by one or more of the ten categories of being) is stated (either affirmatively or negatively) by means of the monadic functor 'be' or 'not be'
semantically: the pragma represented by the *logos* is said to be (or not to be, respectively) part of the outside world (or: 'be (not) the case')." pp. 53-54 (notes omitted).

126. ———. 1996. "On Aristotle's Semantics in *De Interpretatione* 1-4." In *Polyhistor. Studies in the History and Historiography of Ancient Philosophy Presented to Jaap Mansfeld on his Sixtieth Birthday*, edited by Algra, Keimpe, Horst, Pieter van der and Runia, David, 115-134. Leiden: Brill.

"By and large, in *De interpretatione* Aristotle is concerned with our capability to speak about all that presents itself to our mind. From chapter 4 onwards, he deals with the statement-making expressions (affirmation and negation), which are the main tools for conveying our thoughts about things. This discussion is prepared (chapters 1-3) by some important observations concerning the basic elements of such expressions, viz. *onoma* and *rhema*. The present contribution contains some comments on Aristotle's view of the proper nature of statement-making as put forward in *De interpretatione*. First, I would like to highlight Aristotle's,

what Sir David Ross has called 'frankly 'representative' view of knowledge' by discussing the terms *omoionoma* and *pragma*. Next, I will discuss what is meant by a term's 'time-connotation', and finally I will examine the semantics of *onoma*, *rhema* and *logos*." (p. 115)

127. ———. 2002. *Aristotle: Semantics and Ontology. Volume I: General Introduction. The Works on Logic*. Leiden: Brill. From the Preface: "In this book I intend to show that the ascription of many shortcomings or obscurities to Aristotle resulted from persistent misinterpretation of key notions in his work. The idea underlying this study is that commentators have wrongfully attributed anachronistic perceptions of 'predication', and statement-making in general to Aristotle. In Volume I, what I consider to be the genuine semantics underlying Aristotle's expositions of his philosophy are culled from the *Organon*. Determining what the basic components of Aristotle's semantics are is extremely important for our understanding of his view of the task of logic -- his strategy of argument in particular. In chapter 1, after some preliminary considerations I argue that when analyzed at deep structure level, Aristotelian statement-making does not allow for the dyadic 'S is P' formula. An examination of the basic function of 'be' and its cognates in Aristotle's philosophical investigations shows that in his analysis statement-making is copula-less. Following traditional linguistics I take the 'existential' or hyparctic use of 'be' to be the central one in Greek (*pace* Kahn), on the understanding that in Aristotle hyparxis is found not only in the stronger form of 'actual occurrence' but also in a weaker form of what I term 'connotative (or intensional) be' (1.3-1.6). Since Aristotle's 'semantic behaviour', in spite of his skilful manipulation of the diverse semantic levels of expressions, is in fact not explicitly organized in a well-thought-out system of formal semantics, I have, in order to fill this void, formulated some semantic rules of thumb (1.7).

In chapter 2 I provide ample evidence for my exegesis of Aristotle's statement-making, in which the opposition between 'assertible' and 'assertion' is predominant and in which 'is' functions as an assertoric operator rather than as a copula (2.1-2.2). Next, I demonstrate that Aristotle's doctrine of the categories fits in well with his view of copula-less statement-making, arguing that the ten categories are 'appellations' ('nominations') rather than sentence predicates featuring in an 'S is P' formation (2.3-2.4). Finally, categorization is assessed in the wider context of Aristotle's general strategy of argument (2.5-2.7). In the remaining chapters of the first volume (3-6) I present more evidence for my previous findings concerning Aristotle's 'semantic behaviour' by enquiring into the role of his semantic views as we find them in the several tracts of the *Organon*, in particular the *Categories*, *De interpretatione* and *Posterior Analytics*. These tracts are dealt with *in extenso*, in order to avoid the temptation to quote selectively to suit my purposes."

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"Studies of ancient semantics are inclined to concentrate on the significations of individual words. But most ancient thinkers are likely to be misrepresented by such an approach. In Aristotle's classic treatment of the subject, I shall argue, the primary signifier is the sentence, and individual words are considered only secondarily, in so far as they contribute to the sentence's function. Moreover, this emphasis is to be found elsewhere in the Platonic tradition of which, in this respect, Aristotle is a part - not just in Plato himself, but also in the Stoics. In fact only the Epicureans, among ancient thinkers, can be seen to make individual word-meaning primary.

This difference, if it can be established, should not cause surprise, since it merely reflects the general metaphysical outlook of the thinkers in question. Plato, Aristotle and the Stoics are teleologists, who regard the whole as ontologically prior to the part: the part can only be fully understood by reference to its function within the whole. (1) Epicurus by contrast is an atomist. He standardly treats parts as discrete items which, in coming together, generate larger complexes - be they atoms forming phenomenal bodies, or humans forming societies - but which in no sense have that as their pre-existing nature or function. Even bodily parts like hands and tongues came into being before any functions - including their communicative functions - were found for them. (2) On this same anti-teleological model, Epicurus regards the central core of language as an original set of naturally uttered "names" (probably nouns, adjectives and verbs), correlated to individual objects or contents of experience, and only at a later stage supplemented and inflected into a full-scale language. (3)

In developing this contrast, I shall concentrate primarily on Aristotle's *De interpretatione*, whose opening chapters became in antiquity a *locus classicus* on signification. This is

not because I believe that the *De interpretatione* must have directly influenced any of the other thinkers in the story. While we cannot positively exclude the possibility of its influence in the fourth and third centuries, perhaps even on Plato himself, I see no clear signs of it. The reason for my choice is that the *De interpretatione* is, if I am right, the most seriously misunderstood text in ancient semantics. If I can make out my case with regard to it, it will provide a valuable perspective on the other philosophers in question." (pp. 87-88)

(1) See e.g. Plato, *Laws* X 903b-d, Aristotle, *Pol.* 1253a19ff., and, for the Stoics, Plutarch, *St. Rep.* 1054E-F.

(2) Lucretius 4.823-57.

(3) See Long and Sedley (*The Hellenistic Philosophers*, 1987, section 19).

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Resumé : "Aristote dit au début du *De interpretatione* que les mots symbolisent des pensées, qui, à leur tour, ressemblent aux choses. Le présent article soutient qu'Aristote parle alors principalement de la signification des phrases entières et au mieux de façon secondaire de la sémantique des mots individuels. Cette proposition est défendue en attirant l'attention sur un changement dans la signification de « signe » et des termes apparentés ; changement qui a lieu au cours du premier chapitre, qui nous permet de séparer la manière dont les mots « signifient » des pensées (déclaratives, interrogatives, etc.) en les exprimant, de la manière plus étroitement sémantique dont on dit par conséquent qu'ils signifient des choses. La déclaration initiale célèbre d'Aristote ne trouve pas son application principale dans la grammaire rudimentaire des noms et des verbes qui suit dans les chapitres 2-3, mais plus loin dans le traité et surtout dans le chapitre 14, où elle est invoquée pour établir, dans la perspective de la dialectique, que la relation entre une

phrase et sa négation est la plus forte de toutes les contrariétés. On explique aussi l'insistance d'Aristote, dans ce même traité, sur le caractère conventionnel de la langue : car, dans des chapitres 8 et 11, c'est à cause du caractère conventionnel de la langue et de l'échec qui en résulte de toute tentative pour le langage de correspondre systématiquement à la distinction des choses entre elles, que ce qui est, d'un point de vue grammatical superficiel, une phrase simple peut s'avérer constituer en réalité deux ou plusieurs phrases, autrement dit, signifier (c'est-à-dire exprimer) deux ou plusieurs pensées différentes.

L'importance primordiale accordée par Aristote à la signification des phrases entières s'explique ainsi par le rôle du *De interpretatione* en tant qu'ouvrage subordonné à la dialectique, discipline pour laquelle la relation entre les paires d'affirmations contradictoires est fondamentale. En outre, en le comparant avec le lekton stoïcien, on montre que la prépondérance accordée par Aristote à la phrase entière reflète le cadre téléologique de sa pensée."

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"A la lumière des analyses qui précèdent, qu'en est-il maintenant du titre *peri hermeneias*? Ce titre correspond-il au contenu de l'ouvrage?

La question posée ne vise pas directement l'authenticité Aristotélicienne de la formule: il est vrai cependant, qu'un titre qui ne traduirait pas bien le contenu du traité, aurait peu de chances d'avoir été rédigé par le Stagirite. Par contre, il est probable que l'ouvrage ait reçu un certain titre de la part de son auteur et si le titre traditionnel correspond au contenu de l'écrit, il peut très bien remonter à l'auteur lui-même. Quoi qu'il en soit de la question d'authenticité, nous croyons pouvoir conclure que le titre donné recouvre bien le contenu du traité, dont le sujet principal est l'énonciation catégorique et ses composants. En se basant sur les analyses de Boèce et d'Ammonius, on peut dire que tous ces éléments correspondent à l'idée d'interprétation telle qu'elle est expliquée dans le traité:

1. L'énonciation y est conçue comme l'interprétation d'un contenu de pensée. Toutefois si le langage se rapporte directement à un objet pensé, il se réfère indirectement au réel: il en résulte que le discours énonciatif est aussi une interprétation de la réalité. Il l'est à un double niveau: le contenu particulier de chaque énonciation se rapporte à un sujet déterminé du monde et en exprime certaines caractéristiques; on peut donc le considérer comme un acte d'interprétation. Par ailleurs, il y a la structure même du

jugement, qui, elle aussi, est une interprétation à un niveau plus fondamental de la physionomie du réel.

2. Les noms et les verbes constituent à leur tour un acte d'interprétation. Selon Aristote, la signification des mots est conventionnelle: elle est le résultat de la vie en communauté, où les hommes sont amenés à se mettre d'accord sur des notions fondamentales de la vie morale et sociale. Ammonius croit que le sens des mots n'est pas purement artificiel, mais qu'il est adapté à la nature des choses. Quoi qu'il en soit, le fait d'appliquer au réel des noms et des verbes est un acte d'interprétation. Exprimer le réel dans les catégories du langage implique toujours un acte interprétatif.

La doctrine aristotélicienne sur la nature du langage justifie donc le titre de *peri hermeneias*."

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Premessa

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Parte seconda: Mauro Nasti De Vincentis: Interpretazione di al-Fārābī e interpretazione «farabiana». A proposito del commento di al-Fārābī a *De interpretatione* 9

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"This paper compares the views of a number of Arabic and thirteenth-century Latin commentators on Aristotle's *Peri Hermeneias* on the status of logic as a linguistic art and its relation to grammar. The discussion considers the commentators' general positions on the logician's treatment of linguistic topics, and their attempts to reconcile the dual claim of logic to be both a linguistic and a rational art. These general principles are then traced through the treatment of a number of particular themes in the *Peri Hermeneias*'s linguistic sections: The definition of the noun, the cases of the noun, and the indefinite or infinite noun (i.e., of the form non-X). The article concludes that, although there are basic differences between the Latin and Arabic traditions

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that of his teacher Syrianus, and in the course of which the authoritative status of *De interpretatione* as a carefully composed, syntagmatic work was itself put into question. Ammonius was concerned to establish the coherence of Int. 19 B 19-20 B 12. According to his interpretation, this section falls into two further sections, arranged around two types of logical sequences : the first section (19 B 19-20 A 6) is explained according to an interpretation that derives from Syrianus ; the second (20 A 20-20 B 13) recalls the canons of Proclus."

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23. ———. 2010. "Medieval Commentators on Future Contingents in *De Interpretatione* 9." *Vivarium. An International Journal for the Philosophy and Intellectual Life of the Middle Ages and Renaissance* no. 48:75-95.
Abstract: "This article considers three medieval approaches to the problem of future contingent propositions in chapter 9 of Aristotle's *De interpretatione*. While Boethius assumed that God's atemporal knowledge infallibly pertains to historical events, he was inclined to believe that Aristotle correctly taught that future contingent propositions are not antecedently true or false, even though they may be characterized as true-or-false. Aquinas also tried to combine the allegedly Aristotelian view of the disjunctive truth-value of future contingent propositions with the conception of all things being timelessly present to God's knowledge. The second approach was formulated by Peter Abelard who argued that in Aristotle's view future contingent propositions are true or false, not merely true-or-false, and that the antecedent truth of future propositions does not necessitate things in the world. After Duns Scotus, many late medieval thinkers thought like Abelard, particularly because of their new interpretation of contingency, but they did not believe, with the exception of John Buridan, that this was an Aristotelian view."
24. Magee, John. 1989. *Boethius on Signification and Mind*. Leiden: Brill.
Contents: Acknowledgements IX; Sigla X; Abbreviations and Editions XI; Introduction 1; I. Aristotle: *Peri Hermeneias* I, 16a3-9; 7; II. Boethius' Translation 49; III. Orandi Ordo 64; IV. Cogitabilis Oratio 93; Afterword 142;

Bibliography 150; Index Locorum 155; Index Nominum et Rerum 162-165.

"The present work is divided into four chapters, taking as its starting point the lines of Aristotle's *Peri Hermeneias* around which Boethius' theory of signification turns. The first chapter of the study plunges in *medias res*, and for that the reader's patience is requested. The Greek text is both difficult and compressed, and necessarily brings into consideration questions of the history of transmission and commentary, as well as numerous aspects of Aristotle's thought both in this and in other works. But since Boethius translated either all or part of the *Peri Hermeneias* before commenting upon it, and then revised the translation for the second commentary; and since in his translation, as in all translations, there is an element of "commentary" upon the meaning of the original, it has been thought necessary to come to a clear understanding of what Aristotle wrote before proceeding to the translation and commentaries. After careful examination of the Greek passage and of the questions it poses, there follows in the second chapter an analysis of Boethius' Latin translation of the same, and of the interpretation implicitly contained therein." (pp. 1-2)

25. ———. 2010. "On the Composition and Sources of Boethius' Second *Peri hermeneias* Commentary." *Vivarium* no. 48:7-54.

Abstract: "The paper is in three parts, prefaced by general remarks concerning Boethius' logical translations and commentaries: the text of the *Peri Hermeneias* as known to and commented on by Boethius (and Ammonius); the organizational principles behind Boethius' second commentary on the *Peri Hermeneias*; its source(s). One of the main purposes of the last section is to demonstrate that the *Peri Hermeneias* commentaries of Boethius and Ammonius are, although part of a common tradition, quite independent of one another, and special consideration is given to the question of how Boethius interpreted and

shaped the doxographical material concerning Aspasius, Herminus, and Alexander that had been handed down to him by Porphyry."

"Sifting through the interpretations of earlier commentators was painstaking and laborious, Porphyry's interpretation of 19b22-24 alone requiring, as we have seen, seventeen pages of commentary. By about the year 515 Boethius' attention must have been turning toward other projects, to new translations and commentaries, the theological tractates, logico-rhetorical monographs, and so on. If the *Peri Hermeneias* were allowed to consume so much time and energy, what would become of the rest of the *Organon* and Aristotle, not to mention Plato? Even for a treatise as rich and complex as the *Peri Hermeneias* Boethius may have had finally to calculate his "point of diminishing returns." He may have grown impatient with the project, his copy of Porphyry may have failed, or both. Had he known of the premature end that awaited him, he might have thought differently about how to weight the commentary, might have sought compensation in other projects for problems left unsolved in connection with the *Peri Hermeneias*; but as it is, he left a work which, despite its imperfections, has proved to be one of his most fascinating and influential." (p. 54)

26. ———. 2011. "Preliminary Observations on the Textual Tradition of Boethius' First *Peri Hermeneias* Commentary." In *Logic and Language in the Middle Ages: A Volume in Honour of Sten Ebbesen*, edited by Fink, Jakob Leth, Hansen, Heine and Mora-Márquez, Ana María 13-26. Leiden: Brill.

"In editing the first of Boethius' two commentaries on Aristotle's *Peri Hermeneias* Carl Meiser essentially worked from a single witness, F (below), which he ranked both *antiquissimus* and *optimus*. (1) Readings from three other munich manuscripts, e (MS Bayer. Staatsbibl. clm 14401, s. XI), M (below), and T (MS Bayer. Staatsbibl. clm 18479,

s.XI), he reported *perpetuo more* but with varying degrees of accuracy. (2) He further consulted two st. Gall manuscripts, G (below) and S (MS Stiftsbibl. 817, s. XI-XII) *omnibus locis paulo difficilioribus* — citing them only infrequently, however, in his critical apparatus. from *Peri Hermeneias* 17b20 on, F preserves excerpted lemmata, and Meiser correctly recognized that the supplemented versions found in other witnesses violate Boethius' intention. (3) But F is in fact neither *antiquissimus* nor *optimus*, and Meiser's edition suffers from a particular failure to distinguish between the three versions of Boethius' *Peri Hermeneias* translation, two of which form his commentary lemmata. Hence a full assessment of the evidence seems called for. In what follows, I hope to shed some light on certain salient characteristics of the textual tradition." (p. 13)

(1) Boethius, *Commentarii in librum aristotelis περι ερμηνείας, pars prior versionem continuam et primam editionem continens*, ed. C. Meiser (Leipzig: Teubner, 1877), pp. VIII-X.

(2) Cf. J. Magee, 'On the Composition and sources of Boethius' second *Peri Hermeneias* Commentary', *Vivarium* 48 (2010), 15, n. 32.

(3) Above, n. 1; cf. Aristotle, *De interpretatione vel Periermenias: Translatio Boethii*, ed. L. Minio-Paluello, AL 2.1 (Bruges: Desclée de Brouwer, 1965), pp. XI; LIII.

[MS F = Munich Bayer. Staatsbibl. clm 6374, s. IX
MS M = Munich Bayer. Staatsbibl. clm 14377, s. X-XI]

27. Mignucci, Mario. 1989. "Truth and modality in late antiquity: Boethius on future contingent propositions." In *Le teorie delle Modalità. Atti del Convegno internazionale di storia della logica*, edited by Corsi, Giovanni, Mangione, Corrado and Mugnai, Massimo, 47-78. Bologna: CLUEB.
28. ———. 1996. "Ammonius on Future Contingent Propositions." In *Rationality in Greek Thought*, edited by

Frede, Michael and Striker, Gisela, 279-310. Oxford: Clarendon Press.

29. ———. 1998. "Ammonius' sea battle." In *Ammonius: On Aristotle On Interpretation 9 with Boethius: On Aristotle On Interpretation 9*, edited by Blank, David L. and Kretzmann, Norman, 53-86. Ithaca: Cornell University Press.
30. ———. 2001. "Ammonius and the Problem of Future Contingent Truth." In *Ammonius and the Seabattle: Texts, Commentary and Essays*, edited by Gerhard, Seel, 247-284. Berlin: Walter de Gruyter.
31. Monteil, Jean-François. 1996. "De la traduction en arabe et en français d'un texte d'Aristote: le chapitre VII du *Peri Hermeneias*." *Bulletin d'Etudes Orientales* no. 48:57-76. "Les propositions indéterminées du chapitre VII de *Peri Hermeneias* sont des particulières traduites par des universelles fausses. La cause de cette bizarrerie est dans le maître, et non dans les traducteurs. Aristote mutile un système naturel de propositions dont l'intégrité est restaurée par l'hexagone de Robert Blanché. Celui-ci ajoute deux postes au carré: Y (quantité partielle) et U (exclusion de la quantité partielle). Le carré représente A (totalité) et E (quantité zéro), mais pas avec la tierce quantité Y. Or, la quantité partielle (Y) est essentielle: c'est celle des particulières naturelles contenant notoirement plus d'information que les particulières logiques. U (exclusion de la quantité partielle) est le signifié commun aux deux phrases qu'Aristote élimine du système naturel."
32. ———. 2004. "La transmission d'Aristote par les Arabes à la chrétienté occidentale: une trouvaille relative au *De Interpretatione*." *Revista Española de Filosofía Medieval* no. 11:181-195. "Some men are not white and Some men are white versus No man is white are illegitimately identified to the two pairs of logical contradictories constituting the logical square: A versus O and I versus E, respectively. Thus, the level of natural language and that of logic are confused. The unfortunate Aristotelian alteration is concealed by the

translation of propositions known as *indeterminates*. To translate these, which, semantically, are *particulars*, all scholars, except for Paul Gohlke, employ the two natural *universals* excluded by the Master! The work of Isador Pollak, published in Leipzig in 1913, [*Die Hermeneutik des Aristoteles in der Arabischen Übersetzung des Ishiik Ibn Honain*] reveals the origin of this nearly universal translation mistake: the Arabic version upon which Al-Farabi unfortunately bases his comment. In adding the vertices *Y* and *U* to the four ones of the square, the logical hexagon of Robert Blanché (*) allows for the understanding of the manner in which the logical system and the natural system are linked."

(*) *Structures Intellectuelles. Essai sur l'organisation systématique des concepts*, Paris: Vrin, 1966; *Raison et Discours. Défense de la logique réflexive*, Paris: Vrin, 1967.

33. ———. 2005. "Isidor Pollak et les deux traductions arabes différentes du *De interpretatione* d'Aristote." *Revue d'Études Anciennes* no. 107:29-46.

"Dans le chapitre VII du *De interpretatione*, Aristote mutile un système naturel de trois couples de contradictions naturelles. Il évince le couple où deux universelles naturelles "Les hommes sont blancs", "Les hommes ne sont pas blancs" s'opposent contradictoirement. Conséquence grave: les deux couples de contradictoires naturelles, qu'Aristote considère exclusivement, sont identifiés illégitimement aux deux couples de contradictoires logiques constituant le carré logique. Cette mutilation est dissimulée par la traduction des propositions dites "indéterminées". L'ouvrage d'Isidor Pollak, publié à Leipzig en 1913 (*Die Hermeneutik des Aristoteles in der arabischen Übersetzung des Ishak Ibn Honain, Abhandlungen für die Kunde des Morgenlandes*, 13,1), révèle l'origine de cette faute de traduction quasi universelle: la version arabe sur laquelle al-Farabi fonde son commentaire."

34. Mora-Márquez, Ana María 2011. "Peri hermeneias 16a3-8 : Histoire d'une rupture de la tradition interprétative dans le bas Moyen-Âge." *Revue Philosophique de la France et de l'Étranger* no. 136:67-84.
35. Normore, Calvin G. 1982. "Future Contingents." In *The Cambridge History of Later Medieval Philosophy. From the rediscovery of Aristotle to the disintegration of Scholasticism 1100-1600*, edited by Kretzmann, Norman, Kenny, Anthony and Pinborg, Jan. Cambridge: Cambridge University Press.
36. Rescher, Nicholas. 1963. "An Interpretation of Aristotle's Doctrine of Future Contingency and Excluded Middle." In *Studies in the History of Arabic Logic*, 43-54. Pittsburgh: University of Pittsburgh Press.
37. Rijk, Lambertus Marie de. 2003. "Boethius on *De interpretatione* (ch. 3): is he a reliable guide?" In *Boèce ou la chaîne des savoirs. Actes du Colloque International de la fondation Singer Polignac (Paris, 8-12 juin 1999)*, edited by Galonnier, Alain, 207-227. Paris: Peeters Publishers.
 "There can be no doubt whatsoever about Boethius's exceptional merits for transmitting Aristotle's logic to us. But while 'Aristotelian' logic is in many respects synonymous with 'Aristotelico-Boethian' logic, the question can be raised whether Aristotle himself was an 'Aristotelian'. To give just one example: from Lukasiewicz onwards there has been much debate among scholars about the telling differences between traditional syllogistic and that of the *Prior Analytics*. (1)
 In this paper I intend to deal with two specimens of Boethius's way of commenting upon Aristotle's text. They are found in his discussion of *De interpretatione*, chapters 2 and 3, which present Aristotle's views of *ónoma* and *rhema*. (2) One concerns the semantics of indefinite names, the other that of isolated names and verbs." p. 227
 (1) Jan Lukasiewicz, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Oxford, 1951. G. Patzig, *Aristotle's Theory of the Syllogism. A logico-*

philological study of Book A of the Prior Analytics,
Dordrecht, 1969.

(2) *Rhema* properly stands for 'what is said of', including not only our 'verb' but also adjectives, when used in attributive position. One should realise, however, that 'verb' refers to a word class, rather than a semantic or syntactical category, as *rhema* does.

"Conclusion. Returning now to Boethius' manner of commenting upon Aristotle's texts, the following points can be made:

[1] In the wake of Ammonius, (3) Boethius explains [*De int.*] 16b22-25 on the apophantic level, i.e. in terms of statement-making, instead of framing significative concepts, i.e. on the onomastic level.

[2] Whereas in Ammonius' report of the predecessors, Alexander and Porphyry, as well as his own exposition of the issue, there are many clues to the previous alternative reading and interpretation on the onomastic level, Boethius does not even refrain from cleansing the text (including his 'quotations'), by changing, at any occurrence, '*ens*' into '*est*'.

[3] In doing so, Boethius decisively influenced the commentary tradition on account of the purport of *De int.* 3, 16b19-25. He effectively contributed to the common verdict on this paragraph in terms of 'a curious medley'.

[4] As far as the semantics of the indefinite verb (3, 16b14-15) is concerned, Boethius' apparently adhering to the so-called 'Ammonii recensio' was far less disastrous for the common understanding of Aristotle on this score, and, in effect, merely provided us with some stimulating Medieval discussions of the semantics of term infinitation.

[5] Finally by way of speculative surmise, it might be suggested that both the fact that Boethius dealt with the 'Ammonii recognise' without reading it in his lemma of 16b14-15, as well as his rather ruthlessly interfering in the quotations of the pre-Ammonian sources, should make it more plausible that Boethius had extensive, but incomplete

marginal notes to his Greek text of Aristotle at his disposal, rather than a full copy of Ammonius' commentary (or those of other Greek commentators).

To comment upon Aristotle's work naturally includes developing his lore. But nothing can ever guarantee that this will happen *ad metem auctoris*. (4)"

(3) It is unmistakably plain that in *De int.* ch. 3, Boethius is strongly influenced by what he read in Ammonius (or in marginal notes on Ammonius' view).

(4) Cf. the interesting paper on this subject by Frans A.J. de Haas, "Survival of the Fittest? Mutations of Aristotle's Method of Inquiry in Late Antiquity" (forthcoming).

[Conference: *The Dynamics of Natural Philosophy in the Aristotelian Tradition (and beyond)*, Nijmegen, 16-20 August 1999.]

38. Schneider, Jakob Hans Josef. 1994. "Al-Farabis Kommentar zu 'De interpretatione' des Aristoteles. Ein Beitrag zur Entwicklung der Sprachphilosophie im Mittelalter." In *Scientia und ars im Hoch- und Spätmittelalter*, 687-738. Berlin: Walter de Gruyter.
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40. Sillitti, Giovanna. 1980. *Tragelaphos. Storia di una metafora e di un problema*. Napoli: Bibliopolis.
41. Teixidor, Javier. 1996. "L'introduction au *De interpretatione* chez Proba et Paul le Perse." In *Symposium Syriacum VII. Uppsala University, Department of Asian and African Languages, 11-14 August 1996*, edited by Lavenant, René, 293-301. Roma: Pontificio Istituto Orientale.
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44. Verbeke, Gérard. 1956. "Ammonius et saint Thomas. Deux commentaires sur le *Peri hermeneias* d'Aristote." *Revue Philosophique de Louvain* no. 54:228-253.
"La comparaison entre le commentaire d'Ammonius, dans la traduction latine de Guillaume de Moerbeke, et celui de saint Thomas, permet de préciser dans quelle mesure saint Thomas s'inspire d'Ammonius. Édition critique du texte latin du *Peri hermeneias* d'Aristote, dans la traduction de Moerbeke du commentaire d'Ammonius, avec références au texte des manuscrits grecs."
45. ———. 1991. "Interprétation et langage dans la tradition aristotélicienne." In *Historia philosophiae Medii Aevi. Studien zur Geschichte der Philosophie des Mittelalters*, edited by Mojsisch, Burkhard and Pluta, Olaf, 1029-1045. Amsterdam: R. Grüner.
"A la lumière des analyses qui précèdent, qu'en est-il maintenant du titre *peri hermeneias*? Ce titre correspond-il au contenu de l'ouvrage?
La question posée ne vise pas directement l'authenticité Aristotélicienne de la formule: il est vrai cependant, qu'un titre qui ne traduirait pas bien le contenu du traité, aurait peu de chances d'avoir été rédigé par le Stagirite. Par contre, il est probable que l'ouvrage ait reçu un certain titre de la part de son auteur et si le titre traditionnel correspond au contenu de l'écrit, il peut très bien remonter à l'auteur lui-même. Quoi qu'il en soit de la question d'authenticité, nous croyons pouvoir conclure que le titre donné recouvre bien le contenu du traité, dont le sujet principal est l'énonciation catégorique et ses composants. En se basant sur les analyses de Boèce et d'Ammonius, on peut dire que tous ces éléments correspondent à l'idée d'interprétation telle qu'elle est expliquée dans le traité:
1. L'énonciation y est conçue comme l'interprétation d'un contenu de pensée. Toutefois si le langage se rapporte directement à un objet pensé, il se réfère indirectement au réel: il en résulte que le discours énonciatif est aussi une

interprétation de la réalité. Il l'est à un double niveau: le contenu particulier de chaque énonciation se rapporte à un sujet déterminé du monde et en exprime certaines caractéristiques; on peut donc le considérer comme un acte d'interprétation. Par ailleurs, il y a la structure même du jugement, qui, elle aussi, est une interprétation à un niveau plus fondamental de la physionomie du réel.

2. Les noms et les verbes constituent à leur tour un acte d'interprétation. Selon Aristote, la signification des mots est conventionnelle: elle est le résultat de la vie en communauté, où les hommes sont amenés à se mettre d'accord sur des notions fondamentales de la vie morale et sociale. Ammonius croit que le sens des mots n'est pas purement artificiel, mais qu'il est adapté à la nature des choses. Quoi qu'il en soit, le fait d'appliquer au réel des noms et des verbes est un acte d'interprétation. Exprimer le réel dans les catégories du langage implique toujours un acte interprétatif.

La doctrine aristotélicienne sur la nature du langage justifie donc le titre de *peri hermeneias*."

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49. Zimmermann, Albert. 1971. "'Ipsum enim ('est') nihil est" (Aristoteles, Periherm. I, c.3). Thomas von Aquin über die Bedeutung der Kopula." In *Der Begriff der Repraesentatio im Mittelalter*, edited by Zimmermann, Albert, 282-295. Berlin: Walter de Gruyter.

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Aristotle's *Prior Analytics*: the Theory of Categorical Syllogism

INTRODUCTION: MODERN INTERPRETATIONS OF ARISTOTLE'S SYLLOGISTIC

"When modern logicians in the 1920s and 1930s first turned their attention to the problem of understanding Aristotle's contribution to logic in modern terms, they were guided both by the Frege-Russell conception of logic as formal ontology and at the same time by a desire to protect Aristotle from possible charges of psychologism. They thought they saw Aristotle applying the informal axiomatic method to formal ontology, not as making the first steps into formal epistemology. They did not notice Aristotle's description of deductive reasoning. Ironically, the formal axiomatic method (in which one explicitly presents not merely the substantive axioms but also the deductive processes used to derive theorems from the axioms) is incipient in Aristotle's presentation.

Partly in opposition to the axiomatic, ontically-oriented approach to Aristotle's logic and partly as a result of attempting to increase the degree of fit between interpretation and text, logicians in the 1970s working independently came to remarkably similar conclusions to the effect that Aristotle indeed had produced the first system of formal deductions. They concluded that Aristotle

had analyzed the process of deduction and that his achievement included a system of natural deductions including both direct and indirect deductions which, though simple and rudimentary, was semantically complete.

Where the interpretations of the 1920s and 1930s attribute to Aristotle a system of propositions organized deductively, the interpretations of the 1970s attribute to Aristotle a system of deductions, extended deductive discourses, concatenations of propositions, organized epistemically. The logicians of the 1920s and 1930s take Aristotle to be deducing laws of logic from axiomatic origins; the logicians of the 1970s take Aristotle to be describing the process of deduction and in particular to be describing deductions themselves, both those deductions that are proofs based on axiomatic premises and those deductions that, though deductively cogent, do not establish the truth of the conclusion but only that the conclusion is implied by the premise-set.

Thus, two very different and opposed interpretations had emerged, interestingly both products of modern logicians equipped with the theoretical apparatus of mathematical logic. The issue at stake between these two interpretations is the historical question of Aristotle's place in the history of logic and of his orientation in philosophy of logic. This paper affirms Aristotle's place as the founder of logic taken as formal epistemology, including the study of deductive reasoning. A by-product of this study of Aristotle's accomplishments in logic is a clarification of a distinction implicit in discourses among logicians—that between logic as formal ontology and logic as formal epistemology.

Aristotle's Logic: New Goals, New Results

Our understanding of Aristotle's logic has increased enormously in the last sixty years. It is gratifying to review the cascade of progress beginning with the independently achieved but remarkably similar advances reported in 1929 by Jan Łukasiewicz and in 1938 by James Wilkinson Miller. Penetrating examination and critical evaluation of the Łukasiewicz-Miller viewpoint in the

1950s and 1960s set the stage for work in the early 1970s by Timothy Smiley and myself. Subsequent work in the late 1970s and early 1980s by various people including Timothy Smiley, Robin Smith, Michael Scanlan and myself can be seen as culminating, at least for the moment, in the 1989 translation and commentary on *Prior Analytics* by Robin Smith." (pp. 9-10)

From: John Corcoran, "The Founding of Logic. Modern Interpretations of Aristotle's Logic", *Ancient Philosophy*, 14, 1994, pp. 9-24.

"Jan Łukasiewicz, by his own account, entered the lists in 1923 as an interpreter of ancient logic from the standpoint of modern formal logic. In that year he began defending his view of the contrast of Stoic logic with Aristotelian logic; this view appeared in print for the first time in 1930.(1) This was followed by the Polish version in 1934, and the German in 1935, of his landmark paper, 'On the History of the Logic of Propositions' [1967]. During the same period Łukasiewicz was lecturing on Aristotle's syllogistic. An authorized version of his lectures on this and other logical topics was published by students at the University of Warsaw in 1929, republished in Warsaw in 1958, and finally translated into English in 1963 under the title *Elements of Mathematical Logic* [1963]. Łukasiewicz elaborated his researches until he issued in 1951 his now famous monograph *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic* [1951]. A second edition, enlarged but not revised, appeared in 1957, its author's death having occurred in the previous year.(*)

Łukasiewicz thus has held the field for nearly half a century. Questions have been raised about some details of his interpretation, and corrections have been made of some of his mistakes in matters of fact, but, so far as I know, no one had brought a direct challenge against the main lines of Łukasiewicz's interpretation of Aristotle's syllogistic and its place in ancient

logic until John Corcoran did so in 'A Mathematical Model of Aristotle's Syllogistic' [1973]. Indeed, so spectacular a *tour de force* was Łukasiewicz's book that, despite his own protestations that he was setting out the system merely "in close connexion with the ideas set forth by Aristotle himself" ([1951], p. 77) and "on the lines laid down by Aristotle himself" ([1951], p. VIII), his account has gained wide acceptance as the definitive presentation of Aristotle's syllogistic, and some writers lead one to believe that Aristotle's system is no more and no less than what Łukasiewicz proposes.

Łukasiewicz's view, very briefly put, is this: The logic of Aristotle is a theory of the relations A, E, I, and O (in their mediaeval senses) in the field of universal terms ([1951], p. 14). It is a theory of special relations, like a mathematical theory ([1951], p. 15). As a logic of terms, it presupposes a more fundamental logic of propositions, which, however, was unknown to Aristotle and was discovered by the Stoics in the century after him ([1951], p. 49). Aristotle's theory is an axiomatized deductive system, in which the reduction of the other syllogistic moods to those of the first figure is to be understood as the proof of these moods as theorems by means of the axioms of the system ([1951], p. 44). Corcoran has proposed, on the other hand, that Aristotle's syllogistic is not an axiomatic science but rather a natural deduction system, and that the theory is itself fundamental, presupposing neither the logic of propositions nor any other underlying logic.

Corcoran's proposals have a good deal to recommend them. First, Corcoran provides a faithful reconstruction of Aristotle's method. Although Łukasiewicz gives a system that does arrive at Aristotle's results, obtaining and rejecting laws corresponding to the moods which Aristotle obtains and rejects, his derivations, by substitution and detachment from axioms, have nothing in common with Aristotle's own method. Indeed, Łukasiewicz must say that Aristotle's proposals about method are wrong, and that Aristotle did not and could not use the technique of perfecting syllogisms, which Aristotle claims over and over again that he is

using.(2) Corcoran, on the other hand, not only makes perfect sense of the doctrine of perfecting syllogisms, but he is willing to take Aristotle at his word instead of being content to elaborate a system allegedly in close connexion with Aristotle's ideas. The upshot is that Corcoran succeeds, as Łukasiewicz did, in reproducing Aristotle's results, and he succeeds, as Łukasiewicz did not, in reproducing Aristotle's method step by step, so that the annotated deductions of his system D are faithful translations of Aristotle's exposition. Corcoran's concern for method is prompted by his belief that Aristotle shared this concern. I think there can be no doubt that he is correct. Aristotle sets out his method in detail which if concise is yet minute, and when, at the beginning of Chapter XXX of the first book of the *Priora* (46a4), he summarizes his work so far, he speaks not of the same results in philosophy and every kind of art and study whatsoever, but of the same method (οδός) in all these branches of inquiry. Corcoran's interpretation also has the virtue of making sense of Aristotle's views concerning the place of syllogistic in his doctrine as a whole. While Łukasiewicz apparently held that syllogistic was a science which must take its place beside the other sciences in the Aristotelian scheme, Corcoran proposes to take syllogistic as the underlying logic of the demonstrative sciences. Łukasiewicz held further that syllogistic itself presupposes propositional logic as an underlying logic -- of which Aristotle, however, was ignorant. Corcoran, by contrast, suggests that syllogistic is a fundamental logical system, presupposing no other." (pp. 133-135)

Notes

(*) Łukasiewicz, Jan, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Oxford Univ. Press, Oxford, 1951. Second ed. enlarged, 1957.

(1) Łukasiewicz, Jan, 'Philosophische Bemerkungen zu mehrwertigen Systemen des Aussagenkalküls', *Comptes rendus des seances de la Société des Sciences et des Lettres de Varsovie*

23 (1930). English transl. by H. Weber in McCall *Polish Logic 1920-1939*, Oxford University Press, Oxford 1967 as 'Philosophical Remarks on Many-Valued Systems of Propositional Logic', pp. 40-65. See Storrs McCall *Polish Logic 1920-1939*, p. 69, n. 1, for Łukasiewicz's remark concerning the date of his first proposals.

(2) Łukasiewicz [1951], p. 44. For texts in *An. Pr.* and *An. Post.* see Corcoran John, 'A Mathematical Model of Aristotle's Syllogistic', *Archiv für Geschichte der Philosophie* 55 (1973), 191-219.

From: Mary Mulhern, "Corcoran on Aristotle's Logical Theory", in: John Corcoran (ed.), *Ancient Logic and Its Modern Interpretations. Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972*, Dordrecht: Reidel 1974, pp. 133-148.

CONTEMPORARY EVALUATIONS OF ARISTOTLE'S LOGIC

"As a kind of summary of our research we present a review of what we take to be the fundamental achievements of Aristotle's logical theory. In the first place, he clearly distinguished the role of deduction from the role of experience (or intuition) in the development of scientific theories. This is revealed by his distinction between the axioms of a science and the logical apparatus used in deducing the theorems. Today this would imply a distinction between logical and nonlogical axioms; but Aristotle had no idea of logical axioms (but cf. 77a22-25). Indeed, he gave no systematic discussion of logical truth (*Axx* is not even mentioned once). In the second place, Aristotle developed a natural deduction system which he exemplified and discussed at great length. Moreover, he formulated fairly intricate

metamathematical results relating his central system to a simpler one. It is also important to notice that Aristotle's system is sound and strongly complete. In the third place, Aristotle was clear enough about logical consequence so that he was able to discover the method of counter instances for establishing invalidity. This method is the cornerstone of all independence (or invalidity) results, though it probably had to be rediscovered in modern times (cf. Cohen and Hersh). In the fourth place, his distinction between perfect and imperfect syllogisms suggests a clear understanding of the difference between deducibility and implication -- a distinction which modern logicians believe to be their own (cf. Church, p. 323, fn. 529). In the fifth place, Aristotle used principles concerning form repeatedly and accurately, although it is not possible to establish that he was able to state them nor is even clear that he was consciously aware of them as logical principles.

The above are all highly theoretical points -- but Aristotle did not merely theorize; he carried out his ideas and programs in amazing detail despite the handicap of inadequate notation. In the course of pursuing details Aristotle originated many important discoveries and devices. He described indirect proof. He used syntactical variables (α , β , etc.) to stand for content words -- a device whose importance in modern logic has not been underestimated. He formulated several rules of inference and discussed their interrelations.

Philosophers sometimes say that Aristotle is the best introduction to philosophy. This is perhaps an exaggeration. One of the Polish logicians once said that the *Analytics* is the best introduction to logic. My own reaction to this remark was unambiguously negative -- the severe difficulties in reading the *Analytics* form one obstacle and I felt then that the meager results did not warrant so much study. After carrying out the above research I can compromise to the following extent. I now believe that Aristotle's logic is rich enough, detailed enough, and sufficiently representative of modern logics that a useful set of introductory

lectures on mathematical logic could be organized around what I have called the main Aristotelian system.

From a modern point of view, there is only one mistake which can sensibly be charged to Aristotle: his theory of propositional forms is very seriously inadequate. It is remarkable that he did not come to discover this for himself, especially since he mentions specific proofs from arithmetic and geometry. If he had tried to reduce these to his system he may have seen the problem (cf. Mueller, pp. 174-177). But, once the theory of propositional forms is taken for granted, there are no important inadequacies attributable to Aristotle, given the historical context. Indeed, his work is comparable in completeness and accuracy to that of Boole and seems incomparably more comprehensive than the Stoic or medieval efforts. It is tempting to speculate that it was the oversimplified theory of propositional forms that made possible the otherwise comprehensive system. A more adequate theory of propositional forms would have required a much more complicated theory of deduction -- indeed, one which was not developed until the present era." (pp. 122-123)

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From: John Corcoran, Aristotle's Natural Deduction System. In *Ancient Logic and Its Modern Interpretations*, edited by John Corcoran, Dordrecht: Reidel 1974, pp. 85-131.

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"Although many commentators have summarized chapter 38 of *Analytica Priora I* as if it was perfectly clear to them, I have not found their explanations satisfactory enough. In fact, I think Aristotle's text needs badly some sort of clarification that makes it meaningful to modern logicians. In this note I wish to propose one such reconstruction."

2. Bäck, Allan. 1982. "Syllogisms with Reduplication in Aristotle." *Notre Dame Journal of Formal Logic* no. 23:453-458.

"*Prior Analytics* 1.38 is a difficult text that offers a way of handling qua propositions in formal syllogistic. By 'qua proposition' I mean a proposition that contains a qualifying term, phrase, or clause. Many such propositions have a qua connector like 'qua', 'insofar as', 'in virtue of the fact that',

'with respect to', although in some cases a construction like an accusative of respect occurs instead of an explicit connective.(1) Still, all qua propositions may be paraphrased by explicit qua connectives. So the class of qua propositions is a grammatical class of propositions of the form 'S is P qua M' The *Prior Analytics* chapter deals with a specific logical type of qua propositions, and its syllogistic properties.(2)"

(1) Alexander of Aphrodisias, *In Aristotelis Analyticorum Priorum Librum I Commentaria*, ed., Wallies, Berlin, 1883.

(2) Alexander of Aphrodisias, *Themistius, Quae Fertur In Analyticorum Priorum Librum I Paraphrasis*, ed., Wallies, Berlin, 1883.

3. ———. 1996. *On Reduplication. Logical Theories of Qualification*. Leiden: Brill.

"This work deals with the logical properties of the 'qua' connective, "that treacherous little word 'as'." This connective is represented by many expressions in ordinary language, such as 'insofar as', 'in virtue of, and 'in the sense that'. Traditionally, a use of this connective was called a reduplication. I shall trace the development of the theory of reduplication. As I shall show, this theory has its roots in various passages where Aristotle discusses 'qua' propositions. Islamic and Latin medieval philosophers then contributed to the topic. From all this there arose a theory of 'qua' propositions, or a theory of reduplication, in the high medieval period (1250-1350). Although there are of course different philosophers with different views on reduplication in that period, it will become clear that their views are extremely similar, and that it makes sense to talk of the rise of a single theory' of reduplication. Indeed, the similarity of their views is due to their using Aristotle's works as a common reference point: They all heed what Aristotle says about 'qua' propositions, and attempt to offer analyses that

demonstrate the truth of those '*qua*' propositions that Aristotle (as well as others in the Aristotelian tradition) asserts and the validity of inferences involving '*qua*' propositions that he maintains.

So I shall be dealing with propositions of form 'S is P *qua* M', which, dropping the italics and the single quotes, I shall henceforth call '*qua* propositions'. '*Qua*' will represent the type of the connective, which has different grammatical forms. When '*qua*' appears in italics, it is meant to be the particular connective, '*qua*'.

The program that I shall follow is this: First, I shall consider those passages in which Aristotle discusses the use of *qua* phrases and propositions. Next, I shall discuss Islamic philosophers, who wrote about *qua* propositions while commenting on those passages in Aristotle. Then I shall consider Latin medieval philosophers of the period of the old logic, when the *Analytics* and the *Sophistical Refutations*, which contain important passages on *qua* propositions, were at best not well known. Next, I shall discuss various versions of what may be loosely called the theory of reduplication. I shall consider various philosophers of the High Middle Ages on the following topics: determination, or the qualification of a sentence by a modifier; the fallacy of *secundum quid es simpliciter*; the exposition of reduplicative propositions; the conversion of reduplicative propositions; the reduplicative syllogistic; the supposition of terms in *qua* propositions. I shall also discuss certain uses to which the theory of reduplication was put: notably, the Incarnation, the nominalist reduction of abstract terms, and supposition theory. Next, I shall discuss the post-medieval period, where the medieval theory of reduplication was codified and developed further. I shall consider there the classifications and analysis of *qua* propositions, the formal features of the logical types distinguished, and applications, including Leibniz's extensive use of *qua* propositions in his writings. I shall

conclude with a survey of current work on qua propositions. Finally, I shall summarize the historical development of the theory of reduplication, offer what I consider to be the best version of that theory, and note some applications of it." (pp. XV-XVI)

4. Barker, Evelyn M. 1984. "Unneeded Surgery on Aristotle's "Prior Analytics"." *Notre Dame Journal of Formal Logic* no. 25:323-331.

"The article takes issue with Ross's bracketing of lines 45a9-16 of Aristotle's "Prior Analytics" I 28 because they involve Aristotle in an "elementary logical error." Describing Aristotle's "method of identities" for finding syllogistic premises, I point out the lines contain an essential leg of Aristotle's argument that this method handles all cases in which the incompatibility between the attributes of a subject e and a predicate a generates a syllogistic conclusion that A does not belong to some E. Also, Aristotle's claim that incompatibility of attributes in such cases always resolves into identity of attributes is valid."

5. Barnes, Jonathan. 1981. "Proof and the Syllogism." In *Aristotle on Science. The "Posterior Analytics". Proceedings of the Eighth Symposium Aristotelicum Held in Padua from September 7 to 15, 1978*, edited by Berti, Enrico, 17-59. Padova: Antenore.

6. ———. 1999. "Grammar on Aristotle's Terms." In *Rationality in Greek Thought*, edited by Frede, Michael and Striker, Gisela, 175-202. Oxford: Clarendon Press.

"However that may be, Aristotelian syllogistic concerned itself exclusively with monadic predicates. Hence it could not begin to investigate multiple quantification. And that is why it never got very far. None the less, the underlying grammar of Aristotle's logic did not in itself block the path to

polyadicity. The later Peripatetics were conservative creatures and they lacked logical imagination. Moreover, Aristotle himself had assured them that his syllogistic was adequate for all serious scientific needs. As for Aristotle, his service to logic is nonpareil, and it would be grotesque to hide him for lack of inventiveness. It is true that, in logical grammar, he did not climb above the level which he attained in the *de Interpretatione*. But the *Analytics* does not represent a fatal, or even a new, grammatical excursion. And the story of Aristotle's fall, like the story of the fall of Adam, is a myth."

7. Berka, Karel. 1991. "La Syllogistique Aristotélicienne, Reconstruction Historico-Logique." In *Penser Avec Aristote*, edited by Sinaceur, Mohammed Allal, 429-432. Paris: Éditions érès.
8. Boger, George. 2001. "The Modernity of Aristotle's Logic." In *Aristotle and Contemporary Science. Vol. II*, edited by Sfendoni-Mentzou, Demetra, Hattiangadi, Jagdish and Johnson, David M., 97-112. Bern: Peter Lang.

"Summary.

We have identified five aspects of Aristotle's syllogistic to highlight the remarkable modernity of his logical investigations: (1) Aristotle took logic to be a formal part of epistemology. A logic is an instrument for establishing knowledge of logical consequence; this is a principal concern of the science of logic. (2) *Prior Analytics* is a metalogical treatise on the syllogistic deduction system. Aristotle exhaustively treated all possible combinations of elemental "syllogistic" argument patterns to determine which have only valid argument instances. (3) Aristotle recognised the epistemic efficacy of certain elemental argument patterns having only valid instances, and he explicitly formulated them as rules of natural deduction in corresponding sentences. (4) *Prior Analytics* is a proof-

theoretic treatise in which Aristotle described a natural deduction system and demonstrated certain of the logical relationships among syllogistic rules. In fact, Aristotle modelled his syllogistic in a rudimentary way for this purpose. One important metasystematic result is to have established the independence of a set of deduction rules. Finally, (5) Aristotle worked with a notion of substitution sufficient for distinguishing logical syntax and semantics. In this connection he also distinguished validity from deducibility sufficiently well to note the completeness of his logic.

Our reading of *Prior Analytics* takes Aristotle to have treated the process of deduction much as modern mathematical logicians do and not to have been confused about some fundamental matters of logic. Least of all was he confused, as some commentators believe, about a distinction between "following necessarily" and "being necessary," both in respect of the distinction between a *syllogismos* or a deduction and a demonstration and of the distinction between assertoric logic and modal logic.

Aristotle clearly distinguished between (1) a given sentence's following necessarily from other given sentences and (2) a given sentence denoting a state of affairs to be necessary (or possible). Seeing that he was concerned with the deduction process helps us to avoid such an error. In any case, Aristotle recognised that, while the conclusion of a given argument follows necessarily from its premises, this necessity might not be evident to a participant. He knew that the epistemic process of deduction produces knowledge, or makes evident, that a given sentence follows necessarily from other given sentences. He considered the product of this epistemic process to be an argumentation that includes a deductive chain of reasoning in addition to the premises and conclusion. He recognised using deduction rules in the epistemic process for establishing validity, and that this process can be applied in a purely

mechanical and computational way. Furthermore, Aristotle distinguished (1) the subject matter of a given argument from (2) the use to which a given argument might be put from (3) the varying expertise of a participant. All these matters are distinct from (4) the formal matters underlying any of them. And precisely to examine these formal matters was his project in *Prior Analytics*. In this connection, then, we understand Aristotle to have distinguished two kinds of knowledge that cannot be otherwise: (1) knowledge of what is true or false, which pertains to sentences, and (2) knowledge of what valid or invalid, which pertains to arguments." pp. 110-111

9. Clark, Michael. 1980. *The Place of Syllogistic in Logical Theory*. Nottingham: University of Nottingham Press.
10. Corcoran, John. 1972. "Completeness of an Ancient Logic." *Journal of Symbolic Logic* no. 37:696-702.
11. ———. 1973. "A Mathematical Model of Aristotle's Syllogistic." *Archiv für Geschichte der Philosophie* no. 55:191-219.

"Our purpose in the present article is to present a mathematical model designed to reflect certain structural aspects of Aristotle's logic. Accompanying the presentation of the model is an interpretation of certain scattered parts of the *Prior* and *Posterior Analytics*. Although our interpretation does not agree in all respects with those previously put forth, the present work would have been impossible without the enormous ground work of previous scholars - especially Jenkinson, Łukasiewicz and W. D. Ross - to whom we are deeply grateful.

Our interpretation restores Aristotle's reputation as a logician of consummate imagination and skill. Several attributions of shortcomings and logical errors to Aristotle are seen to be without merit. Aristotle's logic is found to be

self-sufficient in several senses. In the first place, his theory of deduction is logically sound in every detail. (His indirect deductions' have been criticized, but incorrectly on our account.) In the second place, Aristotle's logic presupposes no other logical concepts, not even those of propositional logic. In the third place, the Aristotelian system is seen to be complete in the sense that every valid argument statable in his system admits of a deduction within his deductive system, i. e. every semantically valid argument is deducible. In the present paper we consider only Aristotle's theory of non-modal logic which has been called "the theory of the assertoric syllogism" and "Aristotle's syllogistic." Aristotle presents the theory almost completely in Chapters 1, 2, 4, 5 and 6 of the first book of *Prior Analytics*, although it presupposes certain developments in previous works - especially the following two : first, a theory of form and meaning of propositions having an essential component in *Categories* (Ch. 5, esp. 2a 34- 2b 7) ; second, a doctrine of opposition (contradiction) more fully explained in *De Interpretatione* (Ch. 7, and cf. Ross, p. 3)." p. 191

12. ———. 1974. "Aristotelian Syllogisms: Valid Arguments or True Universalized Conditionals?" *Mind* no. 83:278-281.
13. ———. 1974. "Aristotle's Natural Deduction System." In *Ancient Logic and Its Modern Interpretations. Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972*, edited by Corcoran, John, 85-131. Dordrecht: Reidel.

"In the present article we attempt to show that Aristotle's syllogistic is an underlying logic which includes a natural deductive system and that it is not an axiomatic theory as had previously been thought. We construct a mathematical model which reflects certain structural aspects of Aristotle's logic and we examine both the mathematical properties of the model and the relation of the model to the system of

logic envisaged in certain scattered parts of *Prior* and *Posterior Analytics*.

Our interpretation restores Aristotle's reputation as a logician of consummate imagination and skill. Several attributions of shortcomings and logical errors to Aristotle are shown to be without merit. Aristotle's logic is found to be self-sufficient in several senses. In the first place, his theory of deduction is logically sound in every detail. (His indirect deductions have been criticized, but incorrectly on our account.) In the second place, Aristotle's logic presupposes no other logical concepts, not even those of propositional logic. In the third place, the Aristotelian system is seen to be complete in the sense that every valid argument expressible in his system admits of a deduction within his deductive system; i.e., every semantically valid argument is deducible.

There are six sections in this article. The first section includes methodological remarks, a preliminary survey of the present interpretation and a discussion of the differences between our interpretation and that of Łukasiewicz. The next three sections develop the three parts of the mathematical model. The fifth section deals with general properties of the model and its relation to the Aristotelian system. The final section contains conclusions."

p. 85

"As a kind of summary of our research we present a review of what we take to be the fundamental achievements of Aristotle's logical theory. In the first place, he clearly distinguished the role of deduction from the role of experience (or intuition) in the development of scientific theories. This is revealed by his distinction between the axioms of a science and the logical apparatus used in deducing the theorems. Today this would imply a distinction between logical and nonlogical axioms; but Aristotle had no idea of logical axioms (but cf. 77a22-25). Indeed, he gave no systematic discussion of logical truth

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Philosophers sometimes say that Aristotle is the best introduction to philosophy. This is perhaps an exaggeration. One of the Polish logicians once said that the *Analytics* is the best introduction to logic. My own reaction to this remark was unambiguously negative -- the severe

difficulties in reading the *Analytics* form one obstacle and I felt then that the meager results did not warrant so much study. After carrying out the above research I can compromise to the following extent. I now believe that Aristotle's logic is rich enough, detailed enough, and sufficiently representative of modern logics that a useful set of introductory lectures on mathematical logic could be organized around what I have called the main Aristotelian system.

From a modern point of view, there is only one mistake which can sensibly be charged to Aristotle: his theory of propositional forms is very seriously inadequate. It is remarkable that he did not come to discover this for himself, especially since he mentions specific proofs from arithmetic and geometry. If he had tried to reduce these to his system he may have seen the problem (cf. Mueller, pp. 174-177).

But, once the theory of propositional forms is taken for granted, there are no important inadequacies attributable to Aristotle, given the historical context. Indeed, his work is comparable in completeness and accuracy to that of Boole and seems incomparably more comprehensive than the Stoic or medieval efforts. It is tempting to speculate that it was the oversimplified theory of propositional forms that made possible the otherwise comprehensive system. A more adequate theory of propositional forms would have required a much more complicated theory of deduction -- indeed, one which was not developed until the present era." p. 130-131

14. ———. 1989. "Argumentations and Logic." *Argumentation* no. 3:17-43.
 15. ———. 1994. "The Founding of Logic. Modern Interpretations of Aristotle's Logic." *Ancient Philosophy* no. 14:9-24.
- "Conclusion.

The tendency of interpreters to find an epistemically-oriented theory in Aristotle has been overwhelming. With the exception of James Wilkinson Miller's 1938 book and the writings of Jan Łukasiewicz and those directly influenced by these two, few interpreters have found a theory of formal ontology in Aristotle's *Prior Analytics*. Down through the ages, with these exceptions, interpreters have agreed that *Prior Analytics* is about methods of determining validity and invalidity of arguments. People studied *Prior Analytics* in order to learn more about deductive reasoning and in order to improve their own reasoning skills.

Despite the overwhelming tendency to interpret the syllogistic epistemically it wasn't until the early 1970s that it occurred to anyone to wonder whether Aristotle had a developed theory of deductive reasoning with a well worked-out system of deductions comparable in rigor and precision with the systems then familiar from mathematical logic. Of the logicians that studied *Prior Analytics* from this point of view, two of them published articles in same twelve-month period with remarkably similar systems affirming in clear and unequivocal terms the epistemic nature of *Prior Analytics*: Corcoran 1972 and Smiley 1973.

The simpler of the two articles holds that Aristotle's theory of deductions recognizes two kinds of extended deductions of conclusions from arbitrarily large premise sets: direct deductions and indirect deductions. A direct deduction of a conclusion from given premises begins with the premises and proceeds by chaining together simple one-premise and two-premise inferences until the conclusion is reached. An indirect deduction of a given conclusion from given premises is in effect a direct deduction of a pair of contradictory opposites from the premises augmented by the contradictory opposite of the conclusion. This view is spelled out in more detail in the introduction to Smith's 1989 translation of Aristotle's *Prior Analytics*.

According to the ontic interpretation the syllogistic is a system of true propositions about inclusional relations among classes. It is a system which is organized deductively, axioms followed by deduced theorems, by employment of an underlying logic never explicitly mentioned by Aristotle. It is a system whose place in the *Organon*, in Greek philosophy, and in the history of philosophy raises many problems. When we turn to the epistemic interpretation the changes are dramatic. From the epistemic perspective the syllogistic is a system of deductions or chains-of-reasoning. It is organized according to an initial-versus-derivative structure with the derivative components as chainings of initial components. It is a system which can be seen to explain epistemic processes of deduction presupposed by the Socratic hypothetical method, by the so-called method of analysis, by the axiomatic method and even by dialectic itself. According to the epistemic interpretation, the focus of the syllogistic is on methods as opposed to results; it concerns the process of deduction rather than conclusions per se. One might say that it concerns how to think rather than what to think. And it is a step toward understanding the nature of proof as opposed to persuasion and toward fulfilling the demand made by Socrates in the *Phaedo* for a *techné logiké*. This step made by Aristotle was so firm, so detailed, and so well-developed that it warrants the title of THE FOUNDING OF LOGIC." (pp. 19-20)

16. ———. 2003. "Aristotle's *Prior Analytics* and Boole's *Laws of Thought*." *History and Philosophy of Logic* no. 24:261-288.

"*Prior Analytics* by the Greek philosopher Aristotle (384 - 322 BCE) and *Laws of Thought* by the English mathematician George Boole (1815 - 1864) are the two most important surviving original logical works from before the advent of modern logic. This article has a single goal: to

compare Aristotle's system with the system that Boole constructed over twenty-two centuries later intending to extend and perfect what Aristotle had started. This comparison merits an article itself. Accordingly, this article does not discuss many other historically and philosophically important aspects of Boole's book, e.g. his confused attempt to apply differential calculus to logic, his misguided effort to make his system of 'class logic' serve as a kind of 'truth-functional logic', his now almost forgotten foray into probability theory, or his blindness to the fact that a truth-functional combination of equations that follows from a given truth-functional combination of equations need not follow truth-functionally. One of the main conclusions is that Boole's contribution widened logic and changed its nature to such an extent that he fully deserves to share with Aristotle the status of being a founding figure in logic. By setting forth in clear and systematic fashion the basic methods for establishing validity and for establishing invalidity, Aristotle became the founder of logic as formal epistemology. By making the first unmistakable steps toward opening logic to the study of 'laws of thought' -- tautologies and laws such as excluded middle and non-contradiction -- Boole became the founder of logic as formal ontology."

17. ———. 2009. "Aristotle's Demonstrative Logic." *History and Philosophy of Logic* no. 30:1-20.

"Demonstrative logic, the study of *demonstration* as opposed to persuasion, is the subject of Aristotle's two volume *Analytics*. Many examples are geometrical. Demonstration produces *knowledge* (of the truth of propositions). Persuasion merely produces *opinion*. Aristotle presented a general *truth-and-consequence conception of demonstration* meant to apply to all demonstrations. According to him, a demonstration, which

normally proves a conclusion not previously known to be true, is an extended argumentation beginning with premises known to be *truths* and containing a chain of reasoning *showing* by deductively evident steps that its conclusion is a *consequence* of its premises. In particular, a demonstration is a *deduction* whose premises are known to be true.

Aristotle's *general* theory of demonstration required a prior *general* theory of deduction presented in the *Prior Analytics*. His general *immediate-deduction chaining conception* of deduction was meant to apply to all deductions. According to him, any deduction that is not immediately evident is an extended argumentation that involves a chaining of intermediate immediately evident steps that *shows* its final conclusion to follow logically from its premises. To illustrate his general theory of deduction, he presented an ingeniously simple and mathematically precise *special* case traditionally known as the *categorical syllogistic*."

18. Crivelli, Paolo. 2001. "Empty Terms in Aristotle's Logic." *Boston Area Colloquium in Ancient Philosophy* no. 17:237-269.

"Aristotle's logic can accommodate non-referring terms. Genuine affirmations must contain both a referring subject and a referring predicate; sentences that contain non-referring subjects or non-referring predicates are not genuine assertions. In appendix : The translation of *De interpretatione* 8. 18A23."

19. Cutler, Darcy Allen. 2005. "Aristotle and Modern Logic." In *Mistakes of Reason. Essays in Honour of John Woods*, edited by Peacock, Kent A. and Irvine, Andrew D., 207-223. Toronto: University of Toronto Press.
20. Ebbinghaus, Kurt. 1964. *Ein Formales Modell Der Syllogistik Des Aristoteles*. Göttingen: Vandenhoeck &

Ruprecht.

21. Frede, Michael. 1974. "Stoic Vs. Aristotelian Syllogistic." *Archiv für Geschichte der Philosophie* no. 56:1-32.

Reprinted in: M. Frede - *Essays in Ancient Philosophy* - Minneapolis, University of Minnesota Press, 1987 pp. 99-124.

22. Galvan, Sergio. 1995. "A Formalization of Elenctic Argumentation." *Erkenntnis* no. 43:111-126.

"In the Aristotelean philosophical tradition, elenctic argumentation (*Elenchos*) is conceived as a form of dialectical foundation of a thesis.

It takes place in the context of discussion for and against a given thesis and consists in showing that, as the denier of this thesis argues against the opponent, he is unable to maintain his position unless he presupposes the thesis itself, which thus prevails and is consequently proven. As is well known, Aristotle used this form of argumentation in many areas of his inquiry, since he regarded it as an extremely effective technique not only in the speculative sciences but in the physical and practical sciences as well. Particularly fortunate - because of its subsequent widespread use and because of the broad reflection that it stimulated - was Aristotle's application of this form of dialectical argumentation in Book Four of the *Metaphysics* in order to justify the principle of non-contradiction. Apart from its historical influence, this application is of especial importance because it evidences Aristotle's intention to prove, not any thesis whatsoever, but a logical principle, and this expresses his claim for an epistemically absolute proof - in the form of self-proof - of the principle itself.

It does not appear, however, that elenctic proof of the non-contradiction principle can be accomplished successfully. In fact, demonstration that this proof is impossible is the

purpose of the present essay, in which I propose a formalization of the argument - i.e. a formal reconstruction of the argument intended to give it a sufficiently precise specification - which highlights the conceptual difficulties that lie at its root." p. 111

23. Glashoff, Klaus. 2005. "Aristotelian Syntax from a Computational-Combinatorial Point of View." *Journal of Logic and Computation* no. 15:949-973.
24. Goddard, Len. 2000. "The Inconsistency of Aristotelian Logic?" *Australasian Journal of Philosophy* no. 78:434-437.
25. Granger, Gilles Gaston. 1970. "Le Syllogisme Catégorique D'aristote." *L'Age de la Science* no. 3:281-310.
26. Hintikka, Jaakko. 1988. "Le Logicien Incontinent D'aristote." In *Aristote Aujourd'hui*, edited by Sinaceur, Mohammed Allal, 94-112. Paris: Éditions érès.
27. Ierodiakonou, Katerina. 2002. "Aristotle's Use of Examples in the *Prior Analytics*." *Phronesis* no. 47:127-152.
28. Jacobs, William. 1979. "Aristotle and Nonreferring Subjects." *Phronesis* no. 24:282-300.

"It is a widely accepted view amongst scholars that Aristotle believed that the subject of an assertion might fail to refer. Two texts, *De Interpretatione* XI 21 a 25-28 and *Categories* X 13 b 12-35, are generally cited as evidence for this belief. In this paper I will argue that both passages have previously been misunderstood and that Aristotle did not accept the possible referential failure of the subject of an assertion. In Section I, after first discussing the standard interpretations of both texts, I note the difficulties which result from these accounts. In Section II I offer a brief general argument showing that Aristotle's own account of what an assertion is implies that it is impossible for the subject of an assertion to

fail to refer. In Section III I present my own analysis of each passage and show that when properly understood neither is in any way concerned with the problem of referential failure."

29. ———. 1979. "The Existential Presuppositions of Aristotle's Logic." *Philosophical Studies* no. 37:419-428.

30. Johnson, Fred. 1991. "Three-Membered Domains for Aristotle's Syllogistic." *Studia Logica* no. 50:181-187.

"The paper shows that for any invalid polysyllogism there is a procedure for constructing a model with a domain with exactly three members and an interpretation that assigns non-empty, non-universal subsets of the domain to terms such that the model invalidates the polysyllogism."

31. ———. 1994. "Syllogisms with Fractional Quantifiers." *Journal of Philosophical Logic* no. 23:401-422.

"Aristotle's syllogistic is extended to include denumerably many quantifiers such as more than $2/3$ ' and exactly $2/3$.' Syntactic and semantic decision procedures determine the validity, or invalidity, of syllogisms with any finite number of premises. One of the syntactic procedures uses a natural deduction account of deducibility, which is sound and complete. The semantics for the system is non-classical since sentences may be assigned a value other than true or false. Results about symmetric systems are given. And reasons are given for claiming that syllogistic validity is relevant validity."

32. ———. 1994. "Apodictic Syllogisms: Deductions and Decision Procedures." *History and Philosophy of Logic* no. 16:1-18.

33. Kapp, Ernest. 1975. "Syllogistic." In *Articles on Aristotle. Vol. 1 Science*, edited by Barnes, Jonathan, Schofield,

Malcolm and Sorabji, Richard, 35-49. London: Duckworth.
Originally published as 'Syllogistik' in: Pauly-Wissowa's
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IV A, 1931 cols. 1046-1067. Reprinted in E. Kapp -
Ausgewählte Schriften - Hrsg. von Hans und Inez Diller,
Berlin, de Gruyter, 1968, pp. 254-277.

34. Kelly, Charles J. 1991. "The Logic of the Liar from the
Standpoint of the Aristotelian Syllogistic." *Notre Dame
Journal of Formal Logic* no. 32:129-146.
35. Keyt, David. 2009. "Deductive Logic." In *A Companion to
Aristotle*, edited by Anagnostopoulos, Georgios, 31-50.
Malden: Wiley-Blackwell.
36. Łukasiewicz, Jan. 1951. *Aristotle's Syllogistic from the
Standpoint of Modern Formal Logic*. Oxford: Oxford
University Press.

Second edition 1957 with a new chapter on Aristotle's modal
logic.
37. ———. 1963. *Elements of Mathematical Logic*. Oxford:
Pergamon Press.

Translated from Polish by Olgierd Wojtasiewicz.
Original edition: *Elementy logiki matematycznej*,
Warszawa, 1929.
38. ———. 1967. "On the History of the Logic of Propositions."
In *Polish Logic 1920-1939*, edited by Storrs, McCall, 66-87.
Oxford: Oxford University Press.

Originally published in Polish as: *Z historii logiki zdan*,
Przegląd Filozoficzny, 37, 1934; translated by the author in
German as: *Zur Geschichte der Aussagenlogik*, *Erkenntnis*,
5, 1935, pp. 111-131.

Translated in English in: Storrs McCall (ed.), *Polish Logic 1920-1939*, Oxford, Clarendon Press, 1967 pp. 66-87 and also in: J. Łukasiewicz, *Selected Works* - Edited by Ludwik Borowski, Amsterdam, North-Holland, 1970 pp. 197-217.

39. ———. 1967. "Philosophical Remarks on Many-Valued Systems of Propositional Logic." In *Polish Logic 1920-1939*, edited by Storrs, McCall. Oxford: Oxford University Press.

Originally published in German as: *Philosophische Bemerkungen zu mehrwertighen Systemen des Aussagenkalküls*, Comptes rendus des séances de la Société des Sciences et des Lettres de Varsovie 23, 1930.

Translated in English in: Storrs McCall (ed.) *Polish Logic 1920-1939*, Oxford, Clarendon Press, 1967, pp. 40-65 and also in: J. Łukasiewicz, *Selected Works*, Edited by Ludwik Borowski, Amsterdam, North-Holland, 1970, pp. 153-178.

40. Marshall Jr., David. 1977. "Łukasiewicz, Leibniz and the Arithmetization of the Syllogism." *Notre Dame Journal of Formal Logic* no. 18:235-242.

"Łukasiewicz' second axiomatization of the assertoric syllogism ('Aristotle's syllogistic', 1957) consists of four axioms of assertion and one of rejection. n arithmetic interpretation is presented proving the independence of the latter. Łukasiewicz himself demonstrated all five consistent by means of an arithmetization due to Leibniz. This arithmetization, we are told by Louis Couturat ('La logique de Leibniz', 1901) was thought by Leibniz himself to have been invalid. Whether and why Leibniz in fact took this (mistaken) view, is discussed briefly."

41. Martin, John N. 1997. "Aristotle's Natural Deduction Reconsidered." *History and Philosophy of Logic* no. 18:1-15.

"John Corcoran's natural deduction system for Aristotle's syllogistic is reconsidered. Though Corcoran is no doubt

right in interpreting Aristotle as viewing syllogisms as arguments and in rejecting Łukasiewicz's treatment in terms of conditional sentences, it is argued that Corcoran is wrong in thinking that the only alternative is to construe Barbara and Celarent as deduction rules in a natural deduction system. An alternative is presented that is technically more elegant and equally compatible with the texts. The abstract role assigned by tradition and Łukasiewicz to Barbara and Celarent is retained. The two 'perfect syllogisms' serve as 'basic elements' in the construction of an inductively defined set of valid syllogisms. The proposal departs from Łukasiewicz, and follows Corcoran, however, in construing the construction as one in natural deduction. The result is a sequent system with fewer rules and in which Barbara and Celarent serve as basic deductions. To compare the theory to Corcoran's, his original is reformulated in current terms and generalized. It is shown to be equivalent to the proposed sequent system, and several variations are discussed. For all systems mentioned, a method of Henkin-style completeness proofs is given that is more direct and intuitive than Corcoran's original."

42. Mignucci, Mario. 1991. "Expository Proof in Aristotle's Syllogistic." In *Aristotle and the Later Tradition*, edited by Blumenthal, Henry and Robinson, Howard, 9-28. Oxford: Clarendon Press.

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43. ———. 1996. "Aristotle's Theory of Predication." In *Studies on the History of Logic. Proceedings of the Third Symposium on the History of Logic*, edited by Angelelli, Ignacio and Cerezo, Maria, 1-20. Berlin: Walter de Gruyter.

44. ———. 1996. "Che Cos'è Un Sillogismo Aristotelico?" In *Momenti Di Storia Della Logica E Di Storia Della Filosofia*, edited by Guetti, Carla and Puja, Roberto, 39-58. Roma: Aracne Editrice.

Atti del Convegno della Società Italiana di Logica e filosofia delle scienze - Roma 9-11 novembre 1994

45. Miller, James W. 1938. *The Structure of Aristotelian Logic*. London: Kegan Paul, Trench, Trubner and Co.
46. Morgenstern, Amy S. 2001. "Commentary to Paolo Crivelli: *Empty Terms in Aristotle's Logic*." *Boston Area Colloquium in Ancient Philosophy* no. 17:270-281.
47. Morrison, John J. 1955. "The Existential Import of a Proposition in Aristotelian Logic." *Philosophy and Phenomenological Research* no. 15:386-393.
48. Mulhern, Mary. 1974. "Corcoran on Aristotle's Logical Theory." In *Ancient Logic and Its Modern Interpretations. Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972*, edited by Corcoran, John, 133-148. Dordrecht: Reidel.
- "Corcoran, it seems to me, has made a very important contribution to our understanding of Aristotle's logic, and the suggestions offered in what follows should not be construed as impugning in any substantive way the value of that contribution.
- Of the many points Corcoran raises, I intend to take up four: (1) whether syllogistic is a science; (2) whether the theory of propositional forms presupposed by syllogistic is adequate; (3) whether Aristotle had a doctrine of logical truth; and (4) whether Aristotle considered reasoning natural or conventional." p. 136

49. Nasti de Vincentis, Mauro. 1981. "L'affermazione Da Trasposizione in *De Int.* 10 E A. Pr. A 46." In *Atti Del Congresso Nazionale Di Logica. Montecatini Terme, 1-5 Ottobre 1979*, edited by Bernini, Sergio, 617-645. Napoli: Bibliopolis.
50. ———. 2010. "Forme Della Contraddizione E Sillogistica Aristotelica." In *La Contraddizione Che Non Consente*, edited by Puppo, Federico, 67-84. Milano: Angeli.
51. Negro, Camillo. 1967. "La Sillogistica Di Aristotele Come Metodo Della Conoscenza Scientifica." In. Bologna: Patron.
52. Novak, Joseph A. 1980. "Some Recent Work on the Assertoric Syllogistic." *Notre Dame Journal of Formal Logic* no. 21:229-242.

"Over the last few decades there have been many attempts to approach the Aristotelian syllogistic by utilizing the techniques of contemporary formal logic. The aim of this paper is to examine the most significant of these attempts and evaluate their fidelity to and consistency with Aristotle's own basic exposition of the syllogistic as expressed in the *Prior Analytics* (Book I, 1-2; 4-6).

Two major approaches to the formalization of the assertoric syllogistic can be distinguished in the literature. The first and older approach construes the syllogistic as an axiomatic system, while the second and more recent approach considers the syllogistic as a natural deduction system. Since many of the attempts of the first sort fail to be mentioned in current discussion, this paper will try to summarize them and only make a concluding reference to the second approach which is readily accessible in the more recent publications.

There are two main issues which must be confronted in the case of each attempt to present Aristotle's assertoric syllogistic as an axiomatic system: first, whether the method

of representation, i.e., the logical alphabet and the well-formed formulas of the system, conforms to Aristotle's own approach; second, whether the specific formulas chosen as axioms and definitions, the rules of inference, and the manner of proof, etc., are faithful to or at least consistent with Aristotle's writings. Although it might appear that the first issue, a discussion of the logical symbols employed, is not of any real value, one must remember that Aristotle's logic seems tied to some basic philosophical or, better, metaphysical presuppositions. That there can be a close link between certain symbolical representations and some ontological positions is clear in the case of some other philosophers.

One instance in the twentieth century is Gustav Bergmann whose espousal of a bare particularist theory of individuation is linked to his employment of a type of Russelian formal language (Bergmann, G., *Meaning and Existence*, University of Wisconsin Press, Madison, 1960). Attempts at presenting the syllogistic in a formal way have proceeded along four lines: first, the attempt to present the syllogistic by means of the first-order predicate calculus; second, the classic attempt of Łukasiewicz to develop the syllogistic; third, the attempt to present the syllogistic as a theory of classes; fourth, Lejewski's attempt to relate the syllogistic to Lesniewski's ontology. Each of these attempts will be treated below in light of the two issues raised above."

53. Parry, William T., and Hacker, Edward A. 1991. *Aristotelian Logic*. Albany: State University of New York Press.
54. Patterson, Richard. 1989. "The Case of the Two Barbaras: Basic Approaches to Aristotle's Modal Logic." *Oxford Studies in Ancient Philosophy* no. 7:1-40.

" Aristotle's modal propositions use modal copulae rather than modal predicates or modally qualified *dicta*; the familiar contrast between predication of *dicta* and of things

is inappropriate to the Aristotelian modalities. Despite what may appear to be vacillation on Aristotle's part between *de re* and *de dicto* modality, the copulae interpretation can serve to unify the two types."

55. ———. 1990. "Conversione Principles and the Basis of Aristotle's Modal Logic." *History and Philosophy of Logic* no. 11:151-172.

"Aristotle founds his modal syllogistic, like his plain syllogistic, on a small set of 'perfect' or obviously valid syllogisms. The rest he reduces to those, usually by means of modal conversion principles. These principles are open to more than one reading, however, and they are in fact invalid on one traditional reading (*de re*), valid on the other (*de dicto*). It is argued here that this way of framing the contrast is not Aristotelian, and that an interpretation involving modal copulae allows us to see how these principles, and the modal system as a whole, are to be understood in light of close and precise connections to Aristotle's essentialist metaphysics."

56. ———. 1993. "Aristotle's Perfect Syllogisms, Predication, and the *Dictum De Omni*." *Synthese* no. 96:359-378.

57. Patzig, Günther. 1959. "Aristotle and Syllogisms from False Premisses." *Mind* no. 68:186-192.

58. ———. 1968. "Aristotle's Theory of Syllogism. A Logico-Philological Study of Book *a* of the *Prior Analytics*." In. Dordrecht: Reidel.

English translation by Jonathan Barnes of G. Patzig - *Die aristotelische Syllogistik. Logisch-philologische Untersuchungen über das Buch A der Ersten Analytiken* - Göttingen. Vandenhoeck & Ruprecht, 1959.

59. ———. 1988. "Problèmes Actuels De L'interprétation De La Syllogistique D'aristote." In *Aristote Aujourd'hui*, edited by Sinaceur, Mohammed Allal, 270-275. Paris: Éditions érès.

60. Rose, Lynn. 1956. "Premise Order in Aristotle's Syllogistic." *Phronesis* no. 11:154-158.

"Upon examination of all of the syllogisms in the "Prior Analytics," it is found that Aristotle has relatively strong tendencies to write the major premise before the minor premise in the first figure and in the second figure and a considerably weaker tendency to write the major premise first in the third figure. These tendencies are explained in terms of 'left-right' and 'adjacency' factors that are connected with Aristotle's treatment of the syllogism as a rectilinear array of the three terms."

61. ———. 1965. "Aristotle's Syllogistic and the Fourth Figure." *Mind* no. 74:382-389.

62. ———. 1968. *Aristotle's Syllogistic*. Springfield: Charles C. Thomas.

Contents: I. Plato's dialectic and Aristotle's syllogistic 3; II. The varieties of predication 13; III: The three figures 16; IV. The non-use of rules 27; V. Validation by reduction 34; VI. Invalidation by counterexample 37; VII. The syllogistic system 53; VIII. The Fourth Figure and the indirect proof 57; IX. Subalternation 80; X. Premise order 81; Appendix. I. The square of opposition 99; II. The mnemonic lines 102; III: The perfection of Aristotle' First Figure 104; IV. Theophrastus and the indirect moods 109; V. The diagrams of the three figures 133; VI. John Locke's criticisms of Aristotle and the syllogism 137; Bibliography 144; Index 147-149.

"Aristotle's work in formal logic has received a great deal of scholarly attention; nevertheless, it remains largely

misunderstood. Aristotle's logic has often been equated with traditional "Aristotelian" logic (a usage as unhistorical as "Platonic" love or "Epicurean" tastes), or, which is even worse, judged and evaluated in accordance with how closely it follows or "fails" to follow that traditional logic. Even when efforts have been made to understand Aristotle's logic in its own right, Aristotle has usually been very shabbily treated. He has commonly been accused of errors that he never made at all, such as neglecting or overlooking the fourth figure. Even his way of conceiving the syllogism as a linear array of three terms has been lost on minds handicapped by later, but not thereby better, ways of thinking.

Although I hope that this book will contribute towards a better understanding of what Aristotle did and did not accomplish in his syllogistic, I have by no means attempted to treat Aristotle's syllogistic in its entirety. (For one thing, I have confined myself to the assertoric syllogistic and not gone into the modal logic at all.) The principal task of this book has been to explore the consequences of accepting the Aristotelian syllogism as a linear array of three terms. This approach to Aristotle sheds light on many hitherto mysterious aspects of Aristotle's logic; it provides new insights into what Aristotle was doing in the *Prior Analytics* and enables us to correct numerous misconceptions about his logic.

My treatment of the *Prior Analytics* has been quite sympathetic, and my conclusions are generally favorable; indeed, one of the aims of this book is to exonerate Aristotle's work in formal deductive logic." p. V

63. Ross, William D. 1939. "The Discovery of Syllogism." *Philosophical Review* no. 48:251-271.
64. Shepherdson, John C. 1956. "On the Interpretation of Aristotelian Syllogistic." *Journal of Symbolic Logic* no.

21:137-147.

65. Simons, Peter. 1989. "Tree Proofs for Syllogistic." *Studia Logica* no. 48:540-554.

"This paper presents a tree method for testing the validity of inferences, including syllogisms, in a simple term logic. The method is given in the form of an algorithm and is shown to be sound and complete with respect to the obvious denotational semantics. The primitive logical constants of the system, which is indebted to the logical works of Jevons, Brentano and Lewis Carroll, are term negation, polyadic term conjunction, and functors affirming and denying existence, and use is also made of a metalinguistic concept of formal synonymy. It is indicated briefly how the method may be extended to other systems."

66. Smiley, Timothy. 1962. "Syllogism and Quantification." *Journal of Symbolic Logic* no. 27:58-72.

67. ———. 1973. "What Is a Syllogism?" *Journal of Philosophical Logic* no. 2:136-154.

68. ———. 1994. "Aristotle's Completeness Proof." *Ancient Philosophy* no. 14:25-38.

"In *Prior Analytics* I 23 Aristotle presents a completeness proof for syllogistic logic, or so I maintain. I reconstruct the crucial step, which I take to be his highly condensed argument that every syllogistic-style deduction with more than two premises can be reduced to a series of syllogisms proper. I detect two big holes in the argument, but show that they can be filled without recourse to anachronistically modern methods. I end with a principle about the ordering of terms, and discuss the connections between it, Platonic division and Aristotle's exclusion of the fourth figure."

69. Smith, Robin. 1978. "The Mathematical Origins of Aristotle's Syllogistic." *Archive for History of Exact Sciences* no. 19:201-210.

"Interpretation of the syllogistic theory presented in *Prior Analytics* I.4-7. This syllogistic theory is more properly regarded as mathematics than as logic as understood by most contemporary logicians."

70. ———. 1982. "What Is Aristotelian Ecthesis?" *History and Philosophy of Logic* no. 3:113-127.

"I consider the proper interpretation of the process of ecthesis which Aristotle uses several times in the "Prior analytics" for completing a syllogistic mood, i.e., showing how to produce a deduction of a conclusion of a certain form from premisses of certain forms. I consider two interpretations of the process which have been advocated by recent scholars and show that one seems better suited to most passages while the other best fits a single remaining passage. I also argue that "ecthesis" for Aristotle means 'setting out' the case to be proved using letters. Aristotle's remarks about the use of letters in mathematical proofs suggest that he had some understanding of rules equivalent to universal generalization and existential instantiation; the 'proofs through ecthesis' are so-called because they rest on the latter rule, with which use of letters is involved in a special way."

71. ———. 1982. "The Axiomatic Method and Aristotle's Logical Methodology." *Southwest Philosophical Studies* no. 8:49-59.

"I argue that Aristotle developed the syllogistic in the "Prior Analytics" in order to use it in resolving the question, presented in "Posterior Analytics" A 3, whether proof of every proposition is either necessary or possible. His method, which rests on an analysis of the possible structure

of proofs derived from the study of syllogisms in the "Prior Analytics", resemble modern proof theory in both style and purpose."

72. ———. 1983. "Completeness of an Ecthetic Syllogistic." *Notre Dame Journal of Formal Logic* no. 24:224-232.

"In this paper I study a formal model for Aristotelian syllogistic which includes deductive procedures designed to model the "proof by ecthesis" that Aristotle sometimes uses and in which all deductions are direct. The resulting system is shown to be contained within another formal model for the syllogistic known to be both sound and complete, and in addition the system is proved to have a certain limited form of completeness."

73. ———. 1986. "Immediate Propositions and Aristotle's Proof Theory." *Ancient Philosophy* no. 6:47-68.

"I argue that Aristotle's main reason for developing the theory of deductions (syllogisms) in the "Prior Analytics" was its use as a proof-theoretic instrument to solve problems about demonstrative sciences. thus, concerning the old problem of the relation of the two "Prior" and "Posterior Analytics", I hold that the "Prior" is "propter", and therefore "post", the "Posterior". This is shown in greater detail through an analysis of the role of 'immediate' propositions in his theory."

74. ———. 1994. "Dialectic and the Syllogism." *Ancient Philosophy* no. 14:133-151.

75. Striker, Gisela. 1985. "Notwendigkeit Mit Lücken." *Neue Hefter für Philosophie* no. 24/25:146-164.

76. Thom, Paul. 1976. "Ecthesis." *Logique et Analyse* no. 74-76:299-310.

77. ———. 1979. "Aristotle's Syllogistic." *Notre Dame Journal of Formal Logic* no. 20:751-759.

78. ———. 1981. *The Syllogism*. München: Philosophia Verlag.

Contents: Preface 11; Part One. Aristotle's syllogistic. I. Elementary syntax 19; II. Basis of the system 32; III. Theses 45; IV. Non-theses 56; V. Interpretation and application 69; Part Two. Syllogistic and its extensions. Introduction 89; VI. System A 91; VII. Subsystems 109; VIII. Extensions 119; IX. Rejection 147; X. Ectesis 164; Part Three. The theory of the syllogism. Introduction 179; XI. Syntactic theory 181; XII. Aristotle's syntactic theory 193; XIII. Semantic theory 216; XIV. Epistemological theory 227; Appendix 1. The Gergonne relations 253; Appendix 2. *Termini obliqui* and the logic of relations 255; Appendix 3. Medieval ectetic systems 257; Notes 261; Bibliography 289; Indices. Index 1. Aristotelian passages 299; Index 2. Definitions 306; Index 3. Names 409-312.

"The three Parts of this book deal respectively with the formal analysis of Aristotle's non-modal syllogistic; with the inter-relations between various syllogistic systems, their subsystems and extensions; and with the most fundamental question about the syllogism, *viz.* What is it?

Part One aims to effect a synthesis of recent work (both logical and philological) on the non-modal sections of the *Prior Analytics*, within the framework of a new formal system which combines features of Łukasiewicz's 'axiomatic' approach with features of the 'natural deduction' approach of Corcoran and Smiley.

This system is identified, in Part Two, as one of a family which also includes the semantically complete systems of Łukasiewicz and Corcoran. Extended systems are also considered, in which rejected formulae are axiomatised, and negative or singular terms added. In particular, formal analyses are given of Aristotle's own logics of negative and

singular terms, and it is shown that the whole system of categorical syllogisms can be based on a system of singular syllogisms with the Aristotelian rules of *ecthesis*.

The multiplicity of syllogistic systems discussed in Part Two gives rise to the search (carried out in the third Part) for properties *essential* to the syllogism, which would recur in any genuinely syllogistic system. A complex syntactic property of the categorical syllogism is first described, then a semantic one, and finally one which I will term epistemological (without wanting to sink into psychologism). The principal standpoint in this Part is a purely theoretical one - the semantic discussion being within the context of the contemporary debate on entailment, and the epistemological one belonging to the theory of fallacies. But the historical approach of the first two Parts is not wholly abandoned, and a detailed account is given of those parts of the *Prior Analytics* (not often read) which include Aristotle's own attempts at metatheory.

With some reluctance, and in the interests of brevity, I have adopted a style of exposition which is generally dogmatic rather than dialectical, in that it seeks merely to state the truth rather than to allow the true view to emerge in stages from partial truths or mistaken opinions. Also, interpretations or theories which seemed to me *wholly* wrong have in general not been mentioned: there are just too many of them. On the other hand, I have tried to include reference to what seemed to me the most important contributions of the ancient and medieval commentators.

I have proceeded (as Aristotle would have said) from what is best known in itself, to what is best known for us, beginning with the basis of an uninterpreted formal system, and ending with a statement of the function of the syllogism and the use of the system. So, in a sense, the reader will not know why the beginning is as it is, until he has come to the end. For the benefit of readers who can't stand the suspense, I have tried to make the end independently intelligible, so

that they can begin there, and then go to the beginning, ending in the middle with a kind of *syllogismus interruptus*." pp. 11-12

79. ———. 1991. "The Two Barbaras." *History and Philosophy of Logic* no. 12:135-149.

"This paper examines three recent discussions of Aristotle's system of syllogisms with apodeictic and assertoric premisses. Though they contain no cross-references, and though they arrive at disparate interpretations, all three pieces share a common aim. That aim is to construct an intuitively graspable interpretation of Aristotle's modal syllogistic which is based on metaphysical considerations. I argue that none of these authors has succeeded in this; nevertheless, I share their broad aim, and attempt to show that a more satisfactory interpretation can be formulated by combining and developing elements drawn from all three."

80. ———. 1993. "Apodeictic Ecthesis." *Notre Dame Journal of Formal Logic* no. 34:193-208.
81. Thompson, Marley. 1959. "On the Elimination of Singular Terms." *Mind* no. 68:361-376.
82. Weidemann, Hermann. 2004. "Aristotle on the Reducibility of All Valid Syllogistic Moods to the Two Universal Moods of the First Figure (*Apr A7*, 29b1-25)." *History and Philosophy of Logic* no. 25:73-78.
83. Westerståhl, Dag. 1989. "Aristotelian Syllogisms and Generalized Quantifiers." *Studia Logica* no. 48:577-585.
84. Williams, Mark F. 1984. *Studies in the Manuscript Tradition of Aristotle's Analytica*. Königstein: A. Hain.
85. Williamson, Colwyn. 1972. "Squares of Opposition: Comparisons between Syllogistic and Propositional Logic."

Notre Dame Journal of Formal Logic no. 13:497-500.

"It has been pointed out, for example by Bochenski, (1) that the principles of propositional logic now known as DeMorgan's Laws bear a certain resemblance to the laws depicted in the traditional Square of Opposition.

The analogy, however, is not as perfect as it could be. The aim of this paper is to explore some of the consequences of seeking a more exact comparison between syllogistic and propositional logic."

(1) J. M. Bochenski, *A Précis of Mathematical Logic*, Holland (1959), p. 14

86. ———. 1988. "How Many Syllogisms Are There?" *History and Philosophy of Logic* no. 9:77-85.

"The incompleteness and artificiality of the 'Traditional logic' of the textbooks is reflected in the way that syllogisms are commonly enumerated. The number said to be valid varies, but all the numbers given are of a kind that logicians should find irritating. Even the apparent harmony of what is almost invariably said to be the total number of syllogisms, 256, turns out to be illusory. In the following, it is shown that the concept of a "distribution-value", which is related to the traditional theory of distribution, and the familiar concept of "quantity" together suffice to produce a far better way of enumerating syllogisms and a more complete understanding of the systematic features of syllogistic logic."

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The Dialectical School and the Origins of Propositional Logic

[Selected Bibliography on the Dialectical School and the Origins of Propositional Logic](#)

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Porphyry's *Isagoge* and his Commentary to Aristotle's *Categories*

Boethius' Contribution to the Development of Medieval Logic

[The Philosophical Works of Boethius. Editions and Translations](#)

[Boethius' Logic as a Discourse on Being](#)

[Selected Bibliography on the Logical Works of Boethius](#)



[History of Logic from Aristotle to Gödel](#)

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History of Ancient Logic in the Hellenistic Period

THE SUCCESSION OF THINKERS AND SCHOOLS

The history of ancient philosophy covers about eleven centuries, from Thales who lived during the sixth century B.C. to Boethius and Simplicius who flourished at the beginning of the sixth A.D. From the point of view of the history of formal logic this long epoch may be divided into three periods.

(1) The pre-Aristotelian period, from the beginnings to the time at which Aristotle started writing his *Topics* (about 340 B.C.). There is no formal logic during this period, i.e. no *study* of logical rules or laws; but some of them are *used* consciously since Zeno of Elea, and Plato tries, if unsuccessfully, to build up a logic.

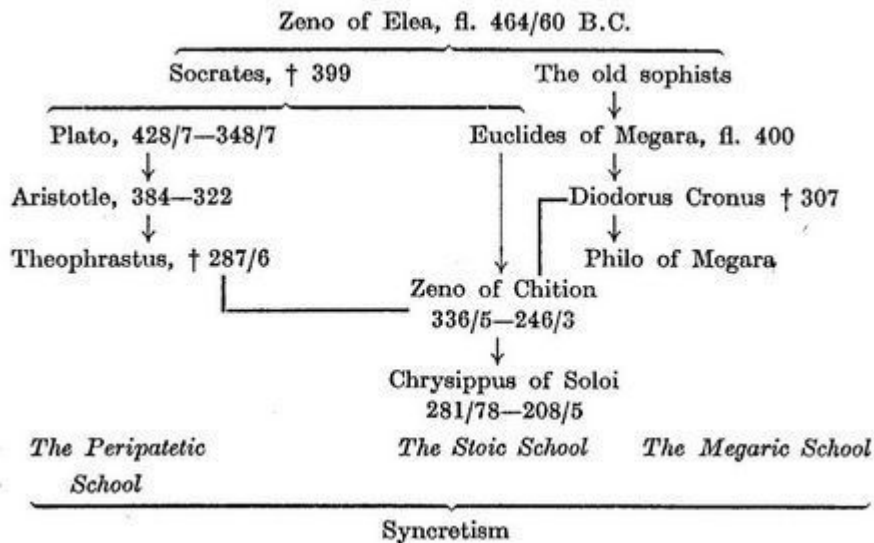
(2) The creative period, from the time of Aristotle's *Topics* to the death of Chrysippus of Soloi (205/8 B.C.). During this period Logic was founded and considerably developed.

(3) The period of schoolmasters and commentators, from the death of Chrysippus until the end of Antiquity. In that period no more creative work is done, as far as we know; moreover, a continuous decline of formal logic seems to take place. Boethius and Simplicius who are considered as the last ancient philosophers are also the last ancient logicians.

It appears, consequently, that out of the eleven centuries mentioned above only about 150 years are of real importance; but those years are of enormous importance -- they are, indeed, among the best years of logic in the whole history of humanity until now.

The succession of different trends of logical thought -- for there were several such trends -- can be briefly stated in the following terms. If Zeno is, according to Aristotle, "the inventor of dialectics", Socrates seems to have been the real father of formal logic ; at least both Plato and Euclides, the head of the Megaric School, claim to be his disciples. Plato was the teacher of Aristotle, the founder of formal Logic; Aristotle was succeeded by Theophrastus, Eudemus and some others, who, if far less important than he, are nevertheless productive logicians. This is one line of development of logic, the peripatetic. The other line starts with Euclid of Megara and in the second generation after him bifurcates into the properly Megaric School, with Diodorus Cronus, and Philo of Megara his pupil, as most important logicians on one hand -- the Stoic School founded by Zeno of Chition and having as chief thinker Chrysippus of Soloi on the other. After Chrysippus' death one hears no more of the Megaricians, and, later on, a syncretism of the Peripatetic and Stoic-Megaric Schools appears.

Here is a scheme which may help in comparing the respective dates and mutual influences; it contains only the most important names:" (pp. 9-10)



From: I. M. Bochenski, *Ancient Formal Logic*, Amsterdam: North-Holland 1951.

FIRST PHILOSOPHY AND ONTOLOGY

"Let us begin then -- according to our program -- with the question: What, in the Greek philosophy, is the relation between *First Philosophy* and reflexion on language?

Why -- to put the question directly -- did *ontology* become the *First Philosophy* at that time rather than *philosophy of language*? From our historical distance and level of reflexion one could consider the last question as somewhat curious, and one might answer it by calling attention to the fact that language as a condition of knowledge is much more difficult to grasp and to analyze than the realm of things given by the senses. At first -- one might say -- attention focuses on what can be shown in unreflective experience, in the so called *intentio recta* or *prima*; later one comes to reflect -- within the so called *intentio obliqua* or *secunda* -- on cognition itself as function of consciousness and,

finally, one may reflect on the function of language as a condition of the possibility and intersubjective validity of knowledge. Certainly, this answer is not false; we will even accept it as a guideline for understanding the sequence of periods in the history of philosophy. However, it must be stressed, that Greek philosophy itself went through this cycle of stages in a way. In the age of Socrates and the Sophists it already turns away from ontological questions about the nature (φύσις) and origin (ἀρχή) of things, and raises questions as to the correctness of names (ορθοτεες ονομάτων), the function of speech (λόγος) and the meaning of words as concepts or definitions (ὅροι, δρισμοί). Plato, through whom we know about these discussions, already achieves the insight, that the truth is not to be sought in the quality of single names but that it is a function of their connection into a statement (λόγος) (5). And Aristotle especially in his "De Interpretatione" laid the foundations of a philosophy of grammar, which was further elaborated by the Stoics and thus decisively influenced the grammar of the schools in the western world up to the present day.

But why did not Plato already, as Wittgenstein suggests, look for the rule of the use of words in order to find an answer to the famous questions of Socrates into *what* courage or justice is? And why did he not see in his own definition of thinking as a voiceless dialogue of the soul with itself a clue to the fact that thinking is to be considered as a function of communication by language? And Aristotle, who so often opens his questions about the essence (οὐσία) of being (όν) by an inquiry into the use of the words -- why did he not consider the possibility that his ontological categories are relative to the Greek language?

The answer to these questions, in my opinion, has to be a twofold one: On the one hand Plato and Aristotle would have had good reasons for being dissatisfied by doctrines which claim to "reduce" their question as to the *essence of things* to mere question about the *use of words*. (...) On the other hand, however, we must not overlook that Plato and Aristotle did not have a concept of language adequate to enable them to see that their

very questions, not to speak of the answer, were dependent on the learned use of a certain language.

The classical philosophy of the Greeks had at its disposal essentially four concepts for comprehending the essence of human speech or communication: ὄνομα (name), σύμβολον, σημεῖον (symbol or sign), δρος; (concept) and λόγος; (speech, oratio, ratio, statement, etc.) (It is worth mentioning that it had no concept of a special language. Only the Romans had the word "lingua latina".) (7) By means of these four concepts it was impossible to grasp that meaning is essentially a function of a language. For these four concepts form two clusters between which the problem of linguistic meaning slips through: λόγος (ratio) and δρος (concept) were a priori directed to something universal which was thought to be independent of the use of language; ὄνομα (name) and σύμβολον or σημεῖον (sign), on the other hand, did in fact mean something which differs according to the use of different languages, but for Aristotle, at least, it had nothing to do with the meaning of thoughts; it was only a conventional means of designating, in the service of the "logos". (Perhaps it was precisely this progressive step of no longer asking for the correctness of single names but rather for the truth of statements that caused the Greek philosophers to overlook the cognitive function which languages have by virtue of the determinate meanings of their words and phrases.) (8)" (pp. 34-36)

Notes

(5) Cf. Plato, *Sophist* 261c - 262e

(6) Cf. Plato, *Sophist* 263d

(7) See J. Lohmann, "Über den paradigmatischen Charakter der griechischen Kultur", in: *Festschrift für H. G. Gadamer*, Tübingen 1960, pp. 171-89; see further J. Lohmann's papers in *Lexis*, I, 1948, pp.49-106, *Lexis*, III, 1, pp. 5-49, *Lexis*, III, 2, p. 169-217, and in: *Festschrift für L. Weisgerber*, Düsseldorf 1958.

(8) So it is not quite surprising that the Neoplatonist tradition which interpreted Plato's "Cratylus" as defending the theory of the correctness of names had some beneficial influence by preserving the notion that words are not simply sounds arbitrarily used as signs. Finally, the strongest argument of the *θέσει*-theory of names was answered in the Neoplatonist tradition by the fruitful idea that the variety of words standing for the same things must not necessarily be explained by different conventions but could also be explained by a variety of experienced aspects of things. This view may be traced in, for instance, Nicolaus Cusanus, Leibniz and still in W. von Humboldt. Cf. K. O. Apel, "Die Idee der Sprache bei Nicolaus von Cues", in *Archiv für Begriffsgeschichte*, Bd. 1, Bonn 1955, pp. 200-221.

From: Karl-Otto Apel, "The Transcendental Conception of Language-Communication and the Idea of a First Philosophy" in: Herman Parrett (ed.), *History of Linguistic Thought and Contemporary Linguistics*, Berlin: Walter de Gruyter 1975, pp. 32-61.

LOGICAL FORM AND LOGICAL MATTER

"The mediaeval distinction between material and formal consequence derives ultimately, both in name and in substance, from ancient texts. (60)

Form and matter, *eidos* and *hyle*, are Peripatetic twins, and the mediaeval distinction -- and hence the modern notion of 'formal' logic -- comes in the end from Aristotle.

These claims are indisputable -- but they are vague. If we inquire more closely into the business, dispute and controversy appear.

For some historians of logic have claimed that the later Peripatetics, at least, had a clear understanding of the notion of logical form and hence of the essential nature of formal logic; (61)

whereas others have maintained, to the contrary, that the modern ideas of formal validity and of the logical form of an argument have no genuine counterparts in the ancient texts. (62) In fact -- and predictably --, the truth lies dully between these two exciting extremes; and if we are to see just how and where it lies, we must proceed by a plodding examination of the relevant texts.

Aristotle himself only once applies the concepts of matter and form to the syllogism: at *Phys* 195a18-19 he observes laconically that "the hypotheses are matter for the conclusion". (By "hypotheses" he here means "premisses".) The later commentators pick up the point. Alexander, it is true, was not happy with it, (63) and he does not make use of it in his own logical writings. But Philoponus had no such qualms: he repeats the idea that the premisses of a syllogism are, as it were, the stuff out of which the conclusion is made (64) Yet whatever we make of *Phys* 195a18-19, the text has nothing to do with the distinction between formal and material validity.

Several other logical applications of the twin concepts are found in the later commentators: thus the modal status or *skesis* of a proposition is called its 'matter'; (65) or the subject of a proposition stand to the predicate as matter to form; (66) or an unquantified proposition is matter, the quantifier form; (67) and so on. (68) None of these applications of the Aristotelian distinction is illuminating; and none is relevant here.

Alexander preferred to invoke matter and form in a different logical context; and it is his preferred distinction between logical matter and logical form which is to the present point. (69) The idea first appears early in Alexander's commentary on the *Prior Analytics*:

The figures of the syllogism are like a sort of common matrix. You may fit matter into them and mould the same form for different matters. Just as, in the case of matrixes, the matters fitted into them differ not in respect of form or figure but in respect of matter, so too is it with the syllogistic figures. (*in APr* (6.16-21). Alexander says no more than this to explain what distinguishes the form from the matter of an argument. Similarly, the

distinction enters his commentary on the *Topics* in its first pages (in *Top* 2.1-3.4) -- and again, there is no serious explanation.

After their introduction, the concepts are used with frequency and without apology throughout the commentaries.

The twins reappear in the later Peripatetic commentators.

Ammonius presents them in a cautious manner near the beginning of his commentary on the *Prior Analytics*:

In every syllogism there is something analogous to [*analogon*] matter and something analogous to form. Analogous to matter are the objects [*pragmata*] themselves by way of which the syllogism is combined, and analogous to form are the figures. (in *APr* 4.9-11).

As this passage suggests, Ammonius does not greatly like the term *hyle*; and to convey the Alexandrian distinction he will in fact more often employ the word *pragma*. (70) But his pupil Philoponus was content with the term *hyle* and he simply equates *pragmata* and *hyle* as though nothing turned on the point (in *APr* 9.6.)

(...)

Thus the later authors used a variety of linguistic turns. But it would be rash to look for any substantial difference behind the linguistic facade. Boethius and the later Greeks adopted and deployed an established and apparently uncontroversial distinction. How the distinction was referred to and by what names it was called were questions of taste and style.

Alexander too had taken the thing for granted; and we must infer from his commentaries that earlier Peripatetics had applied the concepts of matter and form to logic. On independent grounds we may believe that Alexander's teacher, Herminus, (75) had probably spoken of the form and matter of arguments. (76) As far as I know, there is no other evidence for the use of matter and form in logical theory before Alexander: it is not found in Aristotle's own works; nor is there any text ascribing it to Theophrastus or Eudemus, or to Boethus or Aristo. But the silence proves little, and Alexander's attitude shows that by his time it was already thoroughly familiar. (77)

If we ask *why* some Peripatetic scholar thought to apply matter and form to logic, we can give no worthwhile answer. Was the idea part of a general attempt to systematise Aristotle, so that his customary analytical concepts should be applied in every part of his philosophy? Was it rather reflexion on the *Analytics* themselves (perhaps on the sense and function of Aristotle's dummy letters (78) which encouraged the invocation of matter and form? Was it the influence of the Stoics, whose own distinction between a *logos* and a *tropos* might have put a Peripatetic in mind of matter and form? (79) There is no evidence from which to answer these questions." (pp. 39-43)

Notes

(60) For the links between the ancient and the mediaeval accounts see esp. Ebbesen pp. 95-101; cfr. Pinborg pp. 74-80. For the importance of the distinction in Arabic texts see Zimmermann pp. XXXVIII-XLI. (But Zimmermann claims too much for Al-Farabi. "Striking an individual note in the very first sentence of his *Commentary* al-Farabi says that the *De Int.* is about the "composition" [*ta'lif*], not the "matter" [*madda*], of propositions. I do not find this opposition of terms, which recurs as a kind of leitmotiv throughout the work, in the Greek commentaries; and the fact that it is usually in criticizing his predecessors that he invokes it confirms that here we have a new departure in the exegesis of the *De Interpretatione*" (pp. XXXVIII-XXXIX). Not entirely new, I think -- and in any case, the opposition of terms which al-Farabi deploys was thoroughly familiar to the Greek commentators on the *Analytics*.)

(61) Thus the Peripatetic commentators "show us that they had an excellent conceptual grasp of the essence of what is today called 'formal' logic" (Lee, p. 38); and Alexander had "a clear insight into the essence of formal logical laws" (Bochenski, p. 157).

(62) Thus "it seems that neither the Stoics nor the Peripatetics ever say that an argument is valid because of its logical form,

which would be strange if they actually had thought that the validity had to be explained as being due to the form. And even when it is said that a certain form of argument is valid for every matter (i.e. for every suitable substitution of the letters), this does not seem to be the same as saying that the validity is due to the form" (Frede, p. 103). (In a note, Frede admits that there are apparent counterexamples to his thesis -- he cites Boethius, *Hyp syl* II ii 4-5, iii 6, iv 2 [see below, p. 42] --, and says that these passages "would have to be dealt with individually" (p. 368 n. 3).) -- I am not sure exactly what Frede concedes and what he denies. But the main point appears to be this: the ancient logicians do not ever say of an argument that it is valid because of its form. Now, taken absolutely literally, this may well be true; at least, I have not come across a text in which a conclusion is said *sunaghestai dia to eidos*. But there are, as Frede allows, a few passages which say something very close to this (e.g. that a conclusion is drawn *dia ten plochen*); and there are numerous passages which imply something like it (e.g. passages which contrast syllogisms with arguments which conclude *dia ten hylon*). -- My own reasons for qualifying the enthusiastic view exemplified in the last footnote are not Frede's. Rather, first, I hold that the use of the matter/form distinction by Alexander (and the later commentators) is not always coherent [see below, pp. 58-65]. And secondly, I doubt if the ancients had any dear or coherent notion of form. They had (*contra* Frede) a rough and ready notion of formal validity; but (*contra* Lee) they had no precise and rigorous notion. (Of course, if the reflections in the previous Part of this paper are correct, then the ancients were in this respect no worse off than most moderns.).

(63) See the passage quoted by Simplicius, in *Phys* 320.1-10.

(64) See e.g. in *APr* 6.10-14; 32.31-33.2. The idea survived to become a commonplace of traditional logic: see e.g. 59 of Kant's *Logik*

(65) See below, pp. 44 and 48.

(66) E.g. Philoponus, in *APr* 65.11-13; [Ammonius], in *APr* 71.14-16.

- (67) E.g. Ammonius, in *Int* 111.19-23.
- (68) For yet other uses of matter and form see e.g. [Ammonius], in *APr* 68.33-69.11; Philoponus, in *APr* 6.2-3 (cfr. 10.18); 44.24-26; 66.7-26
- (69) On Alexander's use of matter and form in logic see esp. Lee, pp. 38-44.
- (70) Alexander too occasionally uses pragma (e.g. in *APr* 295.1; 301.12-13); and he takes this usage from Aristotle (*APr* 43b3-4).
- (75) On whom see P. Moraux, *Der Aristotelismus bei den Griechen*, vol. II, Berlin, de Gruyter 1984 ("Peripatoi", 6), pp. 361-363.
- (76) See [Ammonius], in *APr* 39.32: I say "probably" because [Ammonius] is paraphrasing rather than quoting, and because we cannot be sure of the reliability or the accuracy of his paraphrases. (See below, p. 80).
- (77) Bochenski is therefore wrong when he says (p. 157) that "Alexander seems to have been the first to give an explicit account of the difference between form and matter in logic".
- (78) See below, p. 51.
- (79) See below, pp. 65-66.

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LATER ANTIQUITY

"The last period of ancient logic is characterized by the following traits, some of which have already been touched upon (chapter 2 C). First of all, as far as we know, it is no longer a creative period: we cannot quote a single logician comparable -- not only with Aristotle, Diodorus or Chrysippus, but even with Theophrastus. Logic seems to have still been much studied, however, and its knowledge must have been widely spread. At the same time there was the unfortunate phenomenon of the struggle between the Peripatetic and the Stoic Schools. Slowly a mixture of both trends formed. Thus, we hear that Boethus of Sidon, pupil of Andronicus Rhodos, who lived at the time of Augustus and was the head of the Peripatetic School, asserted the priority of the Stoic undemonstrated in regard to the categorical syllogism; syncretism is often met with later on, e.g. in the *Dialectical Introduction* of Galenus. On the other hand there are still some rigid peripateticians who deny any merit to the Stoic-Megaric School; Alexander of Aphrodisias is an instance. In the long run, however, a kind of commonly received doctrine, composed of rather poor remains of both Aristotelian and Stoic-Megaric doctrines was formed. Yet the work of the commentators and

authors of textbooks has not been, as it seems, completely irrelevant to logic -- here and there they probably were able to bring some complements and perfections of the old doctrines. Unfortunately, we know nearly nothing about their work.

The Logicians.

There follows here a (incomplete) list of important logicians who lived during that long period. Ariston of Alexandria is reported to have stated the "subaltern modes" of the syllogism (1); he lived during the II century A.D. Another important logician of the same period is the famous physician Galenus (129 - c. 199 A.D.); his "Dialectical Introduction" is the only ancient Greek textbook of logic preserved; it has been studied by Fr. Stakelum. His contemporary Apuleius of Madaura (125 A.D.) wrote among others a Latin book *Peri hermenias* which seems to be of great interest. Alexander of Aphrodisias, who lived during the third century, is probably one of the most penetrating logicians of the peripatetic School and one of the best commentators of the Organon in history. Porphyrius of Thyrsus (232/3 - beginning of the IV century) is another important commentator of Aristotle, if inferior to Alexander: his Introduction was destined to have a brilliant career during the Middle Ages. Sextus Empiricus (3rd century) our main source for the Stoic-Megaric School can hardly be called a logician, yet he knew logic well and some of his criticisms might be of interest. Later authors - such as Iamblichus of Chalkis c. 330), Themistius (330-390), Ammonius Hermeiou, the disciple of Proclus, David Ioannes Philoponus (died after 640), are of far lesser importance. But at the end of our period we have again some men of interest: Martianus Capella, who wrote between 410 and 439 his celebrated "De nuptiis Philosophiae et Mercurii" with a book devoted to logic; Simplicius, pupil of Ammonius, and the last important Athenian Philosopher (he was driven from Athens by a decree of Justinian in 529) is also an intelligent logician; finally Boethius, himself a not very good thinker, is highly important because of his influence on the

Middle Ages, but also because of the mass of information his logical works contain." (pp. 103-104)

Notes

(1) *Apul. 193, 16ff.*; there is much confusion in this text.

From: I. M. Bochenski, *Ancient Formal Logic*, Amsterdam: North-Holland, 1951.

"Very little is known about the development of logic from c. 100 BCE to c. 250 CE. It is unclear when Peripatetics and the Stoics began taking notice of the logical achievements of each other. Sometime during that period, the terminological distinction between *categorical syllogisms*, used for Aristotelian syllogisms, and *hypothetical syllogisms*, used not only for those by Theophrastus and Eudemus but also for the Stoic propositional-logical syllogisms, gained a foothold. In the first century BCE, the Peripatetics Ariston of Alexandria and Boethus of Sidon wrote about syllogistic. Ariston is said to have introduced the so-called *subaltern* syllogisms (Barbari, Celaront, Cesaro, Camestrop and Camenop) into Aristotelian syllogistic (*Apul.Int.* 213.5–10), that is, the syllogisms one gains by applying the subalternation rules (that were acknowledged by Aristotle in his *Topics*): From "A holds of every B" infer "A holds of some B" From "A holds of no B" infer "A does not hold of some B" to the conclusions of the relevant syllogisms. Boethus suggested substantial modifications to Aristotle's theories: He claimed that all categorical syllogisms are complete and that hypothetical syllogistic is prior to categorical (*Gal.Inst.Log.* 7.2), although we are not told prior in which way. The Stoic Posidonius (c.135–c.51 BCE) defended the possibility of logical or mathematical deduction against the Epicureans and discussed some syllogisms he called *conclusive by the force of an axiom*, which apparently included arguments of the type "As the 1st is to the 2nd, so the 3rd is to the 4th; the ratio of the 1st to the 2nd is double; therefore the ratio of the 3rd

to the 4th is double,” which was considered conclusive by the force of the axiom “things which are in general of the same ratio, are also of the same particular ratio” (Gal. *Inst. Log.* 18.8). At least two Stoics in this period wrote a work on Aristotle’s *Categories*. From his writings we know that Cicero was knowledgeable about both Peripatetic and Stoic logic; and Epictetus’s discourses prove that he was acquainted with some of the more taxing parts of Chrysippus’s logic. In all likelihood there existed at least a few creative logicians in this period, but we do not know who they were and what they created. The next logician of rank, if of lower rank, of whom we have sufficient evidence is Galen (129–199 or 216 CE), whose greater fame was as a physician. He studied logic with both Peripatetic and Stoic teachers and recommended to avail oneself of parts of either doctrine, as long as it could be used for scientific demonstration. He composed commentaries on logical works by Aristotle, Theophrastus, Eudemus, and Chrysippus, as well as treatises on various logical problems and a major work titled *On Demonstration*. All these are lost except for some information in later texts, but his *Introduction to Logic* has come down to us almost in full. In *On Demonstration*, Galen developed, among other things, a theory of compound categorical syllogisms with four terms, which fall into four figures, but we do not know the details. He also introduced the so-called relational syllogisms, examples of which are “A is equal to B, B is equal to C; therefore A is equal to C” and “Dio owns half as much as Theo; Theo owns half as much as Philo. Therefore Dio owns a quarter of what Philo owns.” (Gal. *Inst. Log.* 17–18). All relational syllogisms Galen mentions have in common that they are not reducible in either Aristotle’s or Stoic syllogistic, but it is difficult to find further formal characteristics that unite them all. In general, in his *Introduction to Logic*, he merges Aristotelian Syllogistic with a strongly Peripatetic reinterpretation of Stoic propositional logic. The second ancient introduction to logic that has survived is Apuleius’s (second century CE) *De Interpretatione*. This Latin text, too, displays knowledge of Stoic and Peripatetic logic; it contains the first full presentation of the

square of opposition, which illustrates the logical relations between categorical sentences by diagram. Alcinous, in his *Handbook of Platonism* 5, is witness to the emergence of a specifically Platonist logic, constructed on the Platonic notions and procedures of division, definition, analysis, and hypothesis, but there is little that would make a logicians heart beat faster. Sometime between the third and sixth century CE, Stoic logic faded into oblivion to be resurrected only in the twentieth century in the wake of the (re)discovery of propositional logic. The surviving, often voluminous, Greek commentaries on Aristotle's logical works by Alexander of Aphrodisias (fl. c.200 CE), Porphyry (234–c.305), Ammonius Hermēiou (fifth century), John Philoponus (c. 500), and Simplicius (sixth century), and the Latin ones by Anicius Manlius Severinus Boethius (c.480–524) have their main importance as sources for lost Peripatetic and Stoic works. Still, two of the commentators deserve special mention: Porphyry, for writing the *Isagoge* or *Introduction* (that is, to Aristotle's *Categories*), in which he discusses the five notions of genus, species, differentia, property, and accident as basic notions one needs to know to understand the *Categories*. For centuries, the *Isagoge* was the first logic text a student would tackle, and Porphyry's five predicables (which differ from Aristotle's four) formed the basis for the medieval doctrine of the *quinque voces*. The second is Boethius. In addition to commentaries, he wrote a number of logical treatises, mostly simple explications of Aristotelian logic, but also two very interesting ones: (1) His *On Topical Differentiae* bears witness of the elaborated system of topical arguments that logicians of later antiquity had developed from Aristotle's *Topics* under the influence of the needs of Roman lawyers. (2) His *On Hypothetical Syllogisms* systematically presents wholly hypothetical and mixed hypothetical syllogisms as they are known from the early Peripatetics; it may be derived from Porphyry. Boethius's insistence that the negation of "If it is A, it is B" is "If it is A, it is not B" suggests a suppositional understanding of the conditional, a view for which there is also some evidence in Ammonius, but

that is not attested for earlier logicians. Historically, Boethius is most important because he translated all of Aristotle's *Organon* into Latin, and thus these texts (except the *Posterior Analytics*) became available to philosophers of the medieval period." (pp. 407-409)

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Chrysippus (c. 280 - c. 207 BC)

[Bibliography on the Early Stoic Logic](#)

Epicureans

Philodemus of Gadara (c. 110 - c. 40 BC)

Other Greek Logicians

Claudius Galenus (129 - 200)

Sextus Empiricus (160 - 210)

Diogenes Laërtius (3rd century)

Greek Commentators of Aristotle's Logical Works

Alexander of Aphrodisias (end of 2nd century)

Porphyry (234? - 305?)

Ammonius Hermeiou (c. 435/445 - 517/526)

Simplicius of Cilicia (c. 490 - c. 560)

John Philoponus (c. 490 - c. 570)

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77; 5.II The 'Megarics' 83; 5.II The Stoics; Chapter 6: Language by Dirk M. Schenkeveld; 6.I Linguistics 177; 6.II Rhetoric 216; 6.III Poetics 221-225.

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8. ———. 1990. "Logical Form and Logical Matter." In *Logica, Mente E Persona. Studi Sulla Filosofia Antica*, edited by Alberti, Antonina, 7-119. Firenze: Leo S. Olschki Editore.
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14. Bobzien, Susanne. 2000. "Wholly Hypothetical Syllogisms." *Phronesis. A Journal for Ancient Philosophy*:87-137.
"In antiquity we encounter a distinction of two types of hypothetical syllogisms. One type are the 'mixed hypothetical syllogisms'. The other type is the one to which the present paper is devoted. These arguments went by the name of 'wholly hypothetical syllogisms'. They were thought to make up a self-contained system of valid arguments. Their paradigm case consists of two conditionals as premisses, and a third as conclusion. Their presentation, either schematically or by example, varies in different authors. For instance, we find 'If (it is) A, (it is) B; if (it is) B, (it is) C; therefore, if (it is) A, (it is) C'. The main contentious point about these arguments is what the ancients thought their logical form was. Are A, B, C schematic letters for terms or propositions? Is 'is', where it occurs, predicative, existential, or veridical? That is, should '*A est*' be translated as 'it is an A', 'A exists', 'As exist' or 'It is true/the case that A'? If A, B, C are term letters, and 'is' is predicative, are the conditionals quantified propositions or do they contain designators? If one cannot answer these questions, one can hardly claim to know what sort of arguments the wholly hypothetical syllogisms were. In fact, all the above-mentioned possibilities have been taken to describe them correctly. In this paper I argue that it would be mistaken to assume that in antiquity there was one prevalent understanding of the logical form of these arguments even if the ancients thought they were all talking about the same kind of argument. Rather, there was a complex development

in their understanding, starting from a term-logical conception and leading to a propositional-logical one. I trace this development from Aristotle to Philoponus and set out the deductive system on which the logic of the wholly hypothetical syllogisms was grounded."

15. ———. 2000. "Why the Order of the Figures of the Hypothetical Syllogisms Was Changed." *Classical Quarterly* no. 50:247-251.

16. ———. 2002. "The Development of *Modus Ponens* in Antiquity: From Aristotle to the 2nd Century Ad." *Phronesis. A Journal for Ancient Philosophy* no. 47:359-394.

"*Aristotelian logic*, as it was taught from late antiquity until the 20th century, commonly included a short presentation of the argument forms *modus (ponendo) ponens*, *modus (tollendo) tollens*, *modus ponendo tollens*, and *modus tollendo ponens*. In late antiquity, arguments of these forms were generally classified as 'hypothetical syllogisms'. However, Aristotle did not discuss such arguments, nor did he call any arguments 'hypothetical syllogisms'. The Stoic indemonstrables resemble the *modus ponens/tollens* arguments. But the Stoics never called them 'hypothetical syllogisms'; nor did they describe them as *ponendo ponens*, etc. The tradition of the four argument forms and the classification of the arguments as hypothetical syllogisms hence need some explaining. In this paper, I offer some explanations by tracing the development of certain elements of Aristotle's logic via the early Peripatetics to the logic of later antiquity. I consider the questions: How did the four argument forms arise? Why were there four of them? Why were arguments of these forms called 'hypothetical syllogisms'? On what grounds were they considered valid? I argue that such arguments were neither part of Aristotle's dialectic, nor simply the result of an adoption of elements of Stoic logic, but the outcome of a long, gradual development that begins with Aristotle's logic as preserved in his *Topics*

and *Prior Analytics*; and that, as a result, we have a Peripatetic logic of hypothetical inferences which is a far cry both from Stoic logic and from classical propositional logic, but which sports a number of interesting characteristics, some of which bear a cunning resemblance to some 20th century theories."

17. ———. 2002. "Some Elements of Propositional Logic in Ammonius." In *Interpretation Und Argument*, 103-119. Würzburg: Königshausen & Neumann.
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"The text of the *Institutio logica* is not found in Kühn (*) because its sole surviving MS was first published, not long after its discovery, in 1844, and thus too late for inclusion. The reasons for once considering it spurious are unconvincing. Galen's *Institutio* is one of our main witnesses for a hypothetical syllogistic which predates Stoic propositional logic. Galen draws from a number of different sources and theories including the "ancient philosophers" (*hoi palaioi ton philosophon*), including Chrysippus; and the "more recent" (*hoi neoterai*), post-Chrysippean Stoics or logicians of other schools who adopted Stoic terminology and theory."

[* Karl Gottlob Kühn, *Claudii Galeni Opera Omnia*. Leipzig: C. Cnobloch, 1821-1833, 19 volumes, reprinted Hildesheim, Georg Olms, 1964-1997].

19. Bochenski, Joseph. 1937. "Notes Historiques Sur Les Propositions Modales." *Revue de Sciences Philosophiques et Théologiques* no. 26:673-692.
20. ———. 1951. *Ancient Formal Logic*. Amsterdam: North-Holland.
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Megaric School 77; VI. The last period 103; Bibliography 110; Index of Greek terms 118; Index of names 121.

"The present book is intended to supply mathematical logicians with a synthetic outline of the main aspects of ancient formal logic which are known in the present state of research. In order to avoid misunderstandings, each of the above terms has to be explained.

The reader is supposed to be a *mathematical* logician, i.e., to know both the symbolisms and the (English) language of contemporary mathematical logic; those who are not acquainted with it must be warned that several terms used in that language have a particular meaning, different from the meaning attributed to the terms of the same form in other contexts.

The subject of the book is *formal* Logic; by this we understand a science such as was developed by Aristotle in his *Prior Analytics*, i.e., essentially the theory of syllogisms as defined in *An. Pr. A 1, 24b 18-20*. Along with the syllogisms proper, the structure of the sentences and semiotics will be studied; contrariwise, not only all ontological, psychological and epistemological problems, but even methodological topics will be omitted in so far as possible. This is perhaps regrettable; but there are several good books on those subjects while there is *none* on ancient formal logic as a whole - and the limitation of space forced us to omit everything which was not strictly formal.

By ancient formal logic, Greek logic from the beginning of Greek Philosophy until the end of Antiquity is meant. We have, it is true, some Latin textbooks of formal logic - but they all seem based on, or even copied from, Greek sources. It is perhaps worthwhile mentioning that there is also an ancient *Indian* Logic; this lies, however, outside our present scope.

What is offered here is an *outline*, moreover a very fragmentary one. A complete account of ancient formal logic cannot be written at the present date because of the lack of

scientific monographs on individual logicians and topics. The initial aim of the author was to limit himself to a reassumption of monographs already published; in the course of the work he was compelled, however, to use some of his own unpublished researches on Aristotle and had the exceptional fortune of reading the manuscript of Dr Benson Mates' book on Stoic logic. He also collected some new data on other topics. In spite of this, considerable parts of ancient logic have hardly been touched upon - e.g. the logic of the Commentators - while others, Aristotle included, have been treated in a way which is far from being complete. On the whole, what the book contains may be considered as a kind of starting point for future research. Yet, it is hoped that even this will supply logicians with some information difficult to be found elsewhere and give a general idea of what the ancient logic was and how it developed." pp. 1-2

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Indice dei Contenuti: Nota liminare 9;

LA NEGAZIONE ARISTOTELICA

1. La sintesi dichiarativa: supplemento di frase e contenuto descrittivo 11; 2. Negazione semplice e affermazione

trasposta 17; 3. Le asserzioni indeterminate: trasformazione predicativa ed equivocità composta 26; 4. Portata esistenziale dell'affermazione 36; 5. Negative categoriche 41; LA NEGAZIONE STOICA

1. Frammenti e testimonianze 47; 2. La teoria stoica degli *axiomata* 48; 3. Negazione semplice e composta 51; 4. Opposti contraddittori 57; 5. Ambiguità della negazione ordinaria 67;

APPENDICE - IL PAPIRO PARIGINO 2

Testo e traduzione 86; Commento 107; Bibliografia 122-126

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"Après avoir rappelé les principales concordances et divergences entre la terminologie logique latine avant et après Boèce, on examine deux choix propres soit à l'auteur du *Peri hermeneias* (PH) transmis sous le nom d'Apulée, soit à la première tradition logique de langue latine: celui de "pars" ("particula") et celui de "formula" ("forma" chez Martianus Capella), choix auxquels Boèce substituera "terminus" et "figura", pour rendre le notion de "terme" (*horos* chez Aristote) et celle de "figure (du syllogisme)" (*skhema* chez Aristote). Dans chaque cas, on passe en revue la distribution des emplois dans le PH et chez Martianus, en

signalant les attestations antérieures ou postérieures à ces traités. On s'interroge enfin sur les raisons possibles du choix effectué par l'auteur du PH et maintenu ou modifié par Martianus Capella.

28. Corcoran, John. 1972. "Conceptual Structure of Classical Logic." *Philosophy and Phenomenological Research* no. 33:25-47.

29. ———, ed. 1974. *Ancient Logic and Its Modern Interpretations*. Dordrecht: Reidel.

Proceedings of the Buffalo Symposium on modernist interpretations of ancient logic, 21 and 22 April, 1972. Contents: Preface IX; Part One: Ancient semantics; Norman Kretzmann: Aristotle on spoken sound significant by convention 3; Ronald Zirin: Inarticulate noises 23; Newton Garver: Notes for a linguistic reading of the *Categories* 27; Part Two: Modern research in ancient logic; Ian Mueller: Greek mathematics and Greek logic 35; John Mulhern: Modern notations and ancient logic 71; Part Three: Aristotle's logic; John Corcoran: Aristotle's natural deduction system 85; Mary Mulhern: Corcoran on Aristotle's logical theory 133; Part Four: Stoic logic; Josiah Gould: Deduction in Stoic logic 151; John Corcoran: Remarks on Stoic deduction 169; Part Five: Final session of the Symposium; John Corcoran: Future research on ancient theories of communication and reasoning 185; A panel discussion on future research in ancient logical theory 189; Index of names 209-211.

"During the last half century there has been revolutionary progress in logic and in logic-related areas such as linguistics. Historical knowledge of the origins of these subjects has also increased significantly. Thus, it would seem that the problem of determining the extent to which ancient logical and linguistic theories admit of accurate interpretation in modern terms is now ripe for investigation. The purpose of the symposium was to gather logicians, philosophers, linguists, mathematicians and philologists to

present research results bearing on the above problem with emphasis on logic. Presentations and discussions at the symposium focused themselves into five areas : ancient semantics, modern research in ancient logic, Aristotle's logic, Stoic logic, and directions for future research in ancient logic and logic-related areas.

Seven of the papers which appear below were originally presented at the symposium. In every case, discussion at the symposium led to revisions, in some cases to extensive revisions. The editor suggested still further revisions, but in every case the author was the final judge of the work that appears under his name.

In addition to the seven presented papers, there are four other items included here. Two of them are papers which originated in discussions following presentations. Zirin's contribution is based on comments he made following Kretzmann's presentation. My 'Remarks on Stoic Deduction' is based on the discussion which followed Gould's paper. A third item contains remarks that I prepared in advance and read at the opening of the panel discussion which was held at the end of the symposium. The panel discussion was tape-recorded and the transcript proved of sufficient quality to merit inclusion in these proceedings with a minimum of editing." (From the Preface)

30. ———. 2006. "Schemata: The Concept of Schema in the History of Logic." *Bulletin of Symbolic Logic* no. 12:219-240.

"Schemata have played important roles in logic since Aristotle's *Prior Analytics*. The syllogistic figures and moods can be taken to be argument schemata as can the rules of the Stoic propositional logic. Sentence schemata have been used in axiomatizations of logic only since the landmark 1927 von Neumann paper [31]. Modern philosophers know the role of schemata in explications of the semantic conception of truth through Tarski's 1933 Convention T [42]. Mathematical logicians recognize the

role of schemata in first-order number theory where Peano's second-order Induction Axiom is approximated by Herbrand's Induction-Axiom Schema [23]. Similarly, in first-order set theory, Zermelo's second-order Separation Axiom is approximated by Fraenkel's first-order Separation Schema [17]. In some of several closely related senses, a schema is a complex system having multiple components one of which is a *template-text* or *scheme-template*, a syntactic string composed of one or more "blanks" and also possibly significant words and/or symbols. In accordance with a *side condition* the template-text of a schema is used as a "template" to specify a multitude, often infinite, of linguistic expressions such as phrases, sentences, or argument-texts, called *instances* of the schema. The side condition is a second component. The collection of instances may but need not be regarded as a third component. The instances are almost always considered to come from a previously identified language (whether formal or natural), which is often considered to be another component. This article reviews the often-conflicting uses of the expressions 'schema' and 'scheme' in the literature of logic. It discusses the different definitions presupposed by those uses. And it examines the ontological and epistemic presuppositions circumvented or mooted by the use of schemata, as well as the ontological and epistemic presuppositions engendered by their use. In short, this paper is an introduction to the history and philosophy of schemata."

[17] Abraham Fraenkel - *Part I. Historical introduction* - to Paul Bernays - *Axiomatic set theory* (1958) - Reprint Dover 1991 pp. 3-35.

[23] Jacques Herbrand, *Logical Writings*, (W. Goldfarb, Tr. Goldfarb, and van J. Heijenoort, editors), Harvard University Press, Cambridge, MA, 1971

[31] Johann von Neumann, *Zur Hilbertschen Beweistheorie*, *Mathematische Zeitschrift*, vol. 26 (1927), pp. 1-46.

[42] Adam Tarski, *The concept of truth in the languages of the deductive sciences*, *Prace Towarzystwa Naukowego Warszawskiego, Wydział III Nauk Matematyczno-Fizycznych*, vol. 34 (1933), reprinted in [50], pp. 13-172; expanded English translation in [48], pp. 152-278.

[48] Adam Tarski, *Logic, Semantics, Metamathematics, papers from 1923 to 1938*, 2nd ed., Hackett, Indianapolis, 1983, edited with introduction and analytic index by J. Corcoran (first edition 1956)

[50] Jan Zygmunt (editor), *Alfred Tarski, Pisma Logiczno-Filozoficzne, 1 Prawda*, Wydawnictwo Naukowe PWN, Warsaw, 1995

31. De Lacy, Phillip H. 1937. "Contributions of the Herculanean Papyri to Our Knowledge of Epicurean Logic." *Transactions and Proceedings of the American Philological Association* no. 68:318-325.
32. Di Cesare, Donatella. 1980. *La Semantica Nella Filosofia Greca*. Roma: Bulzoni.
33. Dumont, Jean-Paul. 2005. "Confirmation Et Disconfirmation." In *Science and Speculation. Studies in Hellenistic Theory and Practice*, edited by Barnes, Jonathan, Brunschwig, Jacques, Burnyeat, Myles and Schofield, Malcolm, 273-303. Cambridge: Cambridge University Press.
34. Ebbesen, Sten. 2005. "Theories of Language in the Hellenistic Age and in the Twelfth and Thirteenth Centuries." In *Language and Learning. Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 299-319. Cambridge: Cambridge University Press.

"It is a generally accepted view that 'philosophy of language' as well as 'grammar' as a philosophical discipline were invented in antiquity by the Stoics or by grammarians inspired by them. It is also the accepted view that these achievements were passed on to the Latin West in the Middle Ages through authors like Priscian and Boethius, to

be augmented and refined by the schoolmen from the beginning of the twelfth century on. But though the general route of the tradition that indirectly relates to the beginning of linguistic philosophy in Hellenistic times is uncontested, there is little knowledge about any direct influence of the Hellenistic philosophers on that period. Sten Ebbesen takes his readers into the relatively uncharted waters of the influence of Hellenistic philosophy on the Middle Ages by tracing Stoic influence on certain issues. Ebbesen focuses on three points. First he points out how the question of 'imposition', i.e. the assignment of phonemes to natural things was taken up by the members of the Porretan school in order to show how moral and rational vocabulary arose through a transformation of the natural vocabulary, so as to allow discussion of non-natural phenomena in the sphere of culture, reason, and even theology. Second he shows that Boethius of Dacia and other members of the 'modist school' in the late thirteenth century developed a theory of formal grammar and logic, a theory that showed how the 'modes' of signifying, supplemented by a theory of representing logical relationships, is based on modes of understanding and ultimately related to the modes of being. Though among the modists the conviction prevailed that language is based on convention they did not hold that expressions are introduced at random; hence etymology, as first adumbrated in Plato's *Cratylus*, has its role to play in linguistic theory. Finally Ebbesen shows that the static conception of the modists that assumed invariable rules of language was changed into a dynamic theory of language by Roger Bacon, whose theory allowed for changing rules of language without loss of intelligibility.

Thus we find in the Middle Ages ghost-like replicas of the controversies among the ancient philosophers of language, whether it concerns the 'imposition of words' inspired by Plato's *Cratylus*, the quest to account for the relation

between language and the objects in the world that was a main concern of the Stoics, and the controversy between analogist and anomalist accounts of language. Ebbesen does not claim that those medieval discussions were based on any direct knowledge of the Hellenistic philosophers or on that of Plato's *Cratylus*. He holds, however, that these medieval positions could not have been developed had there not been the rich tradition of the Hellenistic age, passed on to them in the reflections of Boethius and Priscian." From the *Introduction* by Dorothea Frede and Brad Inwood, pp. 12-13

35. Everson, Stephen, ed. 1994. *Language*. Cambridge: Cambridge University Press.
36. Gabbay, Dov, and Woods, John, eds. 2004. *Greek, Indian and Arabic Logic*. Amsterdam: Elsevier.
Handbook of the History of Logic: vol. 1.
Contents: Preface by Dov Gabbay and John Woods VII; List of contributors IX; Logic before Aristotle: development or birth? by Julius Moravcsik 1; Aristotle' early logic by John Woods and Andrew Irvine 27; Aristotle's underlying logic by George Boger 101; Aristotle's modal syllogism by Fred Johnson 247; Indian logic by Jonardon Ganeri 309; The Megarians and the Stoics by Robert R. O'Toole and Raymond E. Jennings 397; Arabic logic by Tony Street 523; The translation of Arabic works on logic into Latin in the Middle Ages and Renaissance by Charles Burnett 597; Index 607-628
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Reprinted in: A. Graeser - *Issues in the philosophy of language past and present* - Bern, Peter Lang, 1999, pp. 9-

39. Henle, Paul. 1949. "On the Fourth Figure of the Syllogism." *Philosophy of Science* no. 16:94-104.

40. Huby, Pamela M. 2004. "Elementary Logic in the Ancient World." *Bulletin of the Institute of Classical Studies* no. 47:119-128.

"Formal education in elementary logic began in Plato's Academy and can be traced into the Middle Ages. Evidence from Aristotle, *Prior analytics*, Apuleius, *De interpretatione*, Galen, *Institutio logica*, and anonymous sources suggests that many works may have been written to be memorized by students. The views of the Peripatetics and Stoics, originally different, coalesced, and later handbooks covered both at an elementary level. The origin of a concept of a syllogistic mood is obscure; it may have existed for some time before appearing first in Apuleius."

41. Hurst, Martha. 1935. "Implication in the Fourth Century B.C." *Mind* no. 44:484-495.

"Modern analyses of the nature of necessary connection have given rise to more paradoxes than they have solved. A familiarity with the controversy between Diodorus and Philo which took place in the Fourth Century B.C. might perhaps have made unnecessary the anguish which modern logicians have suffered. (1)

The dispute is mentioned in passing by Cicero (2) and is discussed in two places by Sextus Empiricus (3). The persons concerned in the dispute are named Diodorus and Philo, and are, I think, to be identified as the Megarians, Diodorus Cronus and his pupil Philo."

(1) My attention was first called to this dispute by a notice in C. S. Peirce, *Collected Papers* 3, 441. In being aware of this dispute Peirce is an exception among modern logicians. But he failed to grasp its full significance; so that his knowledge did not save him from the mistakes which they have made.

(2) *Academica Priora*, II, 143.

(3) *Pyrrhoneion Hypotyposeon* II, 110, *Adversus Mathematicos* VIII, 113 ff.

42. Ildefonse, Frédérique. 1997. *La Naissance De La Grammaire Dans L'antiquité Grecque*. Paris: Vrin.
43. Jedan, Christoph, and Strobach, Niko. 2002. *Modalities by Perspective. Aristotle, the Stoics and a Modern Reconstruction*. Sankt Augustin: Academia Verlag.
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Contents: Preface V-VIII; I. The origin of logic as a science 5; II. Concepts, terms, definitions, ideas, categories 20; III. Judgments, subject and predicate 43; IV. Syllogisms 60; V. Induction: ancient and modern logic 75; Books cited 89; Index 91-95.
"The five chapter of this little book represent the manuscript of a series of five special lectures which I gave at Columbia University by invitation of the Department of Philosophy and the Department of Greek and Latin." (Preface, V).
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48. Lee, Tae-Soo. 1984. *Die Griechische Tradition Der Aristotelischen Syllogistik in Der Spätantike*. Göttingen: Vandenhoeck & Ruprecht.

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"The paper is a study of the logic of existence, negation, and order in the Neoplatonic tradition. The central idea is that Neoplatonists assume a logic in which the existence predicate is a comparative adjective and in which monadic

predicates function as scalar adjectives that nest the background order. Various scalar predicate negations are then identifiable with various Neoplatonic negations, including a privative negation appropriate for the lower orders of reality and a hyper-negation appropriate for the higher. Reversion to the One can then be explained as the logical inference of hyper-negations from mundane knowledge. Part I develops the relevant linguistic and logical theory, and Part II defends Wolfson and the scalar interpretation against the more traditional Aristotelian understanding of Whittaker and others of reversion as intensional abstraction."

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"By 'logic' I mean 'the analysis of argument or proof in terms of form'. The two main examples of Greek logic are, then, Aristotle's syllogistic developed in the first twenty-two chapters of the *Prior Analytics* and Stoic propositional logic as reconstructed in the twentieth century. The topic I shall consider in this paper is the relation between Greek logic in this sense and Greek mathematics. I have resolved the topic into two questions: (1) To what extent do the principles of Greek logic derive from the forms of proof characteristic of Greek mathematics? and (2) To what extent do the Greek mathematicians show an awareness of Greek logic?

Before answering these questions it is necessary to clear up two preliminaries. The first is chronological. The *Prior Analytics* probably predates any surviving Greek mathematical text. There is, therefore, no possibility of checking Aristotle's syllogistic against the actual mathematics which he knew. On the other hand, there is no reason to suppose that the mathematics which he knew differs in any essential way, at least with respect to proof techniques, from the mathematics which has come down to us." p. 35

"The paper which follows has three main sections. In the first I discuss the character of Euclidean reasoning and its relation to Aristotle's syllogistic. In the second I consider the passages in the *Prior Analytics* in which Aristotle refers to mathematics; my purpose here is to determine whether reflection on mathematics influenced his formulation of syllogistic. In both sections my conclusions are mainly negative. Euclid shows no awareness of syllogistic or even of the basic idea of logic, that validity of an argument depends on its form. And Aristotle's references to mathematics seem to be either supportive of general points about deductive reasoning or, when they relate specifically to syllogistic,

false because based on syllogistic itself rather than on an independent analysis of mathematical proof.

In the third main section of the paper I consider the influence of mathematics on Stoic logic. As far as Chrysippean propositional logic is concerned, my conclusions are again negative. However, it is clear that at some time logicians, probably Stoic, began to consider mathematical proof on its own terms. Although they never developed what I would call a logic to cover mathematical proof, they at least realized the difference between it and the logical rules formulated in antiquity. Much of the third section is devoted to an attempt to reconstruct in outline the history of logical reflections on mathematics in the last two centuries B.C. In conclusion I recapitulate briefly my conclusions about the relation between Greek mathematics and logic." p. 37

67. Mulhern, John. 1974. "Modern Notations and Ancient Logic." In *Ancient Logic and Its Modern Interpretations*, edited by Corcoran, John, 71-82. Dordrecht: Reidel.
- "To what extent does ancient logic admit of accurate interpretation in modern terms? Blanché [3] and Dürr [14] published general surveys of research on ancient logic in the mid-1950's. My aim in the present paper is to identify studies made available during the quarter-century 1945-1970 that illustrate the influence modern notations have had on our understanding of ancient logical texts. Accepting Bochenski's division of ancient logic into four temporally distinct stages, I mention research on the Prearistotelian, Aristotelian, Stoic and Commentatorial logics in Sections 1-4. In Section 5, I offer some generalizations on the utility of modern notations in writing the history of ancient logic." p. 71

"At the beginning of this paper, I asked to what extent ancient logic admits of accurate interpretation in modern terms. While no final answer to this question will be available until research in the field has gone a good deal

further than it has so far, still the progress since 1945 has been remarkable, and it is not too early to consider its causes. In his history of the history of logic, Bochenski wrote as follows:

The rise of modern history of logic concerning all periods save the mathematical was made possible by the work of historians of philosophy and philologists in the 19th century. These published for the first time a series of correct texts edited with reference to their context in the history of literature. But the majority of ancient philologists, medievalists and Sanskrit scholars had only slight understanding of and little interest in formal logic. History of logic could not be established on the sole basis of their great and laborious work.

For its appearance we have to thank the fact that formal logic took on a new lease of life and was reborn as mathematical. *Nearly all* the more recent researches in this history were carried out by mathematical logicians or by historians trained in mathematical logic. ([5e], pp. 9-10.)

The trained researchers who have worked on the ancient materials have had to do much more than merely transcribe into modern notations logical treatises originally written in ancient natural languages. Just finding suitable transcriptions has had to wait on considerable analysis of the ancient texts. Transcription into modern notations presupposes some community of understanding and purpose with the ancient logicians, and this community is something that needs to be argued for. In general, a department of ancient logic lends itself to being dealt with in notation if and only if its corresponding department of modern logic lends itself to being dealt with in notation. Logistic systems and their interpretations lend themselves to this to a great extent, theoretical syntax and especially semantics to a much lesser extent. Where a modern notation follows or reproduces or elucidates the logical form of a sentence or inference or schema that interests an

ancient logician, then its use is in order. The studies discussed in Sections 1-4 of this paper point to the conclusion that the judicious use of modern notations has been one cause of progress -- over the last two decades and a half -- in our understanding of ancient logic." (pp. 81-82)

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- "This book is intended as the first part of a history of those problems and theories in the domain of philosophical semantics which nowadays are commonly referred to as problems and theories about the nature and the status of propositions. Although the conceptual apparatus and the

terminology by means of which questions concerning propositions were asked and answered have considerably varied from period to period, the main types of disputes and solutions have remained remarkably constant. One of the aims of this study is precisely to trace the vicissitudes of the vocabulary in which this refractory topic was treated in the remote past. As is evident from the Bibliography, many parts of the field have been explored by predecessors. Guided by their results, I have tried to fill in more details and to design a provisional map of the area as a whole."
(from the Preface)

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Dissertation presented to the University of Pennsylvania (available on ProQuest).
"From Aristotle onward, formal logic was an element of ancient Greek dialectic (*dialektiké*). Aristotle's *Prior Analytics* (4th century BCE) is the earliest evidence of a formal logic in antiquity. The evidence for the formal logic of the Stoic philosopher Chrysippus (3rd century BCE) is fragmentary; nonetheless it makes clear that not more than a century or so after *Prior Analytics*, Chrysippus revolutionized formal logic. The scholarship on Stoic logic has not yet presented the history of dialectic from Aristotle to Chrysippus as an intelligible narrative. Without such a narrative, one cannot explain what, in general, motivated the innovations of Chrysippus, what made Stoic logic coherent as a unified project, or what relationship that project had to earlier work in logic. This dissertation approaches the problem through the presentation and interpretation of the ancient source material. First it describes the logical doctrines of Aristotle, Theophrastus, and the 'Megarics' in such a way as to make clear what questions these predecessors left for Chrysippus. It then describes how Chrysippus addressed these questions. Finally, it uses the resulting narrative to give a detailed account of Stoic formal logic. The dissertation yields five principal conclusions. First, neither the Peripatetics or the

'Megarics' described logical forms of propositional logic; Chrysippus was the first to do so. Second, the guiding aim of Chrysippus' logic was to avoid adopting a semantic stance in describing logical forms and explaining logical relationships. Third, the Stoics distinguished 'valid' (*hugies*) from 'true' (*aléthes*), so that *sunartésis* is a standard for the validity rather than the truth of the Stoic conditional (*sunhémmenon*). Fourth, the Stoics produced derivations for categorical arguments in their deduction system. Fifth, the Stoic deduction system is roughly analogous to the first-order fragment of Frege's system, except on two points: it most likely was not designed to accommodate the use of polyadic predicates with multiple quantifiers, although the possibility for doing so inheres in its approach to the analysis of propositions, and it uses the 'natural' approach rather than the 'axiomatic' approach of Frege."

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 "This paper offers a logical analysis of Scepticism. It is shown that Dogmatism, Academism and Scepticism as characterized by Sextus Empiricus in *Outlines of Pyrronism* form a variety of views which can be ordered by an interpretation of the classical logical square. In particular, Scepticism appears as a conjunction of the negations of Dogmatism and Academism. The next problem concerns the logic proper for Scepticism. Logic based on a dual of the consequence operation is proposed as satisfying intuitive requirements associated with doubting. Finally, the attitude of the sceptic toward logic is discussed. In particular, it is argued that the principle of isosteny trivializes scepticism if it is applied to logic."

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Peripatetic Logic: Eudemus of Rhodes and Theophrastus of Eresus

EUDEMUS OF RHODES AND THEOPHRASTUS OF ERESUS CONTRIBUTIONS ON LOGIC

This page use the font Lucida Sans Unicode for logical symbols.

“Aristotle's successor as director of the Lyceum was Theophrastus, his friend and disciple; Eudemus, another of the Stagirite's important disciples should also be mentioned. Other philosophers belonging to the Peripatetic school were: Aristoxenus, Dikaiarchos, Phantias, Straton, Duris, Chamaeleon, Lycon, Hieronymus, Ariston, Critolaus, Phormio, Sotion, Hermippus, Satyrus and others. Straton even succeeded Theophrastus as director of the Lyceum but his name and those of the other Peripatetics of Aristotle's old school should not be considered in a history of logic as they were mainly concerned with history and the natural sciences. Theophrastus rejoiced in an enormous prestige at this time and for long afterwards. Diogenes Laertius attributes a tremendous number of works to him. Of them a significant proportion are writings on logic: *Analytica Priora* (3 books); *Analytica Posteriora* (7 books); *Analysis of Syllogisms* (1 book); *Summary*

of the Analytics (1 book); *Polemic on the Theory of Euristic Arguments*. *On Definition* (1 book); *The First Premises* (18 books); *The Sophisms* (2 books); *On the Solution of Syllogisms* (1 book); *Topics* (2 books); *On Artless Demonstrations* (1 book); *On Negation* (1 book); *On Intellect* (1 book); *Classifications* (2 books); *On Entymemes* (1 book); *On the Appreciation of Syllogism* (1 book); *On Lies and Truth* (1 book); *Argumentations* (2 books); *Theses* (3 books); *On Definition* (2 books); *On the Data of Problems* (1 book); *On the Liar* (3 books); *Preface to the Topics* (1 book); *On Arguments proper* (1 book); *Specifications on The Texts of Syllogisms* (1 book).

Eudemus also wrote some treatises on logic, concerning which some information has come down to us; Ammonius, in his *Commentary On Aristotle's Categories* attributes to him a writing on *The Analytics* -- '*Analitika*', and another *On Expressions* -- *Peri lexeos*, in which he deals with the grammatical and logical functions of the sentence. The commentator David in *Prolegomena to Isagoge* by Porphyry also mentions these works. The latter work is also known to us from the commentaries of Galen.

Theophrastus and Eudemus were concerned with the relationship between judgements in the mechanism of the syllogism, rather than the relationship of the concepts they are made of. In other words, as Prantl remarks (*Geschichte der Logik im Abendlande*, I, p. 351), the logical function of the proposition is gradually replaced by the grammatical function.

To Theophrastus we owe the distinction made between significant judgement -- apophansis -- and premise protasis. Aristotle had used the term protasis -- premise -- but by it he had meant apophantic judgement. Theophrastus retained the term apophantic for the true and false judgements; the same judgement becomes a premise if affirmative or negative.

Theophrastus' interest turned, therefore, to the grammatical form and construction of the judgement whose function in the syllogism was, in his opinion, more important than the truth or falsity of a judgement.

This and many other examples illustrate that Aristotle's disciples were no longer in quest of truth but of the syllogistic mechanism independent of truth, and therefore independent of ontology. These were also Eudemus' concerns. He made an interesting contribution to the theory of existential sentences. Aristotle had replaced all the verbs that could occur in judgements by the copula "is" -- *esti* -- or "is not" *ouk esti*. Eudemus studied the existential sentences and demonstrated that the copula 'is' is a real term that can itself have a predicative determination. This conception, centered mainly, as we see from the examples above, on the structure of the grammatical form of judgements, explains why their logical investigations focused on another aspect of logic in which the expression of thinking was of prime importance." (pp. 207-208)

From: Anton Dumitriu, *History of Logic*, Tunbridge Wells: Abacus Press 1977, Vol. I.

EUDEMUS OF RHODES (c. 350 BC - 290 BC)

"Eudemus (2nd half of 4th cent. B.C.E.), of Rhodes. A student of Aristotle, often mentioned in conjunction with Theophrastus. In a charm story in Aulus Gellius (13.5), when Aristotle was dying, he chose Theophrastus over Eudemus as his successor in the Lyceum. Eudemus apparently returned to Rhodes on Aristotle's death and founded his own school; Simplicius (*In Phys.* 923.9-15) mentions an exchange of letters between him and Theophrastus on a textual question in Aristotle *Physics*. Simplicius also (924.13) mentions a biography of Eudemus by one Damas, of whom nothing else is known. There are ascribed to Eudemus in various places (see Wehrli) two books of *Analytics*, a *Categories*, *On Expression* (*Peri Lexeôs*),

On the Angle, *Physics*, and histories of geometry, arithmetic, and astronomy. Simplicius refers to Eudemus as "the most genuine of Aristotle's comrades" (*In Phys.* 411.15-16) and says that he "follows Aristotle in all things" (133.22). Though not entirely true, this appears not far off.

In logic, Eudemus and Theophrastus (who are always mentioned together in this connection) made various modifications to Aristotle's s logic; Alexander, in his commentary on the *Prior Analytics*, cites the following (Alexander is echoed by the other commentators on most of these points): (i) Theophrastus and Eudemus devised a direct proof the convertibility of universal negative propositions (Alexander 31.4-10; contrast Ar. *APri.* 1.2, 25a14-17). (ii) They adopted the *peiores* rule in modal logic: "that the conclusion is always assimilated to the lesser and weaker of the premises" (Alexander 124.13-14; by contrast Aristotle allowed certain combinations of necessary and assertoric premises to yield necessary conclusions, as in *APri.* 1.9). (iii) They defended the convertibility of universal negative problematic propositions (Alexander 220.9-16, against Ar. *APri.* 1.17, 36b35-37a31). (iv) They also did extensive work on hypothetical syllogisms (Alexander 389.31-390.3; Philoponus *In APri.* 242.18-19, speaks of "treatises of many lines" on the subject).

Eudemus is said to have claimed in *On Expression* (Alexander *In APri.* 16.15-17, scholium in *APri.* ed. Brandis [in *Aristotelis Opera* 4] 146a24-27) that "is" in "Socrates is" is a predicate term; he may thus have been the first to have contradicted Kant's claim that existence is not a predicate. Alexander's notice of this is phrased in a way that make it appear to contradict Aristotle (at least under Alexander's interpretation of Aristotle: 15.14-22)." (p. 234)

From: *Eudemus of Rhodes* by Russell M. Dancy, in: Donald J. Zeyl (ed.), *Encyclopedia of Classical Philosophy*, London: Fitzroy Dearborn Publishers 1997.

"Those works of Eudemus of which we have any real knowledge fall into two groups: systematic and historical. The second group, containing the histories of arithmetic, geometry, astronomy and perhaps theology, is generally assumed to have been conceived as part of a greater project, initiated by Aristotle himself: a series of surveys covering all the philosophically interesting fields of knowledge, which included Theophrastus' *Physikai Doxai* and Menon's *Iatrika*, as well as those of Eudemus. They will have been compiled during Aristotle's lifetime at Athens, the only place where Eudemus could easily have got hold of the necessary research materials. This raises the question whether, or to what extent, his reading of his sources was affected by Aristotelian preconceptions, a question which has long bedevilled our understanding of Theophrastus' historical works. But it looms less large in connection with the history of mathematics, since in most respects Aristotle's teaching was in accord with the assumptions of mainstream mathematicians, e.g., in accepting the "Euclidean" notion of space, if you will allow the anachronism. The only point on which there was a fundamental disagreement between him and any major group of mathematicians was the existence of indivisible lines, and here Eudemus adopted the Peripatetic position. Thus he agreed with Aristotle in rejecting Antiphon's attempt to square the circle as contravening a basic principle of geometry, the infinite divisibility of magnitudes.(8) In general, however, these works seem to have contained more straight reporting, and less criticism, than the *Physikai Doxai*. In particular, many of the extant fragments make a point of determining who first discovered a phenomenon or theorem, but then such observations are easier to make and more illuminating in connection with the special sciences than the history of philosophy. When we turn to Eudemus' systematic writings, the situation is more complicated. We have fairly extensive fragments of three: the *Analytika* (fr. 9-24W), the *Peri lexeos* (fr. 25-9) and the *Physika* (fr. 31-123). Like the corresponding works of Aristotle and Theophrastus, they reflect Eudemus' lectures closely (see in particular fr. 88), even if they

were more than lecture notes in the ordinary sense. Yet there are differences between them which are not only due to the differences of their subject-matter. The *Physika*, of which we have by far the fullest reports, was based on a course of lectures covering the same subjects as Aristotle's *Physics* in the same order (see especially fr. 98), except that it contained nothing corresponding to Book 7 of our version. The extant fragments contain no doctrinal innovations and Eudemus' contribution seems to have been limited to changes of presentation and emphasis (more on this later). Our reports of his *Analytika* are more sporadic, but this work brought some important modifications of Aristotle's doctrine: a new method of proving the convertibility of certain kinds of proposition; the recognition of five kinds of syllogism, which Aristotle treated as variants of other moods, as independent moods of the first figure; the introduction of the *in peiorem* rule in modal syllogistic; and some advances in the theory of "hypothetical" syllogisms. If this were all we knew about the work, Eudemus would count as a considerable logician in his own right, but now comes the rub: all of these doctrines are attributed to him and Theophrastus jointly. The only major fragment ascribed to Eudemus alone (fr. 23W) contains a detailed discussion of the meanings of "hypothetical" which might have been useful for elementary students, but makes no advance in logical theory. (9)

The *Peri lexeos* shows rather more independence. Unlike the books with the same title written by Aristotle and Theophrastus (Diogenes Laërtius 5.24 = Aristoteles *Rhet.* 3; 5.47), it was not concerned with the stylistic, but the logical aspects of language. Of the four certain surviving fragments (fr. 25-8), (10) one asks in what circumstances questions count as "propositions" (*protasis*), two show Eudemus differing from Aristotle as to whether the "is," in sentences of the form "A is B," is part of the predicate or only a link between the subject-term and the predicate-term, while the fourth informs us that Eudemus gave an account of the "third man" argument similar in all essentials to the one found in Aristotle's *Peri ideon*. (11) One wonders how this

came to be included in a treatise on language; perhaps the theory of Forms was brought into a discussion of meaning. While these fragments do not allow us to reconstruct the *Peri lexeos* even in outline, they are enough to indicate its subject matter. An almost pedantic concern with verbal expression and verbal distinctions can also be observed in some of the fragments of Eudemus' *Physika*, e.g., fr. 61, 83, 92, 94-6, 102.

Finally there is one series of fragments which is entirely different from all the others: half a dozen stories about animal behaviour preserved by Aelian (fr. 127-32)." (pp. 29-31, some notes omitted)

Notes

(8) Fr. 140W. But the sentence near the beginning of the extract printed by Wehrli (1969, 57.271.) which contains a verbal echo of Aristotle (Phys. 185a18), is the work of Simplicius; he only refers to Eudemus later, at 59.11.

(9) The last fragment printed under this head by Wehrli (fr. 24) is also attributed to Eudemus alone, but consists of a historical note about Speusippus' views on definition which may have come from a different work.

(10) 29W, from Galen's *De captionibus in dictione*, refers to a certain source of examples of fallacies; in the older editions, its name is given as (the book of) Eudemus, but the unique MS may read *eudumou* rather than *eudemou* and Ebbesen has printed *Euthudemou* in his edition [*Commentators and commentaries on Aristotle's Sophistici elenchi*,] (1981, 2:18; cf. 1:14-16). He cites Alcinoos *Didasc.* p. 159.39 H in support of his conjecture and further confirmation is offered by Simplicius *In Cat.* 22.11ff. This passage can no longer be safely attributed to Eudemus, and it is now doubtful whether his *Peri lexeos* included a treatment of fallacies. See Fortenbaugh in this volume.

(11) Alexander of Aphrodisias *In Metaph.* 83.34ff. = Aristotelis *Fragmenta* pp. 125-6 Ross; 380a36 - 381a32 Gigon. Wehrli (1969) only prints a very short extract as Eudemus fr. 28.

From: Hans B. Gottschalk, "Eudemus and the Peripatos", in: István Bodnár and William W. Fortenbaugh (eds.), *Eudemus of Rhodes*, New Brunswick: Transaction Publishers 2002, pp. 25-37.

THEOPHRASTUS OF ERESUS (371 BC - c. 287 BC)

"Theophrastus continued Aristotle's work on logic, making improvements, but also important modifications. Regarding statements, he distinguished between those that are singular and those that are particular, maintaining that the former are definite and the latter indefinite. Affirmations with a privative predicate he called *ek metatheseô*. In regard to the categorical syllogism, Theophrastus added five moods to the canonical four of the first figure. The five are those of the indirect first figure, which is equivalent to the later fourth figure. They are neither perfect nor undemonstrated and are mentioned by Aristotle only in passing. Theophrastus also held that the first mood of the third figure has two different forms. In the same figure he proposed another order of the moods based on the directness of their proofs. In modal logic, Theophrastus maintained against Aristotle that the universal negative problematic premise (that of one-sided possibility) converts just as do the assertoric universal negative and the necessary. In the case of syllogisms constructed from premises of different modalities, he held that the conclusion in every case follows the weaker premise (*peiores*-rule), while according to Aristotle it follows the major premise. In connection with the Academic search for *eide*, Theophrastus developed a special logical form, the prosleptic syllogism, which cannot be reduced to a categorical syllogism. One proposition contains potentially a third term, which is made explicit in a second proposition; and the two propositions together yield a conclusion. Theophrastus also did more systematic research in hypothetical

sylogistic than Aristotle, and almost certainly influenced the Stoics. But he remained an Aristotelian, concerning himself mainly with the logic of terms and not that of propositions."

From: William W. Fortenbaugh and Josip Talanga, *Theophrastus*, in: Donald J. Zeyl (ed.), *Encyclopedia of Classical Philosophy*, London: Fitzroy Dearborn Publishers 1997, pp. 552-553.

THEOPHRASTUS ON QUANTIFICATION

Boethius reports concerning Theophrastus (*floruit* 322-388 BC), student, friend, and first successor to Aristotle as Director of the Lyceum, that "those points which Aristotle expounded in this book on the proposition, he recapitulated lightly, but those items which his teacher failed to publish, he added as a supplement, and executed indeed with a rather sharp type of analysis." (29) And on other and independent grounds there is no doubt that Theophrastus prolonged the lines of Aristotle's own later development and thus stands forth as his most authentic interpreter. It is of crucial importance for the history of traditional logic to disengage the elements of this development from the fragments of Theophrastus. Many significant advances emerge. Of them the following three seem most relevant to our present purposes.

Among the disjointed references to Theophrastus one finds for example the very significant remark that:

On the other hand Theophrastus maintains that there are certain cases of statements in which, if there is no quantitative determination of the predicate also, their respective contradictories will be true. This is the example that he gives: if we say 'Phanias possesses knowledge'; Phanias does not possess

knowledge,' it is possible for both statements to be true simultaneously. (30)

For Phantias could indeed be an expert in musical theory, but know nothing, for example, of astronomy. If one is to avoid the possibility of simultaneously valid contradictories that such unresolved ambiguity grounds, then it is necessary to add to the term: 'knowledge,' some quantitative specification. For one does quantify differently, for example, the following statements: (1) All men are mortal, and (2) Some men are married. In such quantification revision of the present case there would result : (1) Phantias possesses all knowledge, and (2) Phantias does not possess all knowledge. Both of these latter formulations preclude the possibility of simultaneous truth.

The instance of Theophrastus is profoundly interesting. But its true significance is not cleanly and clearly disengaged from his vague but correct feeling for the problem. The focus would have been sharpened by two alterations in its formulation: (1) quantify the subject of the pertinent and illustrative sentences and (2) distinguish and divide the separate elements in the complex predicate: 'possess.' For in the present case 'knowledge' is not really the predicate. The true predicate is 'possesses' and 'knowledge' belongs in one of its two places, as one of its arguments or relata. For 'someone possesses something' comes far closer to the genuine analysis than 'someone is something-that-possesses-something'. Theophrastus is not clear. But his instinct is sound. Like most pioneers in theoretical advances, his grasp on the discovery is clumsy and heavy, even if sure and firm. And the point is of paramount importance. For the main character of difference between the conventional logic of analysis of propositions and that of modern logic is precisely this: conventional logic arbitrarily restricts its analysis to functions involving a *single* generalization (of 'S' in the 'S is P' formula), whereas the modern analysis of statements concerns itself with the further analysis of functions involving many coordinate generalizations, wherever possible and wherever logically important or relevant. The conventional expression : 'All a's are

b's', is no more nor less than a function constructed on the matrix pattern: 'if anything is an a, then it is a b,' by means of *the single generalization of the subject* to the level of 'anything.' And this level is the actual upper limit and maximum ceiling of conventional analysis. Consider however such a statement as: 'Every man has a father,' which even in its grammatical formulation is doubly generalized ('every' and 'a'). Such a sentence can undergo partial analysis and resolution by conventional procedures. One may let 'a' stand for the class of men, and 'b' represent the class of 'beings-that-have-fathers,' and write accordingly: Everything that is an a, is also a b.' But this technique achieves an analysis of the statement only with regard to its first generalization to the level of 'any man whatever.' If one is to secure an equally valid and necessary analysis of the *doubly* general statement, there is no alternative but to proceed as follows: 'For every entity x there exists at least some one y or other, such that if x is a man, then y is the father of x' (31) This is in fact that technique of double generalization or quantification which Theophrastus glimpsed, but darkly.

Alexander (32) furthermore informs us that Theophrastus labeled 'propositions *kata prolepsin*' statements which were formed by appropriate substitution in the generalized matrix formula: 'to that whatsoever to which B universally belongs, A belongs universally also.' And Alexander proceeds to explain that the label is etymologically derived from the fact that over and beyond the two determinate terms: 'A' and 'B,' one also employs [a third most generalized and indeterminate element, i. e. that object whatsoever it be to which both A and B jointly apply. The sense of the passage is clear and the meaning it suggests may be expressed in the following formulation of a universal affirmative statement: 'no matter what entity one may care to mention, if it is a B, then it is also an A.' Alexander further reports that in the opinion of Theophrastus himself such statements *kata prolepsin* and those which are called categorical and are formed by appropriate substitutions in the generalized schema : 'A is B,' are logically equivalent. It would thus appear that the primitive notions of a

quantification theory and of resolution of categorical assertions into formal implications are not altogether foreign to the traditional development of Aristotle's logic." (pp. 19-20)

From: Joseph T. Clark, *Conventional Logic and Modern Logic: A Prelude to Transition*, Woodstock, Maryland: Woodstock College Press, 1952.

THEOPHRASTUS AND HYPOTHETICAL SYLLOGISMS

Boethius furthermore gives this reply to a persistent inquirer whose logical interests appear to have coincided with our own present ones:

... You frequently ask me about hypothetical syllogisms. Aristotle composed no treatise on them. Theophrastus, however, although gifted with a most versatile competence, only touches on their high points. Eudemus undertakes to impart a broader view of the subject, but goes about the execution of the project in such a way that to all appearances he reaped no harvest from the germinal ideas that he scattered about. (33)

What then were these high points to which Boethius alludes? Alexander (34) reports for the record a set of rules which seem to pertain to the type of hypothetical syllogisms in question. These are the syllogisms *kata analoghian* also called 'completely hypothetical syllogisms', or again 'triply hypothetical syllogisms'. And we are instructed that Theophrastus reduced these formulae to three figures:

1. If the A proposition [to A], then the B; if the B, then the C; hence if the A, then the C.

2. If the A, then the B; if not the A, then the C; hence if not the B, then the C.
3. If the A, then the C; if the B, then not the C; hence if the A, then not the B.

These formulations are of profound logical interest. At first blush they may be hastily identified with comparable laws of the modern sentential calculus in which the alphabet symbols represent unanalyzed statements, regarded as unit block wholes. But it is more than likely that Theophrastus construes what he imparts in the familiar context of an Aristotelian logic of terms. The paradox is characteristic of pioneers. While laying the groundwork in point of fact for a primitive calculus of statements, Theophrastus apparently interprets his own advances as a prolongation into unexplored areas of the Aristotelian syllogism. But they are without doubt genuine advances."

(29) Migne, *Patrologiae Cursus Completus, Series Latina* 64; Boethius, *De Interpretatione* 12.16: ". . . quae Aristoteles Imo libro de enuntiatione tractavit, leviter ab eo transcurra sunt; quae vero magister eius tacuit, ipse subtiliore modo considerationis adiecit." I take it that one does not 'keep silent' on matters of which one is completely ignorant.

(30) Theodorus Waitz, *Aristotelis Organon Graece* (Lipsiae: 1844-1846) I. 40 ad 17b16.

(31) And in symbolic formulation:

$(x) (Ey) (Mx \supset Fyx)$.

And on this important point see C. H. Langford in Clarence Irving Lewis and C. H. Langford, *Symbolic Logic* (New York: The Century Co., 1932), pp. 286-287." (pp. 22-23)

Notes

(32) Alexandri in *Aristotelis Analyticorum Priorum Librum Primum Commentarium* (ed. M. Wallies, Berolini: 1883) 378. 12-20 ad 49b27

(33) "J. P. Migne, *Patrologiae Cursus Completus*, Series Latina 64; Boethius, *De Syllogismo Hypothetico* 831C: ". . . de hypotheticis syllogismis saepe quaerebas, in quibus ab Aristotele nihil est conscriptum. Theophrastus vero, vir omnis doctrinae capax, rerum tantum summas exsequitur. Eudemus latiore docendi graditur viam, sed ita, ut veluti quaedam seminaria sparsisse, nullum tamen frugis videatur extulisse proventum."

(34)Alexandri in *Aristotelis Analyticorum Priorum Librum Primum Commentarium* (ed. M. Wallies, Berolini: 1883) 326.8-327.18

From: Joseph T. Clark, *Conventional Logic and Modern Logic. A Prelude to Transition*, Woodstock: Woodstock College Press 1952.

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Selected Bibliography on the Logic of Eudemus of Rhodes and Theophrastus of Eresus

CRITICAL EDITION OF THE FRAGMENTS OF EUDEMUS OF RHODES (c. 350 BC - 290 BC)

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The standard collection of Fragments, abbreviated W. in the citations; second edition 1969.

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Translated by Ian Mueller with Josiah Gould.
On the modal logic of Eudemus of Rhodes see pp. 59ff. with notes on Alexander 124.11 ff.

2. Bodnár, István, and Fortenbaugh, William W., eds. 2002. *Eudemus of Rhodes*. New Brunswick: Transaction Publishers.

Contents: Preface VII; Contributors IX; 1. Dimitri Gutas: Eudemus in the Arabic tradition 1; 2. Hans B. Gottschalk: Eudemus and the Peripatos 25; 3. Tiziano Dorandi: Qualche aspetto controverso della biografia di Eudemo di Rodi 39; 4. William W. Fortenbaugh: Eudemus' work *On Expression* 59; 5. Pamela M. Huby: Did Aristotle reply to Eudemus and Theophrastus on some logical Issues? 85; 6. Robert W. Sharples: Eudemus' physics: change, place and time 107; 7. Han Baltussen: Wehrli's edition of Eudemus of Rhodes: the physical fragments from Simplicius' commentary *On Aristotle's Physics* 127; 8. Sylvia Berryman: Continuity and coherence in early Peripatetic texts 157; 9. István Bodnár: Eudemus' Unmoved Movers: fragments 121-123b Wehrli 171; 10. Deborah K. W. Modrak: *Phantasia*, thought and science in Eudemus 191; 11. Stephen A. White: Eudemus the naturalist 207; 12. Jørgen Mejer: Eudemus and the history of science 243; 13. Leonid Zhmud: Eudemus' history of mathematics 263; 14. Alan C. Bowen: Eudemus' history of early Greek astronomy: two hypotheses 307; 15. Dmitri Panchenko: Eudemus fr. 145 Wehrli and the ancient theories of lunar light 323; 16. Gábor Betegh: On Eudemus fr. 150 (Wehrli) 337; Index of ancients sources 359-383.

"This volume of Rutgers University Studies in Classical Humanities, no. XI in the series, is the third devoted to Theophrastus' colleagues, pupils and successors, i.e., those Peripatetic philosophers, whom Fritz Wehrli brought together under the label *die Schule des Aristoteles*. Volume IX focuses on Demetrius of Phalerum, who was Theophrastus' pupil and for ten years the ruler of Athens. Volume X has Dicaearchus of Messana, Theophrastus' fellow-pupil within the Aristotelian Peripatos, as its subject. The present Volume, no. XI, concentrates on Eudemus of Rhodes, who, like Dicaearchus, studied under Aristotle and

alongside Theophrastus. This concern with *die Schule des Aristoteles* will continue with the next two volumes: Lyco of Troas and I Hieronymus of Rhodes will be the subjects of Volume XII, and Aristo of Ceos will be featured in Volume XIII. All three belong to the post-Theophrastean Peripatos. Like Volumes IX and X, so Volumes XII and XIII will present the ancient sources with translation as well as discussion by various scholars. Volume XI is different in that it is entirely composed of articles which discuss Eudemus from differing points of view." (from the Preface by the Editors)

3. Fortenbaugh, William W. 2002. "Eudemus' Work on *Expression*." In *Eudemus of Rhodes*, edited by Bodnár, István and Fortenbaugh, William W., 59-83. New Brunswick: Transaction Publishers.
 "Eudemus of Rhodes wrote a work entitled *On Expression, Peri lexeos*. It was at least two books or rolls long and was the subject of a lost treatise by Galen. Apparently the work was not only substantial but also full of interesting material. It is therefore regrettable that we have only a few fragments from which to judge the content of the work. Five fragments, nos. 25-9, are assigned to the work by Wehrli, but that may be too generous. In what follows, I intend first to consider Wehrli's five fragments and then to ask what we can conclude concerning the content of *On Expression*." p. 59
4. Gottschalk, Hans B. 2002. "Eudemus and the Peripatos." In *Eudemus of Rhodes*, edited by Bodnár, István and Fortenbaugh, William W., 25-37. New Brunswick: Transaction Publishers.
5. Gutas, Dimitri. 2002. "Eudemus in the Arabic Tradition." In *Eudemus of Rhodes*, edited by Bodnár, István and Fortenbaugh, William W., 1-23. New Brunswick: Transaction Publishers.
 Reprinted as Chapter VIII in D. Gutas - *Greek philosophers in the Arabic tradition* - Aldershot, Ashgate, 2000. see IV.

Logic pp. 9-11.

"The information on Eudemus of Rhodes that can be recovered in Arabic sources falls into three categories: there is a full collection of sayings (Section II below and Appendix), some incidental biographical notices that mainly state his relation to Aristotle and Theophrastus (Section III), and a number of references to his views on logic which lie held in common with Theophrastus (Section IV). No work of his is reported to have been translated into Arabic or is known to be extant. Apart from the sayings, therefore, Eudemus has no independent persona or presence in Arabic but rides on the coattails primarily of Theophrastus. This is hardly surprising, given the little information on Eudemus that was available even in Greek at the time of the rise of Islam." p. 1

6. Huby, Pamela M. 2002. "Did Aristotle Reply to Eudemus and Theophrastus on Some Logical Issues?" In *Eudemus of Rhodes*, edited by Bodnár, István and Fortenbaugh, William W., 85-106. New Brunswick: Transaction Publishers.

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2. ———. 1985. "Theophrastus and Hypothetical Syllogistic." In *Aristoteles. Werk Und Wirkung, Paul Moraux Gewidmet, I: Aristoteles Und Seine Schule*, edited by Wiesner, Jürgen, 557-576. Berlin: de Gruyter. Reprinted in: W. W. Fortenbaugh, P.M. Huby, A. A. Long (eds.) - *Theophrastus of Eresus. On his life and work* - New Brunswick, Transaction Books, 1985, pp. 125-141.

"In *APr* 1.44 Aristotle considers "arguments on the basis of a hypothesis." He deals first with arguments that are "agreed to by way of a compact," and then with those that "reach their conclusion by way of the impossible." The chapter ends with a promise: "Many other arguments reach their conclusion on the basis of a hypothesis. We should consider them and mark them out clearly. We shall say later what varieties of them there are and in how many ways arguments can rest on a hypothesis" (*APr* 50 a 39-b2). Alexander of Aphrodisias (*In APr* 389, 31-390.9) (1) comments on that passage as follows:

Having talked about arguments on the basis of an agreement and arguments by *reductio ad impossibile*, he says *that* "many others reach their conclusion on the basis of a hypothesis." He postpones discussion of them, as though intending to deal with them more carefully; but no book of his on the subject is in circulation. Theophrastus, however, refers to them in his own *Analytics* -- and so do Eudemus and some others of Aristotle's associates.

Aristotle presumably has in mind those arguments which proceed by way of a continuous proposition (or a connected proposition, as it is also called) together with the additional assumption, and those which proceed by way of a separative or disjunctive proposition -- and perhaps also those which proceed by way of a negated conjunction, if they are indeed different from the ones already mentioned. (2)

In addition to those we have mentioned, there will also be arguments on the basis of proportion and those which they call "qualitative" (i.e., arguments from what is more so or less so or equally so) and whatever other varieties of arguments based on a hypothesis (3) there are (they have been discussed elsewhere).

In addition to those we have mentioned, there will also be arguments on the basis of proportion and those which they call "qualitative" (i.e., arguments from what is more so or less so or equally so) and whatever other varieties of

arguments basal on a hypothesis' there are (they have been discussed elsewhere).

Those paragraphs are of some importance for the history of logic: the present paper is a commentary on them."

1. The passage is F 29 in A. Graeser, *Die logischen Fragmente des Theophrast* (Berlin / New York 1973), and frag. 33c in L. Repici, *La logica di Teofrasto* (Bologna 1977).
2. Wallies, in the *CIAG* edition, punctuates so as to begin a new sentence with the clause "if they-already mentioned." The result is ungainly and obscure. In my translation I gratefully adopt a suggestion made by David Sedley: his punctuation gives perfect sense and makes better Greek. (It leaves an unpleasant asyndeton. Perhaps we should insert a particle and begin the new sentence at 390.6 with *para de tous*.)
3. I excise *protaseon* (390.9): the phrase "propositions based on a hypothesis" is strange, and even if it may be allowed as a variant on "hypothetical proposition," it is out of place; Alexander is enumerating types of hypothetical *arguments*, not types of hypothetical *propositions*.
3. Bobzien, Susanne. 2000. "Wholly Hypothetical Syllogisms." *Phronesis. A Journal for Ancient Philosophy*:87-137. Traces the history in Aristotelian commentators of the type of syllogisms called "wholly hypothetical" -- that is, those consisting in two conditionals as premisses, with a third as the conclusion -- and sets forth the deductive system on which the logic of this syllogism was grounded. There was no unique prevalent understanding of the logical form of these arguments, but rather a complex development in their understanding, starting from a term-logical conception and leading to a propositional-logical one. The roles of Theophrastus, Alexander of Aphrodisias, and Porphyry (*via* Boethius) in the transmission and transformation of this problematic are investigated."
4. Bochenski, Joseph. 1947. *La Logique De Théophraste*. Fribourg: Librairie de l'Université.

- Reprinted New York, Garland, 1987.
5. Brunschwig, Jacques. 1982. "'Indeterminé" Et "Indefini" Dans La Logique De Théophraste." *Revue Philosophique de la France et de l'Étranger* no. 172:359-370.
 6. Fortenbaugh, William W. 1991. "Theophrastus, Fr. 65 Wimmer: Is It Important for Understanding Peripatetic Rhetoric?" *American Journal of Philology* no. 111:152-156. Revised reprint in: W. W. Fortenbaugh, *Theophrastean Studies*, Wiesbaden: Franz Steiner, 2003, I Section: Logic: pp. 15-21.
 7. ———. 1995. "Theophrastus, No. 84 Fhs&G: Nothing New Here!" In *The Passionate Intellect: Essays on the Transformation of Classical Traditions*, edited by Lewis, Ayres, 161-176. New Brunswick: Transaction Publishers. Revised reprint in: W. W. Fortenbaugh, *Theophrastean Studies*, I Section: Logic: pp. 22-34, with the subtitle: *Did Theophrastus oppose Aristotle and accept quantification of the predicate?*.
 8. ———. 1998. "Cicero: *On Invention* 1.51-77; Hypothetical Syllogistic and the Early Peripatetics." *Rhetoric* no. 16:25-46. Revised reprint in: W. W. Fortenbaugh, *Theophrastean Studies*, I Section: Logic: 51-67.
 9. ———. 2000. "Teofrasto Di Ereso: Argomentazione Retorica E Sillogistica Ipotetica." *Aevum* no. 74:89-103. Revised English version in: W. W. Fortenbaugh, *Theophrastean Studies*, I Section: Logic: pp. 89-103 with the title: *Theophrastus of Eresus: Rhetorical Argument and Hypothetical Syllogistic*.
"To appreciate Theophrastus' contributions to the study of rhetorical argument, we should consider his accomplishments in the field of logic, for it is Theophrastus and other members of the second generation of the Peripatos who developed hypothetical syllogistic. Many of the illustrative arguments in Aristotle's *Rhetoric* (esp. in chapters on the enthymeme, the *koiné* and topics) take the

form of a mixed hypothetical syllogism. Aristotle promised to discuss such syllogisms, but he never did. That task fell to his successors, among Theophrastus will have made the connection with rhetoric."

10. Gottschalk, Hans B. 1987. "Did Theophrastus Write a *Categories*?" *Philologus* no. 131:245-253.
11. Huby, Pamela M. 1977. "Apuleius and Theophrastus' Fifth 'Indemonstrable' Mood." *Liverpool Classical Monthly* no. 2:147-148.
An interpretation of Apuleius *Peri hermeneias* chapter 13.
12. ———. 1979. "A Neglected Fragment of Peripatetic Logic." *Liverpool Classical Monthly* no. 4:207-210.
Discussion of an account of hypothetical syllogisms appended in an 11th cent. ms. (Laurentianus 72.5) to Aristotle's Posterior Analytics. The account may represent the views of Theophrastus."
13. ———. 1989. "Theophrastus and the Criterion." In *The Criterion of Truth. Essays Written in Honour of George Kerferd, Together with a Text and Translation (with Annotations) of Ptolemy's on the Kriterion and Hegemonikon*, edited by Huby, Pamela M. and Neal, Gordon, 107-122. Liverpool: Liverpool University Press.
14. ———. 2002. "Did Aristotle Reply to Eudemus and Theophrastus on Some Logical Issues?" In *Eudemus of Rhodes*, edited by Bodnár, István and Fortenbaugh, William W., 85-106. New Brunswick: Transaction Publishers.
15. Lejewski, Czeslaw. 1961. "On Prosleptic Syllogisms." *Notre Dame Journal of Formal Logic* no. 2:158-176.
As a rule modern textbooks of traditional logic distinguish only two kinds of syllogism: the categorical syllogism, which has originated with Aristotle, and the hypothetical syllogism, which goes back to the early Peripatetics and to the Stoics. Rarely, if ever, is mention made of the third kind of syllogism namely the *proseptic* syllogism. Yet, the *proseptic* syllogism, for which we seem to be indebted to Theophrastus, appears to have been regarded at least by

some logicians in later ages of antiquity as a legitimate part of logical theory.

Like the expressions 'categorical' and 'hypothetical' the expression 'prosleptic' is a technical term and its full significance can only emerge at a later stage of our enquiry. At this stage suffice it to say that 'prosleptic' is meant to render the Greek expression *kata proslepsin* in its adjectival use.

Although the prosleptic syllogism has not played as important a role in the development of logic as the other two kinds of syllogism, it deserves our attention particularly for the following two reasons. First, the validity of prosleptic syllogisms is based, as we shall see, on certain logical notions which in modern logic find their expression in the use of the universal quantifier. Secondly, the theory of prosleptic syllogism bears witness to the resourcefulness of Theophrastus as a logician.

In what follows I propose to reconstruct the theory of prosleptic syllogisms to the extent to which the scarcity of textual evidence permits, and to examine it from the point of view of modern logic."

16. ———. 1976. "On Prosleptic Premisses." *Notre Dame Journal of Formal Logic* no. 17:1-18.

Galen claimed that prosleptic premisses, used for the first time by Aristotle and treated systematically by Theophrastus, were equivalent to appropriate categorical premisses. This claim can only be sustained with substantial qualifications. The paper carries out a detailed examination of equivalence relationship between the two kinds of premisses within the framework of axiomatized Aristotelian syllogistic, which had to be suitably extended for the purpose by additional assumptions. The results of the enquiry differ from those obtained by William and Martha Kneale in their paper on "Prosleptic propositions and arguments" in "Islamic philosophy and the Classical tradition", edited by S. M. Stern and others, Cassirer 1972."

17. Lorenzen, Paul. 1969. "Theophrastische Modallogik." *Archiv für mathematische Logik und Grundlagenforschung* no. 12:72-75.
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Étude des syllogismes chez Aristote, dans l'école péripatéticienne (Théophraste) et dans le stoïcisme. Malgré de nombreux éléments individuels, Galien s'insère plutôt dans le courant péripatéticien. C'est également de ce dernier, et non de la théorie stoïcienne, que s'inspire la logique arabe."
19. Mignucci, Mario. 1965. "Per Una Interpretazione Della Logica Modale Di Teofrasto." *Vichiana*:227-277.
Les innovations de Théophraste correspondent à une conception de la nature et de la fonction de la logique, qui n'a plus dignité de science autonome et indépendante, visant à l'analyse des connexions formelles du réel, mais qui devient de plus en plus instrument de la recherche scientifique."
20. ———. 1998. "Theophrastus' Logic." In *Theophrastus. Reappraising the Sources*, edited by Ophuijsen, Johannes Van and Raalte, Marlein Van, 39-66. New Brunswick: Transaction Publishers.
21. ———. 1999. "La Critica Di Teofrasto Alla Logica Aristotelica." In *Antiaristotelismo*, edited by Natali, Carlo and Maso, Stefano, 21-39. Amsterdam: Adolf M. Hakkert.
22. Repici, Luciana. 1977. *La Logica Di Teofrasto. Studio Critico E Raccolta Dei Frammenti E Delle Testimonianze*. Bologna: Il Mulino.
Indice: Parte prima. Gli studi moderni sulla logica di Teofrasto 9; Parte seconda. Le opere logiche di Teofrasto. I. I problemi della ricostruzione della logica di Teofrasto 33; II. Dell'affermazione e della negazione 45; III. Analitici Priori 81; IV. Analitici Secondi 159; V. Topici 167; VI. Le altre opere logiche 179; Parte terza. Testimonianze e frammenti 193; Bibliografia 227; Indici delle fonti 235;

Tavola di raffronto dei Frammenti [con l'edizione di Andreas Graeser - *Die logischen Fragmente des Theophrast* - Berlin, 1973] 241-243; Indice dei nomi 245-247.

"This is the second collection of Theophrastus' logical fragments to appear within four years and it is very similar to that of Andreas Graeser, published with a German commentary in 1973. The similarity is not surprising, for the majority of passages which can be attributed to Theophrastus with confidence can also be assigned with confidence to one of his commentaries, if we may so call them, on Aristotle's works, the *On Affirmation and Denial*, which, according to Boethius, followed the lines of Aristotle's *De Interpretatione*, the *Prior* and the *Posterior Analytics*, and the *Topics*. Since, further, most of these passages occur in later commentaries on Aristotle, and are linked with particular sections of his work, there is not even much doubt their order, and with only three exceptions, of minor importance, the order given here is the same as that of Graeser.

Since so much is well established, these two editions are likely to remain the only ones for many years. Graeser's is marred by many inaccuracies, and this one is much better on that score. Miss Repici has also taken the trouble to translate every passage into Italian, which is sometimes very helpful, and she gives a survey of much earlier work on Theophrastus' logic." (Pamela M. Huby - Review of the book - *Mind*, 1979, pp. 448-450)

23. Rose, Lynn. 1968. *Aristotle's Syllogistic*. Springfield: Charles C. Thomas.

Contents: I. Plato's dialectic and Aristotle's syllogistic 3; II. The varieties of predication 13; III: The three figures 16; IV. The non-use of rules 27; V. Validation by reduction 34; VI. Invalidation by counterexample 37; VII. The syllogistic system 53; VIII. The Fourth Figure and the indirect proof 57; IX. Subalternation 80; X. Premise order 81; Appendix. I. The square of opposition 99; II. The mnemonic lines 102;

III: The perfection of Aristotle's First Figure 104; IV. Theophrastus and the indirect moods 109; V. The diagrams of the three figures 133; VI. John Locke's criticisms of Aristotle and the syllogism 137; Bibliography 144; Index 147-149.

"Traditional "Aristotelian" logic recognizes four figures of the syllogism, including five "indirect" moods of the first figure.

The usual account of the origin of these is that Aristotle himself developed the first, second, and third figures, that Theophrastus added the indirect moods of the first figure, (2) and that the fourth figure was added later on by someone else, probably Galen. (3)

I shall attempt to show that the five argument forms added to the first figure by Theophrastus were in fact not the indirect moods of the first figure that became part of the traditional "Aristotelian" logic. They were, rather, argument forms corresponding both to the later indirect first and to the later fourth figure moods, but not recognizing any distinction between the two. From the modern (i.e., traditional) point of view, it is just as accurate, and just as wrong, to say that Theophrastus added the fourth figure as to say that he added the indirect first. In a sense he did both; in a sense he did neither. For in the later logic the indirect first moods are carefully distinguished from the fourth figure moods. But Aristotle and Theophrastus had no formal basis for distinguishing the indirect first from the fourth. They attached no significance to premise order. (4)" pp. 109-110

(2) The main evidence for this is the statement of Alexander, *Alexandri in Aristotelis Analyticorum Priorum Librum I Commentarium*, CAG, edited by Maximilian Wallies. Berlin, 1883, vol. II, part I, pp. 69.26-70.21 and 109.29-110.21. See also *Boetii De Syllogismo categorico libri duo*. In *Patrologiae Cursus Completus*, Series Latina, edited by J.-

P. Migne. Paris, Bibliothecae Cleri universae, 1891, vol. LXIV, 814C-816C.

(3) The best known source for this is Averroes. Two recent and full treatments of the history of the fourth figure and of reports about it are in A. I. Sabra: A twelfth-century defence of the fourth figure of the syllogism. *Journal of the Warburg and Courtauld Institutes*. XXVIII: 14-28, 1965, and Nicholas Rescher: *New light from Arabic sources on Galen and the fourth figure of the syllogism*. *Journal of the History of Philosophy*, III: 27-41, 1965.

(4) For Aristotle on premise order, see Chapter X above. We shall see in this Appendix that there seems to be no reason to suppose that Theophrastus had any conventions regarding premise order either.

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Selected Bibliography on the Megarian School and the Dialectical School (Later 4th to the Mid 3rd Centuries BC)

EDITIONS OF THE FRAGMENTS OF THE MEGARIANS

1. Döring, Klaus. 1972. *Die Megariker. Kommentierte Sammlung Der Testimonien*. Amsterdam: B. R. Grüner. Inhaltsverzeichnis: Vorbemerkungen IX-XII; (T = Testimonien; K = Kommentar).
 - I. Euklid und sein Kreis.
 1. Euklid T = 3; K = 73; 2. Diokleides T = 4; K = --; 3. Dionysios aus Chalkedon T = 14; K = 99; 4. Ichthyas T = 15; K = 100; 5. Kleinomachos T = 15; K = 101;
 - II. Eubulides und sein Kreis
 1. Eubulides T = 16; K = 102; 2. Euphantos von Olynth T = 20; K = 114; 3. Memnon (?) T = 21; K = --; 4. Alexinos T = 21; K = 115;
 - III. Diodor und sein Kreis.
 1. Apollonios Kronos T = 28; K = --; 2. Diodor T = 28; K = 124; 3. Philon T = 45; K = 138; 4. Panthoides T = 45; K = 139; 5. Die Töchter Diodoros T = 45; K = --;
 - IV. Stilpon und sein Kreis.

1. Pasikles von Theben T = 46; K = --; 2. Thrasymachos von Korinth T = 46; K = --; 3. Stilpon T = 46; K = 140; 4. Philippos der Megariker T = 61; K = --; 5. Simmias von Syrakus T = 61; K = --; 6. Alkimos, Aristides, Diphilos, Kleitarch, Metrodor, Myrmex, Paioneios, Phrasidemios, Timagoras T = 61; K = --;
 Anhang: Bryson und sein Schüler Polyxenos.
 Bryson T = 62; K = 157;
 Polyxeons T = 67; K = 166;
 Stemma der Lehrer-Schüler-Verhältnisse 171; Verzeichnis der wichtigen Literatur 172; Stellenregister 175.
2. Giannantoni, Gabriele, ed. 1990. *Socratis Et Socraticorum Reliquiae*. Napoli: Bibliopolis.
 Second revised and expanded edition (4 volumes).
 The first edition, titled *Socraticorum reliquiae*, was published at Roma, Edizioni dell'Ateneo, 1983-1985.
 Vol. I gives the testimonies for Socrates and testimonies and fragments of Euclides and the Megarians, Phaedo and Menedemus; vol. II for the Cyrenaicans, Cynics, Aeschines and other Socratics; vol. III contains the bibliography and indices; vol. IV notes on various subjects.
 The testimonia on Philo the Dialectician and Diodorus Cronos are in vol. I, p. 414-435; that on Diodorus can also be found in Klaus Döring, *Die Megariker*, Amsterdam: Grüner, 1972.
 For a possibly Philonian theory of signs see: Hermann Diels, *Doxographi Graeci*. Berlin: Reimer, 1879, p. 605 (Pseudo-Galen, *Historia philosophica* c. 9).
3. Montoneri, Luciano. 1984. *I Megarici. Studio Storico-Critico E Traduzione Delle Testimonianze Antiche*. Catania: Università di Catania.
 Indice generale: Premessa 7; Parte prima I Megarici. Studio storico-critico 13; Introduzione: I discepoli di Socrate e le loro scuole 15; I. Euclide e la sua scuola 39; II. Ebulide e seguaci 93; III. Diodoro Crono e seguaci 123; IV. Stilpone e seguaci 207; Stemma della *diadoche* megarica 226; Parte

Seconda: I Megarici. Le testimonianze 227; Indice dei nomi antichi 323; Indice degli autori moderni 329; Indice delle fonti 333-345.

La presente ricerca "vuole essere un primo tentativo unitario e globale di ricostruzione e interpretazione delle fondamentali problematiche speculative dei pensatori megarici, condotto sulla scorta di un'attenta ricognizione critica del lavoro storiografico degli ultimi due secoli." p. 8
"Veniamo ora a illustrare la struttura dell'opera, che è bipartita.

Abbiamo articolato la prima parte -- che ha carattere monografico -- in quattro capitoli, dedicati rispettivamente alle grandi figure dei "capiscuola" del Megarismo: Euclide, Ebulide, Diodoro Crono e Stilpone.

La seconda parte comprende invece la traduzione delle testimonianze sui Megarici, ed è anch'essa strutturata in quattro sezioni (I. Euclide e la sua scuola; II. Ebulide e seguaci; III. Diodoro Crono e seguaci; IV. Stilpone e seguaci), corrispondenti ai quattro capitoli della prima parte.

Diversamente da Döring che le raccoglie a parte (cf. *Anhang: Bryson und sein Schüler Polyxenos*, pp. 62-70), noi abbiamo incorporato nella sezione I le testimonianze su Brisone e Polisseno, conformemente al nostro punto di vista espresso nel capitolo I.

In ciascuna sezione abbiamo raggruppato le fonti -- secondo la partizione adottata da Döring -- in: Testimonianze sulla vita (A), sugli scritti e la dottrina (B) e (soltanto per Euclide) sulla scuola (C). Abbiamo inoltre inserito -- quando ci è parso utile a una maggiore perspicuità di lettura -- titoli supplementari (in corsivo), con intento classificatorio e, insieme, chiarificatore del contenuto delle testimonianze. Per quanto riguarda la traduzione italiana, valgano le seguenti avvertenze:

1. Sono state tradotte tutte le testimonianze comprese nella raccolta di Döring, a eccezione di alcune poche

(precisamente quelle corrispondenti ai fr. 21, 22, 23, 58, 69, 72, 200, 201), che sono state omesse o perché prive di senso compiuto (fr. 21, 22, 23), o perché non interpretabili, trattandosi di testi papiracei assai lacunosi dai quali si ricavano non più che nomi e termini isolati. In ogni caso, Si tratta -- a nostro avviso -- di testimonianze praticamente irrilevanti dal punto di vista del loro contenuto storico-filosofico.

Viceversa, abbiamo ritenuto utile inserire la traduzione di alcune testimonianze non comprese nella raccolta di Döring, e che sono quelle contrassegnate dai nn. 44, 48, 166, 174L del nostro ordinamento.

2. Nella traduzione abbiamo di norma seguito il testo critico riprodotto da Döring, esplicitamente dichiarando i pochi casi nei quali abbiamo preferito una diversa lezione.

Nella traduzione abbiamo disposto le testimonianze secondo un ordine di lettura che ci è parso coerente con le caratteristiche e le conclusioni della trattazione monografica. Per facilitare i riscontri col testo greco, abbiamo fatto seguire, al nostro numero d'ordine della testimonianza, quello corrispondente nella numerazione Döring, riportato in parentesi.

Al fine di renderne più perspicuo al lettore il senso complessivo, abbiamo tradotto alcune testimonianze in una citazione più ampia rispetto a quella riportata da Döring.

Esse sono state contrassegnate da un asterisco (*) posto accanto al nostro numero d'ordine della testimonianza." pp. 10-11.

4. Muller, Robert. 1982. *Les Mégariques. Fragments Et Témoignages*. Paris: Vrin.

Traduction et commentaire.

Table des matières: Introduction 7; Les fragments et témoignages (I. Euclide, II. Eubulide, III. Diodore, IV. Stilpon, V. Appendice: Bryson et son élève Polyxène) 19; Annexe I 75; Annexe II 91; Commentaire 95; Notes 183;

Bibliographie 229; Index des sources 237; Index locorum 247-253.

"Introduction. I. Les textes Mégariques.

On s'accorde volontiers à reconnaître que les Mégariques sont parmi les plus mal connus des philosophes de l'Antiquité, assurément les plus insaisissables, alors même que les éléments de leur doctrine ressurgissent régulièrement dans les travaux des interprètes de Platon et d'Aristote ou dans ceux des historiens de la logique, et après que plusieurs d'entre eux eurent joui auprès des Anciens d'une célébrité égale à celle des plus grands. A cela il y a d'abord une raison simple, la quasi-absence de textes: des originaux il ne subsiste en effet que quelques courts *fragments* difficiles à exploiter, et les *témoignages* des Anciens sont dans l'ensemble peu nombreux, souvent brefs, dispersés, et donc d'un accès malaisé. Cette situation défavorable n'est certes pas réservée aux seuls Mégariques, puisque bon nombre de Présocratiques, les Cyniques ou les Cyrénaïques, pour ne citer qu'eux, ne sont apparemment pas mieux lotis. Pour tous ceux-là, cependant, le lecteur moderne a à sa disposition, parfois depuis longtemps, des recueils regroupant l'essentiel ou la totalité des textes subsistants (1), alors que pour les Mégariques il lui aura fallu attendre le dernier tiers du XXe siècle: ce n'est qu'en 1972, en effet, qu'est paru le livre de K. Döring qui réunit pour la première fois l'ensemble des fragments et témoignages qui les concernent (2). Les qualités de ce travail, jointes à la commodité que constitue le fait d'avoir enfin regroupés et ordonnés la quasi-totalité des textes intéressant les Mégariques font qu'il est en passe de devenir classique, les historiens de la philosophie et de la logique s'y référant de plus en plus volontiers. On ne pouvait donc mieux faire, quand il s'est agi de proposer au lecteur français la documentation la plus complète et la plus sûre sur la pensée mégarique, que de prendre le livre de Döring comme base de travail, et de traduire la totalité des

fragments et témoignages rassemblés par lui en respectant sa numérotation et la disposition générale de son ouvrage. Il est bien connu cependant que les difficultés du genre empêchent presque fatalement un recueil de ce type d'être réellement exhaustif et de se suffire à lui-même. Il faut d'abord sélectionner et découper les textes pertinents, ce qui exige qu'on se donne des critères à la fois rigoureux et maniables, mais qui ne seront jamais totalement à l'abri de la contestation. Il faut ensuite tenir compte du fait qu'un extrait isolé de son contexte peut être inintelligible, ou interprété à contresens; de même la juxtaposition de fragments d'auteurs et de siècles différents, parfois très éloignés les uns des autres, peut avoir des conséquences malheureuses.

Il faut reconnaître que sur le premier point le travail de Döring ne suscite que peu de réserves: ayant adopté le principe de ne retenir que les textes où apparaît formellement le nom des Mégariques en général ou de l'un au moins des membres présumés du groupe, l'auteur ne fait donc pas figurer dans son recueil les divers passages où la critique moderne a cru déceler des allusions aux Mégariques. Si cette prudence peut sembler excessive à certains, elle a du moins le mérite de la clarté et de la rigueur en proposant un minimum de textes incontestables: dans la mesure où il est difficile de trancher sur la base de simples critères externes dans les querelles opposant à ce sujet les spécialistes, elle laisse aux interprètes la responsabilité de leurs choix. Tout au plus pourrait-on remarquer que Döring est infidèle à son principe à une ou deux reprises -- en omettant telle phrase où figure pourtant le nom d'un Mégarique(3), ou en incluant un fragment dans lequel aucun nom n'est cité (4) -- et que parfois le mauvais découpage d'un extrait interdit d'en saisir clairement la signification.

La deuxième difficulté, quant à elle, ne peut guère être tournée qu'en joignant aux fragments et témoignages une

introduction ou un commentaire, dont l'objet serait de restituer aussi souvent que nécessaire les divers contextes, et de mettre en lumière la cohérence conceptuelle des principaux éléments de la doctrine, ou, à défaut, de faire apparaître au moins l'unité d'inspiration de l'ensemble. Bien que l'auteur ait complété son travail par un commentaire assez fourni (une centaine de pages), il ne paraît pas que cette reconstruction de la pensée mégarique ait été pour lui un objectif prioritaire: tous ses soins sont allés à la réunion et à l'établissement des textes, les éclaircissements qui les accompagnent étant plutôt de nature historique et philologique.

C'est en tenant compte de ces difficultés et de cet état de fait que nous avons conçu notre propre travail. Les mérites du livre de Döring étant reconnus, on devait seulement chercher à le compléter pour pallier les inconvénients qu'on vient de relever. Pour combler les rares lacunes de sa collection, mais surtout pour éclairer par les sources anciennes elles-mêmes le contenu de quelques fragments elliptiques ou allusifs, un certain nombre de textes complémentaires ont été ajoutés en Annexes, ainsi qu'une brève liste des allusions probables ou possibles proposées par divers spécialistes; d'autre part, pour corriger dans la mesure du possible les effets négatifs de l'extrême dispersion de nos sources et de la brièveté de la majorité d'entre elles, on s'est efforcé d'éclairer par un Commentaire la signification littérale et la portée philosophique des divers fragments, la place occupée par ce commentaire se justifiant par la rareté, dans notre langue, des travaux consacrés aux Mégariques: hormis deux ou trois études déjà anciennes (6), on ne dispose en effet à ce jour que de quelques courts chapitres inclus dans les histoires générales de la philosophie et d'articles spécialisés sur telle ou telle question particulière de logique (7), ce qui est manifestement insuffisant quand on cherche à acquérir une

vue cohérente sur la nature exacte et l'étonnant destin de la doctrine mégarique.

Étrange destin, en effet, que celui des philosophes de Mégare. Les caractères particuliers de la documentation, que l'on vient de rappeler (sources indirectes, fragmentaires, longtemps difficiles à consulter), n'expliquent sans doute pas à eux seuls la méconnaissance dont ils sont encore partiellement victimes. Car il faut savoir qu'une certaine ambiguïté a marqué leur réputation dès l'origine: si on leur reconnaissait volontiers des talents hors pair, principalement dans le domaine de la dialectique, si on saluait la personnalité exceptionnelle à tous égards d'un Stilpon, on ne manquait pas de dénoncer d'autre part les dangers que présentait l'usage de ces mêmes talents, ou de souligner la vanité de leurs prétendus tours de force. Pour comprendre ces jugements contrastés -- auxquels font curieusement écho les appréciations contradictoires des historiens de la logique des XIX^e et XX^e siècles (8) -- et pour éviter les risques de méprise, il est indispensable de donner d'abord, à qui voudrait entreprendre la lecture des textes, une vue plus précise sur la situation historique de l'École de Mégare; on tentera ensuite, pour les mêmes raisons, de restituer quelque chose de l'unité d'une pensée souvent réduite à quelques thèses disparates et paradoxales." pp. 7-9

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Study III: *The Stoics on Sign-Inference and Demonstration* pp. 147-193, Appendix: *The Evidence for a Dialectical Origin of the Stoic Theory of Signs* (pp. 188-193).

"The existence of a Dialectical school distinct from the Megarian school is controversial. The case in favour is made by D. Sedley,(33) doubts have been raised by K. Döring.(34) I am not concerned here with this wider controversy, but only with T. Ebert's contention that the Stoic theory of the sign had its origin in the Dialectical school.

The principal piece of evidence for this thesis is a passage in chapter 9 of the pseudo-Galenic *Historia philosopha* , where, as we have already had occasion to observe, a definition of the sign essentially the same as that in Sextus is preserved, but commemorative and indicative signs are represented as species of the genus sign determined by this definition." (pp. 188-189)

(...)

"But the burden of my argument in this study is that the distinction and the definition do not form a unity and that, if we must look for the origin of the distinction outside the Stoa, the most likely place is not the Dialectical school but in medicine. If this is right, it is possible to agree with Ebert that the distinction between commemorative and indicative signs is not Stoic without agreeing that it must be Dialectical or that its source and that of the definition of the sign must be sought in the same place." (p. 193)

2. ———. 2019. "Megara and Dialectic." In *Dialectic after Plato and Aristotle* , edited by Bénatouil, Thomas and Ierodiakonou, Katerina, 17-46. Cambridge: Cambridge University Press

"I spoke of the philosophers traditionally regarded as members of a Megaric school. In a 1977 article on Diodorus Cronus, David Sedley argued (among other things) that, instead of the single Megaric school of tradition, there were at least two distinct schools, the Megaric and the Dialectical (and possibly a third, the Eristical).(10) After setting out this view, I shall rehearse some objections to it and eventually sketch a position that

can, I think, be viewed as one of tentative and qualified agreement.

This is the occasion for another caution, however. Suppose that a certain amount of cold water is thrown on the idea of a distinct Dialectical school.

It would be a mistake, I maintain, to think that that there ought to be a presumption in favour of the traditional one-school view. Questions about whether and in what way there was such a thing as a Megaric school can and have also been raised.⁽¹¹⁾ Doubts about the existence of a distinct Dialectical school should not necessarily be seen as confirming the traditional conception of a unitary Megaric school. In an effort to avoid prejudging the issue, I shall refer to a 'dialectical group'." (p. 21)

(10) Sedley 1977, summary and comments in Giannantoni 1990 *SSR* 4.46-8 (possibly anticipated by Schmid, whose view I know only from the summary in Giannantoni 4.43).

(11) Cambiano 1977; Giannantoni 1990 *SSR* 4.45-6.

Cautions about the use of the term 'school': Döring 1972, 1989; Muller 1985: 9-10 (Muller 1988 is, however, more sympathetic to the idea of a Megaric school).

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Sedley, D. (1977) 'Diodorus Cronus and Hellenistic philosophy' *PCPS* 23: 74-120.

3. Barnes, Jonathan. 1993. "A big, big D?" *The Classical Review* no. 63:304-306.

Reprinted with the title: *Logic and the dialecticians* as Chapter 16 of J. Barnes, *Logical Matters: Essays in Ancient Philosophy II*, edited by Maddalena Bonelli, Oxford: Clarendon Press 2012, pp. 479-484.

" 'As Aristotle invented predicate logic, so Chrysippus invented propositional logic. Unlike Aristotle, Chrysippus had precursors; but his debt to them was slight — and in any event we know little or nothing about them.(1)

Thus, in caricature, an orthodoxy. Theo Ebert has urged heresy: Chrysippus, he suggests, owed a very great deal to his precursors — and we can itemize at least some parts of the debt. For substantial parts of Chrysippean logic were based, directly or indirectly, on the work of the Dialecticians (Diodorus Cronus, Philo, and their associates), and it is the Dialecticians whom we should honour as the inventors of propositional logic.(1) In doing so we shall not merely pay just tribute to the eminent dead: we shall come to a better understanding of the course and career of logic itself.

Ebert's thesis is sustained by meticulous analyses of familiar texts, most of them in Sextus; and a thorough consideration of it would occupy a volume here — ολίγα από πολλῶν — I voice two general doubts and sketch two particular disagreements." (p. 479 of the reprint)
(...)

"In sum, Ebert has not yet converted me to his heresy.**

Nonetheless, I give his book four hearty cheers. It is a rattling good read; it is lucid and open and honest; it essays sharp and subtle interpretations of texts which other scholars have merely blustered through; and in the course of discussing the theories of signs and of proof, the classification of types of proposition, the analyse of fallacies and sophisms, it often throws new and brilliant light on a

portfolio of documents which are central to our understanding of Hellenistic logic." (p. 484 of the reprint)
(1) Ebert denies any share of honour to Theophrastus and the Peripatetics: pp. 15-19, 73 n. 8.

* A review of T. Ebert, *Dialektiker und friihe Stoiker bei Sextus Empiricus: Untersuchungen zur Entstehung der Aussagenlogik*, Hypomnemata 95 (Gottingen, 1991) originally published in CR 43,1993, 304-306, under the title 'A big, big D?'. (Some readers of which forgot that the answer to the question, is: 'Well, hardly ever'.)

** He has replied to the chief parts of this review on pp. 283-293 of his 'Defence'. [T. Ebert, *In Defence of the Dialectical School*, in: Francesca Alesse (ed.), *Anthropine Sophia. Studi di filologia e storiografia filosofica in memoria di Gabriele Giannantoni*, Napoli: Bibliopolis 2008, pp. 275-293.]

4. Bobzien, Susanne. 1993. "Chrysippus' Modal Logic and its Relation to Philo and Diodorus." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 63-84. Stuttgart: Franz Steiner. On Philo the Dialectician: "Philo's modal definitions are the least well reported and their exact meaning cannot be reconstructed with certainty. Only Boethius gives all four Philonian modal definitions (*in Int* . 234.10-22). The other three sources, all Aristotle commentators as well (Alex. Aphr. *in Apr* . 183f; Phlp. *in Apr* . 169; Simp. *in Cat* . 195f), confine themselves to Philo's notion of possibility, contrasting it with others; and it is not always clear what is part of the definition and what is part of the contrast. I will rely primarily on Boethius. According to his report, a proposition is Philonian possible, iff it is capable of truth according to the proposition's own nature or as far as the proposition itself is concerned; otherwise it is impossible. Thus, it seems, what is required for Philonian possibility is some sort of intrinsic consistency of the proposition. The propositions '(this) piece of wood bums' (Simp. *in Cat* .

196.1), 'Diodes is alive', 'it is night' would all be consistent in this sense.

The evidence is too sparse and heterogeneous to allow one to give a clear account of the type of consistency Philo had in mind. As it is also not essential for what follows, I leave the concept of consistency uninterpreted.

Consistency seems to be a common and reasonable criterion for possibility; still, due to the temporalized concept of truth, it works a little differently for Hellenistic propositions than for atemporal propositions." (p. 67, notes omitted)

On Diodorus Cronus: "As in the case of Philo, for Diodorus the full set of modal definitions is only reported by Boethius (*in Int.* 234.22-6). Yet, the definition of possibility is confirmed in some other sources (Alex. Aphr. *in APr.* 183f.; Phlp. *in APr.* 169; Simp, *in Cat.* 195; Boeth. *in Int.* 412), and we have further valuable information about Diodorus' modal theory in Epictetus, Cicero, and Plutarch (Epict. *Diss.* 2.19.1-5; Cic. *De fato* 12, 13, 17 and *Fam.* 9.4; Plu. *De Stoic., rep.* 1055E-F).

For Diodorus, a proposition is possible iff it either is true or will be true." (p. 69, note omitted)

5. ———. 1998. *Determinism and Freedom in Stoic Philosophy*. Oxford: Clarendon Press.

Chapter 3.1.2 *Diodorus and necessitarianism*, pp. 102-108.

"We can hence conclude—fully in accord with the surviving passages—that Diodorus' modal notions were not criticized for leading to universal necessitarianism, i.e. to the theory that 'everything is necessary'—for that it is day, for instance, is not Diodorean necessary. Rather what was found unacceptable was that whatever in fact never happens is impossible (or alternatively that all false propositions about what happens in the future are impossible). This was the only straightforward way, within Hellenistic logic, to express the thought that Diodorus' modalities preclude counterfactual possibilities. But this is surely enough to worry not only a libertarian but also a 'soft determinist' such

as Chrysippus. So Chrysippus, since he wanted to retain 'counterfactual possibilities', had to reject Diodorus' modal concepts. And he did this, as is well known, by attempting to refute the Master Argument, i.e. the argument with which Diodorus established his notion of possibility as the (only) right one.(26) Still, the question remains: what concept of possibility should Chrysippus adopt instead? One choice he had was Philo's." (p. 108)

(26) For Chrysippus' refutation of this argument see e.g. Bobzien 1986 [*Die stoische Modallogik* (Würzburg)], 105-13.

6. ———. 1999. "Logic. II. The 'Megarics'." In *The Cambridge History of Hellenistic Philosophy*, edited by Algra, Kempe, Barnes, Jonathan, Mansfeld, Jaap and Schofield, Malcolm, 83-91. Cambridge: Cambridge University Press.

"Apart from the various logical puzzles and sophisms, there are only two topics on which we can be sure of a positive contribution to logic(25) by the 'Megarics'.(26) These are the positions of Diodorus Cronus and of Philo on the theory of conditionals and on modal logic. Why the discussion of these topics came down to us, we can only divine. Certainly both involve notorious difficulties. Again, they were topics which were extensively and intensely discussed in Hellenistic logic; so much so that the disputes became part of the general knowledge of the intelligentsia of the time (e.g. Sextus Empiricus *M* [*Adversus mathematicos*] 1.309–10). In addition, the theory of modalities was believed to have far-reaching results for other areas of philosophy." (p. 83)

(25) Logic in the narrow sense, i.e. not including contributions to the study of ambiguity.

(26) On the extent to which it is legitimate to speak of a 'Megaric' (or Dialectical), 'school', see above, p. 47 n. 105. P. 47, note 105: On the existence and name of this school, cf. Cambiano 1977 and Sedley 1977. Against this, see Döring

1989. Like Giannantoni 1990, iv 41–50, I am inclined to accept Sedley's hypothesis regarding the 'Dialectical' school. For the chronology of these philosophers I follow Sedley 1977, 107 n. 23. Cf. also the useful chronological table *ibid.* 82.

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Cambiano, G. (1977) 'Il problema dell' esistenza di una scuola Megarica', in *Scuole socratiche minori e filosofia ellenistica*, ed. G. Giannantoni. Bologna: 1977.

Döring, K. (ed.) (1989) 'Gab es eine Dialektische Schule?', *Phronesis* 34: 293-310.

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Sedley, D. (1977) 'Diodorus Cronus and Hellenistic philosophy' *PCPS* 23: 74-120.

7. Bochenski, Joseph. 1951. *Ancient Formal Logic*. Amsterdam: North-Holland.

Chapter V. *The Stoic-Megaric School*, pp. 77-102.

"The development of formal logic in Antiquity reached its peak in the works of the thinkers belonging to the Megaric and Stoic Schools. Unfortunately, none of those works are preserved and our information concerning them supplied by later sources is desperately scarce. It is sufficient, however, to show that among both Megaricians and Stoics there were very great logicians and that the general level of the formal rigour obtained by those schools was remarkable - indeed, superior in some respects to that of our own today. Among the discoveries which may safely be attributed to them, are the following: invention and statement in form of an axiomatic system (which seems to have been both consistent and complete) of a logic of propositions; invention of truth-tables and thorough discussions of the meaning of implication;

subtle semiotical doctrines, including a sharp distinction between the logical laws and the metalogical rules of

inference, and a clear distinction between intension and extension.

We shall expound here, after a historical survey (13), their logic in four chapters, dealing respectively with semiotics (14), the theory of propositional functors (15) the rules of inference or syllogisms (16) and the paradoxes, including the famous Liar (17)." (p. 77)

8. ———. 1961. *A History of Formal Logic* . Notre Dame: Indiana University Press.

Translated from the German edition " *Formale Logik* " (1956) by Ivo Thomas.

Reprinted New York, Chelsea Publishing Co., 1970.

Chapter III. *The Megarian-Stoic School* , pp. 105-133.

"In reading the Megarian-Stoic fragments one's first impression is that here is something different from Aristotelian logic: terminology, laws, the very range of problems, all are different. In addition we are confronted with a new technique of logic. The most striking differences are that the Megarian-Stoic logic is firstly not a logic of terms but of propositions, and secondly that it consists exclusively of rules, not of laws - as does the *Prior Analytics* . The question at once arises, what was the origin of this logic.

The answer is complex. First of all one cannot doubt that the Megarians and Stoics, who as we have seen (cf. 18.03) found an only too frequent delight in refutation, had a tendency to do everything differently from Aristotle. Thus for example they introduce quite new expressions even where Aristotle has developed an excellent terminology. Yet it should not be said that their logical thought could have developed uninfluenced by Aristotle. On the contrary, they appear to have developed just those ideas which are last to appear in the *Organon* . We find, for instance, a more exact formulation of the rules which Aristotle used in axiomatizing the syllogistic, and himself partially formulated. Nor can it be denied that they developed his

theory of 'syllogisms from hypotheses', chiefly on the basis of the preparatory work of Theophrastus. And generally speaking they everywhere show traces of the same spirit as Aristotle's, only in a much sharper form, that spirit being the spirit of formalized logic." (p. 108)

9. Ciuni, Roberto. 2009. "The Search for the Diodorean Frame." *Humana Mente* no. 3:47-65.

Abstract: " *Diodorean modalities* are logical notions that specify, in a precise way, how sentences may be true with respect to time: a sentence is diodoreanly necessary at a given instant iff it is true since that instant on.

Arthur Prior has treated them as sentential operators and built up a logic for such modalities (DIOD) conjecturing that the frame for such a logic (the "diodorean frame") was the frame for S4. The Conjecture was soon proved false, through a number of counterexamples that played a role in the research on modal logics between S4 and S5. The present paper aims at showing that (i) the search for the diodorean frame benefited from such a research, and that (ii) there has been a mutual interaction between the search of the diodorean frame and some characterisation results. The paper is divided into five parts. In section 1, I will introduce diodorean modalities, while in Section 2 I will be focusing on Prior's reconstruction of the Master Argument and his characterisation of DIOD. In section 3, I present a conjecture Prior advanced about the characterisation of DIOD and some counterexamples to it. The notions of "frame" and "frame for" will be also introduced. In section 4 I summarise the connections between the search of the diodorean frame and some researches in modal logic. Section 5 presents a short conclusion."

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Prior Arthur N. (1958), *Diodorus and Modal Logic: a Correction* , The Philosophical Quarterly, 20/5: 205-213.

10. Crivelli, Paolo. 1994. "The Stoic Analysis of Tense and of Plural Propositions in Sextus Empiricus, *Adversus Mathematicos* X 99." *Classical Quarterly* no. 44:490-499.
" *Adversus Mathematicos* (*M.*) x is the second book dedicated by Sextus to the discussion of the physical doctrines put forward by dogmatic philosophers. An extensive section (*M.* X 85-120) deals with Diodorus Cronus' arguments concerning movement.
M. X 99 occurs within the report of a debate on motion and time between Diodorus and some unnamed opponents. The passage is probably corrupt (as was already noticed by Heintz) and contains some observations on plural propositions and tense which have not yet been satisfactorily explained. In this paper I argue that Diodorus' critics are Stoics, propose a new emendation of the text, and attempt a plausible account of the remarks on plural propositions and tense. Thereby some light is shed on a hitherto unexplored region of Stoic logic." (p. 490)

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11. Denyer, Nicholas. 1981. "The atomism of Diodorus Cronus." *Prudentia* no. 13:33-45.
12. ———. 1998. "Philoponus, Diodorus, and Possibility." *Classical Quartelry* no. 48:327.
Abstract: "The definition here ascribed to Philo [*] is entirely in line with what we know of Philo from else where: Alexander Aphrodisensis, in *Analitica Priora* 184.6–10; Simplicius, in *Categorias* 195.33–196.5; Boethius, in *de Interpretatione* 234.10–15. The same is not true of the definition here ascribed to Diodorus. For Diodorus, we are told elsewhere, defined the possible as that which either is or will be so: Cicero, *de Fato* 13, 17; Plutarch, *De Stoicorum repugnantis* 1055d-e; Alexander Aphrodisensis, in

Analitica Priora 183.42–184.5; Boethius, in *de Interpretatione* 234.22–4, 412.16–7. Something has therefore got garbled."

[*] Phlp. in *APr.* 169.17–21. This is fr. 136 in the collection of K. Doring, *Die Megariker* (Amsterdam, 1972); and part of ft. II F 27 in the collection of G. Giannantoni, *Socratis et Socraticorum Reliquiae* (Naples, 1990). Both Doring, pp. 39–43, and Giannantoni, i.429–33, reprint all the other passages here cited.

13. ———. 2002. "Neglected Evidence for Diodorus Cronus." *Classical Quarterly* :597–600.

"There are two standard compilations of the evidence relating to Diodorus Cronus and the Megaric school of philosophers.(1) Neither contains Eustathius, *Ad Hom. Od.* 28.46–29.2, part of his note on *Odyssey* 1.107." (p. 597)
(...)

"The second thing we learn about Diodorus Cronus from this neglected passage is that as early as c. A.D. 100 someone—Suetonius—actually called him a Megaric. This is without parallel in our other sources. When other sources apply to Diodorus what might be a label for his school, they uniformly call him διαλεκτικός, and the διαλεκτικοί (perhaps it should be printed with a capital delta) were rivals from whom Megarics are reported to have recruited pupils (D.L. 2.113). It has been proposed in consequence that we should abandon the recent practice of describing Diodorus as a Megaric, and call him a Dialectician instead(2) The proposal can still be adopted, even though we now have direct evidence of someone in antiquity calling Diodorus a Megaric. For supporters of the proposal can maintain that Suetonius too fell victim to the same confusion that has led more recent scholars to describe Diodorus as a Megaric rather than as the Dialectician that in fact he was. Nevertheless, in the light of the neglected

passage of Eustathius, the proposal is perhaps less attractive than it originally looked." (p. 598)

(2) D. Sedley, 'Diodorus Cronus and Hellenistic philosophy', *PCPS* 203 (n.s. 23) (1977), 74–120, at 74–7. Sedley's proposal was rejected by Giannantoni, who placed Diodorus testimonia in his section on Megarics. It was treated with some disdain by K. Döring, 'Gab es eine Dialektische Schule?', *Phronesis* 34 (1989) 293–310, and taken up enthusiastically by Theodor Ebert, *Dialektiker und frühe Stoiker bei Sextus Empiricus: Untersuchungen zur Entstehung der Aussagenlogik* (Göttingen, 1991) = Hypomnemata 95, and N. Denyer, 'Diodorus Cronus', in E. J. Craig (ed.), *The Routledge Encyclopedia of Philosophy* (London, 1998), 2.83–6. The most recent discussion is F. De Mattia, 'Diodoro Crono: testimonianze antiche ed esegesi moderna', unpublished dissertation (Bologna, 2000), 15–39.

14. Döring, Klaus. 1989. "Gab es eine Dialektische Schule?" *Phronesis* no. 34:293-310.

English abstract: "Until recently, students of ancient philosophy have generally believed that Diodorus Cronus was a member of the Megarian school founded by Socrates' pupil Euclides of Megara. In 1977, however, David Sedley claimed that Diodorus should be associated with the so-called Dialectical school. The article argues against this view. The main results are (1) There are no testimonies which suggest that we should distinguish between Megarians and Dialecticians. (2) The so-called Dialectical school never existed; it is a construct of ancient historians of philosophy."

"Ich fasse zusammen.

Die Sichtung der Zeugnisse hat vor allem zu den folgenden beiden Ergebnissen geführt: 1. Weder aus der Zeit um 300 noch aus späterer Zeit gibt es Zeugnisse, die dazu zwingen oder es auch nur nahelegten, in Zukunft anders, als es bisher üblich war, zwischen Megarikern und Dialektikern zu

unterscheiden und Stilpon den Megarikern und Diodor den Dialektikern zuzuordnen. 2. Versteht man unter einer philosophischen Schule, wie wir dies bewußt oder unbewußt üblicherweise tun, eine über mehrere Generationen hin durch bestimmte institutionelle Bindungen, vor allem aber durch einen Fundus gemeinsamer Grundüberzeugungen zusammengehaltene Gemeinschaft philosophisch interessierter und gebildeter Personen, dann hat es eine Megarische Schule nie gegeben." (p. 309)

(...)

"Liegen die Dinge so, wie ich sie gerade skizziert habe, dann können wir Diodoros Kronos und seinen Schüler Philon in unseren Philosophiegeschichten und die sie betreffenden Testimonien in unseren Textsammlungen guten Gewissens an dem Ort belassen, an dem sie bis jetzt gestanden haben, bei den Megarikern. Wir müssen nur darauf achten, daß wir mit der Bezeichnung "Megariker" keine falschen Vorstellungen verbinden." (p. 310)

15. Döring, Klaus, and Ebert, Theodor, eds. 1993. *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*. Stuttgart: Franz Steiner.

Inhaltsverzeichnis: Vorwort 7; Abkürzungsverzeichnis 8; Teilnehmerverzeichnis 9; Wolfram Ax: Der Einfluss des Peripatos auf die Sprachtheorie der Stoa 11; Mariano Baldassarri: Ein kleiner Traktat Plutarchs über stoische Logik 33; Jonathan Barnes: Meaning, Saying and Thinking 47; Susanne Bobzien: Chrysippus' Modal Logic and Its Relation to Philo and Diodorus 63; Walter Cavini: Chrysippus on Speaking Truly and the Liar 85; Theodor Ebert: Dialecticians and Stoics on the Classification of Propositions 111; Urs Egli: Neue Elemente im Bild der stoischen Logik 129; Michael Frede: The Stoic Doctrine of the Tenses of the Verb 141; Gabriele Giannantoni: Die Philosophenschule der Megariker und Aristoteles 155; Karlheinz Hülser: Zur dialektischen und stoischen Einteilung der Fehlschlüsse 167; Katerina Ierodiakonou:

The Stoic Indemonstrables in the Later Tradition 187; Fritz Jürss: Zum Semiotik Modell der Stoiker und ihrer Vorläufer 201; Mario Mignucci: The Stoic *Themata* 217; Luciano Montoneri: Platon, die Ältere Akademie und die stoische Dialektik 239; Luciana Repici: The Stoics and the *Elenchos* 253; Andreas Schubert: Die stoischen Vorstellungen 271; Gerhard Seel: Zur Geschichte und Logik des *therizon logos* 291; Hermann Weidemann: Zeit und Wahrheit bei Diodor 319; Literaturverzeichnis 331; Register 343-361.

16. Ebert, Theodor. 1987. "The Origin of the Stoic Theory of Signs in Sextus Empiricus." *Oxford Studies in Ancient Philosophy* no. 5:83-126.

"In his critical discussion of the dogmatic philosophers Sextus Empiricus expounds a Stoic doctrine which has conveniently been labelled 'the theory of signs'. This chapter of Stoic philosophy offers a blend of logic and epistemology, a mixture bound to attract the interest of present-day 'ancient philosophers'. Hence, with the growing discussion focusing on the philosophy of the Hellenistic period, this part of Stoicism was to get a fair share of attention. Controversy has been flourishing over the merits and weaknesses of this theory; it has been compared with tenets about the topic of signs held by earlier and later philosophers, yet in these discussions it has almost universally been taken for granted that there is a single theory of signs and that it can be attributed unqualifiedly to the Stoics. (2)

Part of what I want to do in this paper is to challenge this assumption. I shall argue that the material relating to the theory of signs which is preserved in Sextus does not reflect Chrysippian teaching, but goes back to Stoics antedating Chrysippus. To have a convenient term, I shall refer to the pre-Chrysippian Stoics as 'early Stoics'. I shall further argue that the theory of signs of the early Stoics was a harvest not grown in the fields of Stoic philosophy, but that it originated from the 'Dialecticians', a group of philosophers confused

for a long time with the Megarians and rediscovered as a group in its own right by David Sedley.(4) I shall further try to point out some modifications which this theory underwent as it was integrated into the epistemology of the early Stoics. I shall not discuss the doctrine of signs advocated by the opponents of the Epicureans in Philodemus' *de Signis* - almost certainly Stoic philosophers - a doctrine which has been ably discussed by David Sedley in a recent paper.(5)" (pp. 83-84, two notes omitted)

(2) The only exception known to me is D. Sedley who wants to 'put into abeyance the widespread belief that Stoic doctrine is under discussion by Sextus Empiricus throughout *M* VIII. 141-298 and *PH* II. 97-133 (Sedley, 'On Signs', in *Science and Speculation: Studies in Hellenistic Theory and Practice*, ed. Barnes et al. (Cambridge/Paris, 1982), 239-72.

(4) Cf. D. Sedley, 'Diodorus Cronus and Hellenistic Philosophy', *Proceedings of the Cambridge Philological Society*, CCIII, NS 23 (1977), 74-120.

(5) Cf. D. Sedley, 'On Signs', cit.

17. ———. 1991. *Dialektiker und frühe Stoiker bei Sextus Empiricus. Untersuchungen zur Entstehung der Aussagenlogik*. Göttingen: Vandenhoeck & Ruprecht. Inhalt: Einleitung 13; I. Teil: Der Ursprung der Stoischen Theorie des Zeichens 29; Erstes Kapitel: Die stoische Theorie des Zeichens bei Sextus Empiricus 29; Zweites Kapitel: Die stoische Theorie des Zeichens vor dem Hintergrund der Berichte bei Diogenes Laertius 54; Drittes Kapitel: Dialektiker und frühe Stoiker zur Theorie des Zeichens 66; II. Teil: Die Dialektiker bei Sextus Empiricus 83; Viertes Kapitel: Die Dialektische Klassifikation der Aussagen bei Sextus Empiricus 83; Fünftes Kapitel: Die Dialektische Klassifikation der Aussagen als Vorstufe der stoischen 108; Sechstes Kapitel: Die Dialektische und die stoische Klassifikation der Fehlschlüsse bei Sextus Empiricus 131; Siebtes Kapitel: Die Dialektiker über

Trugschlüsse und ihre Auflösung 176; III. Teil: Der Ursprung der Stoischen Theorie des Beweises; Achtes Kapitel: Der frühstoische Charakter der Theorie des Beweises bei Sextus Empiricus 219; Neuntes Kapitel: Übereinstimmungen und Unterschiede in den Referaten des Sextus zur stoischen Beweistheorie und das genetische Verhältnis ihrer Quellen 232; Zehntes Kapitel: Von den Dialektikern zu Chrysipp - der Weg einer Theorie in der Alten Stoa 287; Anhang: Texte aus Sextus Empiricus zu den Dialektikern und den Stoikern 311; Literaturverzeichnis 329; Register: 337.

18. ———. 1993. "Dialecticians and Stoics on the classification of propositions." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 111-127. Stuttgart: Franz Steiner.
"In his discussion and refutation of the logical theories of dogmatist philosophers in *Adversus Mathematicos* (M.) 8, Sextus Empiricus treats us, among other things, to an account of a classification of propositions (M . 8.93-129). The doctrine reported on here is usually taken to form part of Stoic logic.(1) Together with its apparent counterpart in Diogenes Laertius (D.L.) 7.68-76, this Sextian report is used to reconstruct a theory supposedly held by Stoic philosophers. In what follows I shall try to refute this view and I shall argue that Sextus' report encapsulates a doctrine worked out not by the Stoic, but by the Dialectical school whose most prominent members seem to have been Diodorus Cronus and Philo.(2)
First I shall try to show that the two reports by Sextus and by Diogenes resp. are quite different indeed as to their systematic content and that, therefore, both reports must be drawn from different sources. In a second step it is then argued that Sextus' account is based on Dialectical material. Finally, I shall compare the Dialectical classification to be found in Sextus to the Stoic one in Diogenes with an eye to

exploring these two divisions as different phases within the development of propositional logic." (p. 111)

(1) Cp. Mates (1953) 30f., 54, Kneale (1962) 146, 148f., Mignucci (1965) 131, Egli (1967) 37f., Mueller (1969) 185, Frede (1974a) 49-62 passim, Brunschwig (1984) 9ff.; already v. Arnim put this text, omitting some parts, among the logical fragments of Chrysippus: SVF fr. 205, 211, 216.

(2) Cp. D. Sedley (1977).

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H. v. Arnim, *Stoicorum Veterum Fragmenta* . 3 Bde.

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19. ———. 2008. "In Defence of the Dialectical School." In *Anthropine Sophia. Studi di Filologia e Storiografia Filosofica in Memoria di Gabriele Giannantoni* , edited by Alesse, Francesca, Aronadio, Francesco, Dalfino, Maria Cristina, Simeoni, Luca and Spinelli, Emidio, 275-293. Napoli: Bibliopolis.

"In 1977, David Sedley published a paper in which, among other things, he argued that the Dialectical and the Megarian school were not, as had hitherto been assumed, two names for the same sect, although at different periods,

but that both were distinct groups of Hellenistic philosophers.(1) The received opinion, attacked by Sedley, based its claim on a passage in Diogenes Laertius (Diog. Laert.) concerning the disciples of Euclides of Megara, one of the minor Socratics:

His followers were called Megarians after him, then Eristics, and at a later date Dialecticians, that name having first been given to them by Dionysius of Chalcedon ... (Diog. Laert. II 106 = Giannantoni, SSR II A 22)(2)

The source of this text is probably Alexander Polyhistor, whose *Successions of Philosophers* is mentioned in the sentence preceding the one just quoted. Alexander lived around 100 B.C. Against this passage Sedley draws attention to a different piece of evidence in Diog. Laert., namely a *verbatim* quotation from Philippus the Megarian, who gives a list of people whom Stilpo won over to his own school, i.e. the Megarians; after having mentioned two persons whom Stilpo had made to secede from Theophrastus and two more who came from Aristotle the Cyrenaic philosopher, Philippus continues:

From the Dialecticians he won over as devoted disciples Paeonius from Aristides, moreover Diphilus of Bosphorus, the former follower of Euphantes as well as Myrmex the son (or "follower") of Exaenetus, both of whom had come to refute him (Diog. Laert. II 113 = SSR II O 3).

Sedley concluded from this text that Megarians and Dialecticians could hardly be the same sect; the competition presupposed in this quotation from a contemporary of Stilpo clearly shows, thus Sedley, that Megarians and Dialecticians were seen as distinct schools by their contemporaries. As to the passage in Diog. Laert. II 106, this is, as Sedley argues, probably a doxographical construction of a διαδοχή, a succession of philosophers; it is not the description of a school, or αἵρεσις (4)." (pp. 275-276, note 3 omitted)

(...)

"The claim made by Sedley distinguishing the Dialecticians from the Megarians and the one made by me attributing source material in Sext. Emp. which had been used for the Stoics to the Dialectical school, in general met with a friendly reception(6). Yet neither claim has gone undisputed. Klaus Döring, to whom we owe our first comprehensive collection of the material relating to the Megarians(7), launched an attack on Sedley's contention(8); Döring sees no need to think of the Dialecticians as a separate school, distinct from the Megarians.(9) Even before Döring's 1989 paper, Robert Muller did not accept Sedley's separation of the Dialecticians from the Megarians (9). The attribution of the material in Sext. Emp. to the Dialecticians, for which I had argued, was flatly denied by Jonathan Barnes (10). Hence, it may be worthwhile to look at the available evidence again in order to see whether Sedley's and my original contentions can survive the criticisms of Döring and Barnes." (p. 277)

(1) D. Sedley, *Diodorus Cronus and Hellenistic Philosophy*, "Proceedings of the Cambridge Philological Society", 203, N.S. 23 (1977) pp. 74-120.

(2) I quote from the second edition of Gabriele Giannantoni's monumental collection: *Socraticorum reliquiae*, Napoli 1990, abbreviated as SSR.

(4) D. Sedley, *Diodorus Cronus*, cit., p. 75

(6) Thus, Giannantoni states that Sedley's conclusions "sono meritevoli della massima considerazione" [are deserving of the utmost consideration] (SSR IV p. 48). As to my monograph, cf. the reviews by A. Graeser, "Zeitschrift f. philos. Forschung", 46 (1992) pp. 443-447; K. Hulser, "Phronesis", 38 (1993) pp. 337-344; and in particular R. Chiaradonna, "Elenchos", 16 (1995) pp. 387-400.

(7) K. Döring, *Die Megariker, Kommentierte Sammlung der Testimonien*, Amsterdam 1972.

(8) K. Döring, *Gab es eine Dialektische Schule?*, "Phronesis", 34 (1989) pp. 293-310.

(9) R. Muller, *Introduction à la pensée des Megariques*, Paris 1988, p. 44 n. 24.

(10) J. Barnes, in his review of Th. Ebert, *Dialektiker*, cit., "Classical Review", 43 (1993) pp. 304-306 (quoted as Barnes).

20. Ettari, Dario. 2002. "La polemica sul possibile nel IV secolo a.C. [Aristotele, Filone, Diodoro Crono, Crisippo] in una interpretazione moderna." *Metalogicon* no. 15:27-32.

"Il passo aristotelico sopra riportato [Aristotele, *Metaphysica*, 1046b – 1047a] polemicamente indirizzato contro una tesi "megarica" non meglio precisata, mentre da un lato conferma il convincimento del suo autore circa il sussistere di uno stadio particolare dell'essere – vale a dire quello dell'essere-in-potenza come divenire, movimento – dall'altro lato offre un importante "aggancio" teorico per una comprensione della concezione aristotelica – ed indirettamente di quella megarica – del possibile, intorno al quale sorse nel IV secolo a. C. un fervido dibattito i cui protagonisti possono individuarsi appunto in Aristotele, nei Megarici (in particolare Diodoro Crono e Filone di Megara) e nel grande stoico Crisippo, ma la cui eco giunse fino a personaggi molto posteriori quali Alessandro di Afrodisia, Cicerone, Boezio, che ce ne lasciano importanti testimonianze."

(...)

"È comunque prassi storiografica comune attribuire appunto a Diodoro la tesi confutata da Aristotele, tesi che è formulabile all'incirca nei termini seguenti: *possibile è soltanto ciò che è o sarà* (3) laddove viceversa ciò di cui non si dà mai il caso avrebbe la caratteristica della impossibilità." (p. 28)

21. Giannantoni, Gabriele. 1980. "Aristotele, Diodoro Crono e il moto degli atomi." *Siculorum Gymnasium* :125-133.
22. Goldblatt, Robert. 1980. "Diodorean Modality in Minkowski Spacetime." *Studia Logica* no. 39:219-236.

Abstract: "The Diodorean interpretation of modality reads the operator \Box as "it is now and always will be the case that". In this paper time is modelled by the four-dimensional Minkowskian geometry that forms the basis of Einstein's special theory of relativity, with "event" y coming after event x just in case a signal can be sent from x to y at a speed at most that of the speed of light (so that y is in the causal future of x).

It is shown that the modal sentences valid in this structure are precisely the theorems of the well-known logic S4.2, and that this system axiomatises the logics of two and three dimensional spacetimes as well.

Requiring signals to travel slower than light makes no difference to what is valid under the Diodorean interpretation. However if the "is now" part is deleted, so that the temporal ordering becomes irreflexive, then there are sentences that distinguish two and three dimensions, and sentences that can be falsified by approaching the future at the speed of light, but not otherwise."

23. Grote, George. 1885. *Plato and the Other Companions of Sokrates* . London: John Murray.

Vol. 1, Chapter III. *Other companions of Sokrates* : *Diodorus Kronus* , pp. 140-146.

From the pains which Aristotle takes (in the "treatise 'De Interpretatione' and elsewhere) to explain and vindicate his own doctrine about the Potential and the Actual, we may see that it was a theme much debated among the dialecticians of the day. And we read of another Megaric, Diodorus Kronus, perhaps contemporary (yet probably a little later than Aristotle), as advancing a position substantially the same as that of Eubulides. That alone is possible (Diodorus affirmed) which either is happening now, or will happen at some future time. As in speaking about facts of an unrecorded past, we know well that a given fact either occurred or did not occur, yet without knowing which of the two is true - and therefore we affirm only that the fact may

have occurred: so also about the future, either the assertion that a given fact will at some time occur, is positively true, or the assertion that it will never occur, is positively true: the assertion that it may or may not occur some time or other, represents only our ignorance, which of the two is true. That which will never at any time occur, is impossible." (pp. 140-141)

(...)

"In what manner Diodorus stated and defended his opinion upon this point, we have no information. We know conclusion only that he placed affirmations respecting the future on the same footing as affirmations respecting the past: maintaining that our potential affirmation - *May or May not be* - respecting some future event, meant no more than it means respecting some past event, viz.: no inherent indeterminateness in the future sequence, but our ignorance of the determining conditions, and our inability to calculate their combined working." (pp. 143-144)

24. Hurst, Martha. 1935. "Implication in the Fourth Century." *Mind* no. 44:484-495.

"Modern analyses of the nature of necessary connection have given rise to more paradoxes than they have solved. A familiarity with the controversy between Diodorus and Philo which took place in the Fourth Century B.C. might perhaps have made unnecessary the anguish which modern logicians have suffered." (p. 484)

(...)

"The problem with which Diodorus and Philo were concerned was the definition of the "if . . . then" relation, or the discovery, as Sextus puts it, of the "criterion of following" (τῆς ακολουθίας ἐκτίθενται κριτήρια). (1) Philo's (2) definition is this: "there is a case of true fastening together when we have not a true antecedent and a false consequent". (3) This corresponds to the symbolic form - (p - q), and is equivalent to the definition of material implication. (4) The definition of Diodorus is: "that is a case of true fastening

together which did not and does not admit the possibility of the antecedent being true and the consequent false ".(6)
This is practically equivalent to Lewis's definition of strict implication.(6)

(1) *Adv. Math .*, VIII, 113.

(2) Sextus gives Philo's views first and this is the natural order of exposition, as Diodorus succeeded in refuting Philo, while, as far as we know, Philo did not refute Diodorus. It may also be the chronological order of development, in spite of what was said above as to the relation of the two men; for Diodorus may have made his views explicit only in answer to the criticisms of his pupil.

(3) Sextus, *Adv. Math.*, VIII, 113: οἷον ὁ μὲν Φίλων ελεγεν ἀληθὲς γίνεσθαι τὸ συνημμένον ὅταν μὴ ἀρχηται ἀπ' ἀληθοῦς καὶ λήγη ἐπὶ ψεύδους [Thus Philo declared that " the hypothetical is true whenever it does not begin with what is true and end with what is false" (tr. Bury, vol. II, p. 297)]

(4) Peirce, *Collected Paper s*, 3, 374; Russell, *Principles of Mathematics*, 16, p. 14; Russell, *Introduction to Mathematical Philosophy* , p. 147, *Principia Mathematica* , I, p. 94.

(5) Sextus, *Adversus Mathematicos*, VIII, 115: Διόδωρος δὲ ἀληθὲς εἶναι φησι συνημμένον ὅπερ μήτε ἐνεδέχετο μήτε ἐνδέχεται ἀρχόμενον ἀπ' ἀληθοῦς λήγειν ἐπὶ ψεύδους. [But Diodorus asserts that " the hypothetical proposition is true which neither admitted nor admits of beginning with truth and ending in falsehood." (tr. Bury, vol. II, p. 299)]

(6) Lewis, *Survey of Symbolic Logic*, p. 239: impossible that p is true and q false.

References

R. G. Bury, *Sextus Empiricus in four volumes* , Cambridge, Harvard University Press, 1933.

25. Kneale, William, and Kneale, Martha. 1962. *The Development of Logic* . Oxford: Clarendon Press.
Reprinted 1975 with corrections.

Chapter III: *The Megarians and the Stoics* , pp. 113-176.

"Throughout later antiquity two great schools of logic were distinguished, the Peripatetic which was derived from Aristotle, and the Stoic which was developed by Chrysippus from the teaching of the Megarians. It is tantalizing that tradition has preserved so little of the work of these latter philosophers; for what remains suggests that they were highly intelligent and deserving of better treatment than they have received from historians." (p. 113)

(...)

"The Megarians made three important contributions to the development of logic, the invention of a number of interesting paradoxes, the re-examination of the modal notions, and the initiation of an important debate on the nature of conditional statements." (p. 114)

(...)

"The most original theory is that of Diodorus Cronus. The only authority who gives us a complete account of it is Boethius, but what he says agrees with earlier incomplete accounts, in particular that of Cicero, and we may regard him as trustworthy. He tells us:

'Diodorus defines the possible as that which either is or will be (*quod aut erit aut erit*), the impossible as that which, being false, will not be true (*quod cum falsum sit, non erit verum*), the necessary as that which, being true, will not be false (*quod cum verum sit, non erit falsum*), and the nonnecessary as that which either is already or will be false (*aut jam est aut erit falsum*).'(2)" (p. 117)

(2) *Commentarii in Librum Aristotelis Peri `Ermeneias* Secunda Editio, ed. Meiser, p. 234-

26. Kneale, William Calvert, and Kneale, Martha. 1972. *Storia della logica* . Torino: Einaudi.

A cura e con una premessa di Amedeo G. Conte.

Capitolo III: *I megarici e gli stoici* , pp. 131-207.

"Mentre la teoria logica d'Aristotele sembra sia stata promossa soprattutto dalla riflessione sopra la

dimostrazione quale ricorre, ad esempio, in geometria, sembra invece che i megarici abbiano concentrato l'attenzione sulla dialettica di Zenone e su quelle dispute di ogni giorno onde nacque ciò che Platone ed Aristotele chiamano eristica. O almeno, è facile vedere come le caratteristiche delle argomentazioni dei megarici possano essere nate dall'aver essi concentrato l'attenzione su ciò, ed è attestata un'ascendenza eleatica. Euclide, fondatore della scuola megarica, sembra abbia studiato le opere di Parmenide,(1) e Diodoro Crono, uno dei membri più eminenti della scuola, sembra abbia costruito argomenti contra la possibilità del movimento.(2) Ed è significativo che la logica stoica fosse chiamata dialettica.(3)" (p. 131) (...)

"I megarici apportarono tre contributi importanti allo sviluppo della logica: l'invenzione di numerosi interessanti paradossi, il riesame delle nozioni modali, l'inizio d'un importante dibattito sulla natura degli asserti condizionali." (p. 138)

(1) Diogene Laerzio, II, 106.

(2) Sesto Empirico, *Adv. Math.* X, 85.

(3) Diogene Laerzio, VII, 43.

27. Kurzová, Helena. 2009. "What worried the crows in Callimachus' epigram." *Studia minora Facultatis Philosophicae Universitatis Brunensis. Series archaeologica et classica* no. 14:125-129.

Abstract: WThis paper deals with the Callimachus' epigram devoted to Diodorus Cronus and attesting his great popularity as dialectician. New interpretation of the second croak of crows is proposed, according to which the crows worry about their future: "what will be with us further?". Thus both croaks of the crows are connected with the most important part of Diodorus' teaching, i. e. his theory of modality expressed in the so called "Master Argument".

"The following fragment of Callimachus' epigram Fr. 393 Pfeiffer relates to Diodorus Cronus, the prominent representative of the Megarian School, whose main centre of interest was dialectics, the discipline corresponding to the contemporary logic and philosophy of language. The epigram was probably written during Diodorus' stay in Alexandria, which is supposed to have occurred during the 80s of the 3rd century B.C.:

αὐτοῖς ὁ Μῶμος

ἔγραφεν ἐν τοίχοις ὁ Κρόνος ἔστι σοφός'. [Blame (*Momus*) himself wrote on the walls "Cronus is wise]

ἦνίδε κοὶ κόρακες τεγέων ἔπι "κοῖα συνῆπται"

κρῶζουσιν καὶ "κῶς αὔθι γενησόμεθα'. [And here the crows are, squawking from the rooftops "what conclusions follow?" or "how will we become again?]

Surely, the epigram is one of the testimonies of Diodorus' popularity. The fragment 393 consists in fact of two fragments, which were connected together by Bentley. The first two lines are quoted by Diog. Laert. II, 10, 7. The sense and interpretation of this part is quite obvious. "Momus himself used to write on the walls 'Cronus is wise.'" *Kronos* is the nickname of Diodoros, inherited probably from his teacher Apollonius Cronus." (p. 125, English translation added)

(...)

"The third and fourth lines come from Sextus Empiricus' book for Grammarians (*Adversus Mathematicos* I, 309–312)." (p. 126)

(...)

"Sextus admits that even the grammarians are able to understand the first part of what the crows are croaking on the rooftops: 'κοῖα συνῆπται,' "what follows from what?" This is an allusion to the ability of the great dialectician to judge the validity of implication." (p. 126)

(...)

"I argue that the second croak of the worrying crows, like the first one, relates to the most prominent activity of Diodorus in dialectics. It is his view on the possible and the necessary which is in play here and which was formulated in his "Master Argument"." (p. 127)

References

Rudolfus Pfeiffer (ed.), *Callimachus. Volumen I. Fragmenta*, Oxford: Clarendon Press 1949.

28. Leith, David. 2014. "Causing doubts: Diodorus Cronus and Herophilus of Chalcedon on causality." *The Classical Quarterly* no. 64:592-608.

"My aim in this paper is to move this discussion on by filling out some of the historical and philosophical background to Herophilus' doubts about the existence of causes, and to re-evaluate the significance of these doubts in the context of his scientific project.

I shall try to show that the arguments which Galen records in connection with Herophilus' doubts were in fact propounded by the philosopher Diodorus Cronus, and that Herophilus must have encountered them through personal contact with Diodorus in Alexandria before the latter's death c. 284 B.C. Hence Herophilus' sceptical views on the existence of causes are very much tied to these particular arguments and to

the personality of Diodorus. This allows us to reassess Herophilus' attitude to causes to an extent, and I shall offer some observations on the nature of his reaction, maintaining that it need not be indicative of a more wide-ranging sceptical attitude. It is hoped that this analysis will help first to locate Herophilus' medicine more firmly within the context of early Alexandrian intellectual currents, and secondly to expand our knowledge of Diodorus' dialectical challenges and their influence in particular upon contemporary science." (p. 593)

29. López-Astorga, Miguel. 2015. "Diodorus Cronus and Philo of Megara: Two Accounts of the Conditional." *Rupkatha*.

Journal On Interdisciplinary Studies in Humanities no. 7:9-16.

Abstract: "Diodorus Cronus and Philo of Megara presented criteria for identifying true conditionals. Diodorus' criterion has been said to be a version of that of Philo requiring that the conditional is always true.

However, in this paper, based on the mental models theory and its analysis of possibilities, I try to show that those two interpretations are very different and that they do not refer to the same combinations of

possibilities. In my view, Philo's account can be linked to the material interpretation of the conditional.

Nevertheless, Diodorus' explanation can be related to that very interpretation and, in addition, to three different combinations of possibilities, none of them being that corresponding to the material interpretation."

30. ———. 2019. "The semantic method of extension and intension and the four criteria of the conditional described by Sextus Empiricus." *Revista de Filosofía* no. 44:253-261. Abstract: "In this paper an analysis is conducted of the debate about the most suitable way to understand the conditional, which took place in the 4th century B.C. This is done using the extension and intension method provided by Rudolf Carnap to study the meaning of expressions. The results seem to show that, according to Sextus Empiricus, although the debate was about four different criteria to understand the conditional, three of those criteria actually appear to be the same and have a very clear common logical form under Carnap's framework."

31. Marko, Vladimir. 1995. "Callimachus' puzzle about Diodorus." *Organon F* no. 2:342-367.

Abstract: "The author tends to emphasize that there are almost the three reasons to analyse Callimachus' epigram about Diodorus (Pfeiffer fr.393, 14): *First of all, the date of this epigram* shows us that it represents the earliest

information about Diodorus doctrine. *Second* , another support of its authenticity could be found in fact that this epigram *expressing part of the atmosphere* following, and also remaining after, discussing the Diodorian topics. *Third* , its *philosophical relevance* , usually minimised in classical literature, could be found in those facts that it could show the way out in many today dilemmas about his philosophical

claims and support some of our contemporary assumptions about its logical conception, as well as that of space, time, and meaning of statements. The author defends a position that it is necessary to develop *well-grounded* and *methodologically relevant base* covering the historical reconstruction and the interpretation of ancient logical theories."

"In fact, this is not a story about M.A. [Master Argument] Possibly, just partly. We would like to introduce one Callimachus' epigram that could have a reference to Diodorus' logical and temporal conception, and to form its adequate interpretation. It follows:(3)

(Even) Momos (himself) used to write on the walls: "Cronos is wise."

Look, even the ravens on the rooftops are craving: "What follows (from what)?"

and "How shall we come to be hereafter?" (p. 344)

(3) Döring [(1972): *Die Megariker Kommentierte Sammlung der Testimonien. Amsterdam*], frs. 96, 128; D.L., ii 111; S.E. *M* i 309, p. 672 Bekk.; Pfeiffer [(1949): Callimachus. Oxford]: fr. 393, 1-4, Epigrammatum fragmenta, i.

32. Marko, Vladimír. 2011. "Looking for the Lazy Argument Candidates (1)." *Organon F* no. 18:363-383.

Abstract: "The Lazy Argument, as it is preserved in historical testimonies, is not logically conclusive. In this form, it appears to have been proposed in favor of part-time fatalism (including past time fatalism). The

argument assumes that free will assumption is unacceptable from the standpoint of the logical fatalists but plausible for some of the nonuniversal or part-time fatalists. There are indications that the layout of argument is not genuine, but taken over from a Megarian source and later transformed. The genuine form of the argument seems to be given in different form and far closer to logical fatalism and whose purpose is not to defend laziness. If the historical argument has to lead to the logically satisfactory solution, some additional assumptions and its additional tuning are needed."

[The oldest form of the Lazy Argument]: "These and others like them are the absurdities that follow if it is necessary for every affirmation and negation (either about universals spoken of universally or about particulars) that one of the opposites be true and the other false, and that nothing of what happens is as chance has it, but everything is and happens of necessity. So there would be no need to deliberate or to take trouble, thinking that if we do this, this will happen, but if we do not, it will not." (Aristotle, *de interpretatione* 18b26-33)"

[See also Cicero, *De fato*, XII, 28-29]

33. Mates, Benson. 1949. "Diodorean Implication." *The Philosophical Review* no. 58:234-242.

"Diodorus Cronus a Megarian logician greatly renowned in antiquity, is known to students of the history of logic chiefly for his part in the ancient controversy over the truth-conditions for hypothetical propositions." (p. 234)
(...)

"The present paper(5) attempts to give as clear and correct an account as possible of Diodorean implication(6) and of its relation to the other types of implication which were advocated by the several participants in the ancient controversy. Perhaps this account will not be uninteresting to students of modern logic, for Diodorus managed to define a plausible sense of "implication" that is

stronger than Material implication and weaker than Strict implication—a feat requiring no little skill."

(5) This paper is based on a portion of the author's doctoral dissertation, *The Logic of the Old Stoa* (1948, typescript, University of California Library). [published as *Stoic Logic*, Berkeley: University of California Press, 1953 (second revised edition 1961).]

(6) The term "Diodoran" was coined by C. S. Peirce; I prefer "Diodorean."

34. ———. 1961. *Stoic Logic*. Berkeley: University of California Press.

Second revised edition; first edition 1953.

"In this section we shall investigate what remains of the ancient treatment of the problem just mentioned [*the problem of implication*]. We know that the controversy was begun by Diodorus and Philo in the Megarian school and was taken up and enlarged by the Stoics. Most of the latter seem to have adopted the position of Philo,(4) although at least three other views were represented.

In modern times, C. S. Peirce was the first competent logician to comment on the ancient dispute.(5) He was struck by the fact that Philo's notion of implication was exactly the same as the modern so-called "material implication," which also has provoked much debate. Other authors have mentioned this same point of similarity,(6) and today it is probably the best-known fact about Stoic logic." (p. 43)

(4) *Hyp. Pyrrh.* 11,104; *Adv. Math.* VIII, 245.

(5) *Collected Papers*, vol. 2, p. 199; vol. 3, pp. 279-280.

(6) See, for example, the articles by Hurst, Chisholm, Lukasiewicz (" *Zur Geschichte der Aussagenlogik* "), Bochenski (*De Consequentia*, p. 3), and Reymond. See also De Lacy, *Philodemus: On Methods of Inference*, p. 159, note 8; Stock, *Stoicism*, pp. 22-23;

A. Tarski, *Introduction to Logic* (New York, Oxford, 1941), p. 27, note 3; W. V. Quine, *Mathematical Logic* (New York,

Norton, 1940), p. 18.

References

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Stock, St. George. *Stoicism* . London, Constable, 1908.

35. Mondini, Ugo Carlo Luigi. 2017. "La preoccupazione filosofica dei corvi nel fr. 393 Pf. di Callimaco." *Acme. Annali della Facoltà di studi Umanistici dell'Università degli Studi di Milano* no. 1:61-72.

Abstract: "Riguardo alle due domande poste dai corvi nel fr. 393 Pf. di Callimaco la critica moderna ha proposto varie interpretazioni, suscitate in parte dal commento di Sesto Empirico al passo. Corroborando la tesi già sostenuta da H. Kurzová [*], questo contributo cerca di spiegare le due domande come allusione al più conosciuto argomento dialettico di Diodoro Crono, il κυριεύων λόγος. Inoltre si tenterà di capire la fonte da cui Sesto ha tratto il distico, per valutare il suo strano commento."

[*] *What worried the crows in Callimachus' epigram* (2009).

Callimaco fr. 393 Pfeiffer:

αὐτοῖς ὁ Μῶμος

ἔγραφεν ἐν τοίχοις ὁ Κρόνος ἐστὶ σοφός'.

ἡνίδε κοὶ κόρακες τεγέων ἐπὶ κοῖα συνῆπται

κρῶζουσιν καὶ ἥκῳς αὔθι/αὔθις1 γενησόμεθα'.

“Momo stesso scriveva sui muri: «Crono è sapiente»”

(Diogene Laerzio, libro II, 111, tr. Reale, p. 261)

“Senti come anche dai tetti i corvi gracchiano: « Quante Cose si sono congiunte? » e « Come di nuovo vivremo? »”

(tr. Russo, p. 102)

Sesto Empirico, (*Adv. math.* 1,309-312 = test. 128 Döring = SSR ii F 18)

36. O'Toole, Robert R., and Jennings, Raymond E. 2004. "The Megarians and the Stoics." In *Handbook of the History of Logic, Vol. 1: Greek, Indian and Arabic Logic*, edited by Gabbay, Dov and Woods, John, 397-522. Amsterdam: Elsevier.

"The Megarian School was founded by Euclides, a pupil of Socrates (DL 2.47) and a native of Megara on the Isthmus (DL 2.106). He was succeeded as head of the school first by Ichthyas and later by Stilpo, also a native of Megara in Greece (DL 2.113). Evidently, since Diodorus can trace his philosophical lineage back to Euclides through Apollonius Cronus and Eubulides (DL 2.110-11), it has been generally thought that he also was a member of the Megarian school; hence, the Megarian connection with respect to the source of Zeno's logical doctrines would seem assured. Sedley, however, has presented what seems to us a convincing argument to the effect that Diodorus belonged rather to a rival school which was called the Dialectical School (Sedley, [1977, pp. 74-75]; cf. Sandbach, [1985, p. 18]).

At 2.106 Diogenes reports that the followers of Euclides were called Megarians after his birthplace. Later they were called Eristics, and later still, Dialecticians.

Sedley argues for the possibility that these remarks should not be interpreted, as they usually are, to mean that this was one and the same school known at different times by different names, but rather that these names designated splinter groups whose *raisons d'être* were different enough from that of the Megarian School to warrant viewing them as distinct schools [Sedley, 1977, p. 75]. According to Sedley, several sources inform us that the Dialecticians recognised Clinomachus of Thurii, a pupil of Euclides, as the founder of their school [Sedley, 1977, p. 76].

However, since the name 'Dialectician' was first coined for the school by Dionysius of Chalcedon (DL 2.106), an "approximate" contemporary of Diodorus (Sedley [1977, p. 76]), it seems more likely not that Clinomachus actually founded the school, but rather that he was recognised by its members as the source of the ideas foremost in their teachings [Sedley, 1977, p. 76]." (p. 406)

References DL = Diogenes Laërtius, *Lives of Eminent Philosophers* [Sandbach, 1985] F.H. Sandbach. *Aristotle and the stoics* . In Supplementary volume 10 of The Cambridge Philological Society. Cambridge UP, 1985. [Sedley, 1977] David Sedley. *Diodorus Cronus and hellenistic philosophy* . In Proceedings of the Cambridge Philological Society, volume 23, pages 74-120, 1977.

37. Pelucchi, Marco. 2016. "Callimaco, il Fedone e la scuola filosofica cirenaica nell'epigramma per Cleombroto (Call. 23 Wil.)." *Acme. Annali della Facoltà di studi Umanistici dell'Università degli Studi di Milano* no. 69:93-109.
Abstract: "Muovendo dall'epigramma per Cleombroto (*AP* 7,471 = 23 *Wil.* = 53 G.-P.), l'articolo si propone di rivalutare la posizione di Callimaco rispetto a un autentico interesse per la filosofia. Contro le interpretazioni più recenti, che hanno letto l'epigramma alla luce di una polemica innanzitutto "metacomunicativa", si cerca di mostrare come l'intento ironico dei versi possa essere compreso pienamente solo ammettendo una simpatia di Callimaco per

la scuola cirenaica. L'epigramma sembra dunque presupporre una critica alle tesi sostenute nel *Fedone*, in effetti incompatibili con le dottrine dei Cirenaici, che non dovevano condividere la lettura platonica dell'insegnamento di Socrate, almeno per come questa emerge nel dialogo. È così possibile riconoscere la *pointe* dell'epigramma nell'intenzione di mostrare le tensioni interne al *Fedone*, specificamente in merito alla questione del suicidio."

38. Prior, Arthur Norman. 1955. "Diodoran Modalities." *The Philosophical Quarterly* no. 5:205-213.

"The Megaric logician Diodorus defined the possible as that which either is or at some time will be true, the impossible as that which neither is nor ever will be true, and the necessary as that which both is and always will be true. These definitions assume-as ancient and medieval logic generally assumes-that the same proposition may be true at one time and false at another; Dr. Benson Mates has accordingly remarked, in his recent study of Stoic logic, that Diodoran 'propositions' are not 'propositions' in the modern sense, but something more like propositional functions, and he represents them as such in his symbolic treatment of the Diodoran definitions of the modal operators.(1) I propose here to do something a little different, namely to employ the ordinary propositional variables 'p', 'q', 'r', etc., for 'propositions' in the Diodoran sense, and to use certain operators which take such propositions as arguments, and which form functions taking such propositions as values." (p. 205)

(1) B. Mates, *Stoic Logic*, University of California Press, 1953, pp. 36-37. It has been pointed out to me by Mr. W. W. Sawyer that the Diodoran view that whatever is possible either is or will be true is very like the ergodic hypothesis in the kinetic theory of gases.

39. ——. 1958. "Diodorus and Modal Logic: A Correction." *The Philosophical Quarterly* no. 8:226-230.

"In the course of a sketch, published in the *Philosophical Quarterly* for July 1955, of a modal system based on the Diodorean definition of the possible as 'what is or will be true ', I showed that this system contains all the laws of the Lewis system S4. Whether it contains further modal theses beside those of S4, I went on to say in the same paper, " is a question which remains to be investigated "; it being clear, nevertheless, that the Diodorean system " does not contain the characteristic theses of the main modal system known to be stronger than S4, namely S5 ". In my *Time and Modality* this question is again referred to, but unhappily with less caution. The Diodorean definition being translated into a 'matrix ', I state on p. 23 that this matrix is ' characteristic ' for S4, i.e. verifies all those and only those formulae which are theorems of S4. And this is a mistake. I should like, therefore, to set out such facts as are now clear to me about the actual relation of the Diodorean modal system, which I shall call D, to S4." (p. 226)

40. ———. 1967. *Past, Present, and Future* . Oxford: Clarendon Press.

Chapter II: *The search for the Diodorean modal system* , pp. 20-31.

41. Rüstow, Alexander. 1910. *Der Lügner. Theorie, Geschichte und Auflösung* . Leipzig: Teubner.

Reprint: New York, Garland, 1987.

42. Sedley, David. 1977. "Diodorus Cronus and Hellenistic Philosophy." *Proceedings of the Cambridge Philological Society* no. 23:74-120.

Reprinted in: Terence Irwin (ed.), *Hellenistic Philosophy* (Classical Philosophy Collected Papers vol. 8), New York: Routledge, 1995, pp. 270-315.

"During the last four decades historians of ancient logic have become increasingly aware of the importance of Diodorus Cronus and his pupil Philo as pioneers of the propositional logic which came to flourish in the Stoa. Their

direct influence has so far been recognised in two main areas of Hellenistic controversy -- the validity-criteria for conditional propositions, and the definition of the modal terms 'possible' and 'necessary'. But some broader questions have not been satisfactorily answered. What were Diodorus' own philosophical allegiances and antecedents? What is his place in the history of Greek philosophy? How far-reaching was his influence on the post-Aristotelian philosophers? There was little chance of tackling these questions confidently until 1972, when Klaus Döring published for the first time the collected fragments of Diodorus, in his important volume *Die Megariker*. Meagre though they are, these fragments confirm my suspicion that Diodorus' philosophical background has not been fully explored, and also that his influence on the three emerging Hellenistic schools -- the Stoics, Epicureans, and Sceptics -- was far wider than has hitherto been recognised. There has been much discussion as to which earlier philosophers played the most decisive part in shaping Hellenistic philosophy, and the respective claims of the Platonists and of Aristotle have never lacked expert advocacy. In all this, the claims of so obscure a figure as Diodorus have been underrated." (p. 74)

43. Sorabji, Richard. 1983. *Time, Creation and the Continuum: Theories in Antiquity and the Early Middle Ages*. London: Duckworth.

Chapter 2: *Solutions from Diodorus to Augustine*, pp. 17-32.

"Diodorus delighted in paradoxes, many of which he took from Aristotle.

Several will be discussed in later chapters, and it will be seen that he sometimes used atomist theory in order to deal with them. It is not certain whether he tried to solve Aristotle's paradoxes of time. But there is a certain likelihood that he did, since many of the paradoxes he is known to have tackled are related to Aristotle's. For example, there is a connexion between Aristotle's paradox of

the ceasing instant and Diodorus' question when a wall ceases to exist - while it is intact, or after it has disintegrated.(2) I shall only claim, however, that Diodorus' atomism gave him the *materials* for solving the paradoxes of time. And in this chapter I shall discuss his atomism only so far as is necessary for showing that it supplied these materials.

Diodorus ideas on atomism are recorded by Sextus Empiricus. An atom, in Greek thought, differs from a geometrical point in that, although it is indivisible is supposed to have a positive size. (We shall see eventually that some Islamic and fourteenth-century Western thought differed in this regard)." (p. 17)

(2) ap. Sextum, *M* 10.347-9.

44. Temple, George. 1977. "Inference without Axiom of Paradoxes." In *Logic Colloquium 76*, edited by Gandy, Rob Oliver and Hyland, John Martin Elliott, 221-233. Amsterdam: North-Holland.

"The study of formal, propositional logic has known three great periods - the Greek, the Mediaeval Scholastic and the Modern, which are, respectively, commonly associated with the names of their reputed

founders: Philo of Megara, Abelard and Frege.

In each period a number of different theories of implication have been advanced of which the most important are

(1) the theory of material implication;

(2) the theory of incompatibility, and

(3) the theory of inclusion.

All three of these theories are attributed to the logicians of the Greek school of Megara in the treatise by Sextus Empiricus ("Outlines of Pyrrhonism", Book ii, 110-112, ca. A.D. 200). Philo is credited with the

theory of material implication, according to which, a proposition p always implies a proposition q unless p is true and q is false. An unnamed Stoic, perhaps Chrysippus, is said to have introduced the notion that implies q if p is

incompatible with the negation of q . And some who have not been identified are said to define the implication $p \rightarrow q$ to mean that q is virtually included in p ." (p. 221)
(...)

"The purpose of this note is to show that a careful analysis of these three theories shows that they are not merely mutually compatible, but essentially the same, the superficial differences exhibiting only a shift of emphasis.

Philonian Implication We do not possess any of the original works of the Megarian logicians and therefore do not know for certain how they formulated the theory of material implication, but it seems indubitable that they initiated the study of unanalyzed propositions, which were classified as either "True" or "False" accordingly as they corresponded or did not correspond with reality.

This unique scheme of valuation was fatal to their theory of inference.

Philo of Megara (ca. 300 B.C.) recognised three varieties of valid inference, *viz* . from a true antecedent to a true consequent, from a false antecedent to a false consequent, and from a false antecedent to a true consequent. This is undoubtedly a complete classification, but it is difficult to believe that it was accepted as a definition of inference.

I cannot believe that any Greek politician, barrister or tradesman can ever have sought to persuade his adversary, his judge or his client that a false proposition implies any proposition (true or false), and that a true proposition is implied by any proposition (true or false).

In fact what is called "Philonian" implication is completely ineffective as a definition, and the Megarian logicians used in its place various schemes of inference. Which we should undoubtedly recognise today as completely satisfactory and sometimes of surprising subtlety.

They also used the unique valuation of propositions as true or false to characterise disjunction and conjunction, but

there is no evidence that they were under the illusion that they had provided formal definitions of these connectives." (p. 222)

45. Uckelman, Sara, and Uckelman, Joel. 2007. "Modal and temporal logics for abstract space–time structures." *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics* no. 38:673-681. Abstract: "In the 4th century BC, the Greek philosopher Diodoros Chronos gave a temporal definition of necessity. Because it connects modality and temporality, this definition is of interest to philosophers working within branching time or branching spacetime models. This definition of necessity can be formalized and treated within a logical framework. We give a survey of the several known modal and temporal logics of abstract space-time structures based on the real numbers and the integers, considering three different accessibility relations between spatio-temporal points."
46. Verde, Francesco. 2013. *Elachista. La dottrina dei minimi nell'Epicureismo*. Leuven: Leuven University Press. "The three chapters of this work provide a philological analysis of the primary sources (Epicurus, *Epistle to Herodotus*, 56-59 / Lucretius, *De rerum natura* I 599-634; II 481-499) concerning the theory of minima (Ch. 1); an analysis of the likely historical background to this theory (Xenocrates, Aristotle and Diodorus Cronus – Ch. 2); and a study of the development of this doctrine within the Garden, based on an examination of the question whether it is legitimate to speak of an "Epicurean geometry" (Ch. 3). The research thus seeks to provide a broad, detailed and comprehensive overview of the Epicurean theory of minima." (English summaries, p. 329)
"Al di là del dibattito sulla sua appartenenza filosofica, a Diodoro Crono vengono attribuite alcune argomentazioni nella forma di veri e propri "paradossi" concernenti *stricto sensu* non tanto l'esistenza del movimento (tema specifico,

invece, dei paradossi di Zenone), quanto la sua “attualità”. La fonte privilegiata per la ricostruzione di questi argomenti è il II libro del *Contro i fisici* di Sesto Empirico (*M X* 85-118)⁴⁴¹. La comprensione di due di tali argomentazioni si fonda necessariamente su una dottrina che alcune fonti attribuiscono a Diodoro, ossia l’esistenza di “enti” minimi e indivisibili che, in quanto principi, costituirebbero la materia, lo spazio e (forse) il tempo. La questione se Diodoro abbia teorizzato questi minimi come una propria dottrina oppure solo a fini dialettici (considerata anche la sua affiliazione filosofica, dialettica o megarica che sia) è stata al centro del dibattito moderno⁽⁴⁴²⁾. La maggior parte della critica ha ritenuto che l’ammissione di minimi privi di parti sia essenzialmente a scopo dialettico, disserendi causa, dunque: Diodoro avrebbe concesso l’esistenza di minimi per confutare dottrine (fisiche) avversarie che evidentemente si basavano su quell’attualità del movimento che le argomentazioni diodoree andavano, per l’appunto, a negare." (p. 214)

(442) Per un’agile ricostruzione dei principali contributi a tale dibattito, cfr. Montoneri 1984, pp. 126-8; si consulti anche Döring 1998, pp. 224-5.

Riferimenti

K. Döring, *Sokrates, die Sokratiker und die von ihnen begründeten Traditionen* , in H. Flashar (Hrsg.), *Grundriss der Geschichte der Philosophie* , Begründet von F.

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L. Montoneri, *I Megarici: Studio storico-critico e traduzione delle testimonianze antiche* , Catania 1984.

47. ———. 2015. "Diodorus Cronus on Perceptible Minima." In *From the Socratics to the Socratic Schools: Classical Ethics, Metaphysics and Epistemology* , edited by Zilioli, Ugo, 134-148. New York: Routledge.

"The main textual evidence illustrating Diodorus' interest in perceptible minima is constituted by two passages from Alexander of Aphrodisias' commentary on Aristotle's *On Sense and Sensibilia* ." (p. 134)

"Although they have not, to my knowledge, been the subject of any specific scholarly treatment, Diodorus' perceptible minima have been variously interpreted. As Alan Towey(19) suggests, the range of interpretations may usefully be divided into two. On the one hand, some interpreters (Mau, Denyer, Sedley) have thought of perceptible minima as an idea used by Diodorus in order to "draw an analogy between perceiving something and conceiving of it." On this view, Diodorus will have accepted that something that can be perceived as lacking parts, although actually divisible, cannot be conceived of as having parts. On the alternative view (Sorabji's), Diodorus used the idea in connection with the problem "that a smallest visible size and a largest invisible size differ from each other by an atomic magnitude."(20)" (p. 140)

[I: Alexander of Aphrodisias, *On Aristotle's De sensu* 122 16–23 Wendland (= SSR II F 9, part); II: n Aristotle's *De sensu* 172 28–173 10 Wendland (= SSR II F 9). English translation: Towey, A. (ed.) (2000), *Alexander of Aphrodisias: On Aristotle's "On Sense Perception,"* Ithaca/New York, Cornell University Press.]

(19) Towey (2000), *Alexander of Aphrodisias: On Aristotle's "On Sense Perception,"* Ithaca/New York, Cornell University Press. 188 n. 523.

(20) Sorabji (1983), *Time, Creation and the Continuum: Theories in Antiquity and the Early Middle Ages* , Ithaca/New York, Cornell University Press, 345–348.

48. Weidemann, Hermann. 1993. "Zeit und Wahrheit bei Diodor." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer* , edited by Döring, Klaus and Ebert, Theodor, 319-329. Stuttgart: Franz Steiner.

49. ———. 2000. "Diodor. Logik und Common Sense." In *Philosophen des Altertums, Band. I: Von der Frühzeit bis zur Klassik*, edited by Erler, Michael and Graeser, Andreas, 182-190. Darmstadt: Primus Verlag.
50. ———. 2008. "Aristotle, the Megarics, and Diodorus Cronus on the Notion of Possibility." *American Philosophical Quarterly* no. 45:131-148.

"One of the most remarkable traits of the fragmentary picture which our sources allow us to draw of the philosophy of the Megarics is the conception of possibility ascribed to them by Aristotle. The well-known passage in Aristotle's *Metaphysics* in which this ascription is made, namely the beginning of the third chapter of book IX (Θ), is, if we leave aside the commentary on this passage which has falsely been attributed to Alexander of Aphrodisias, our only evidence for the Megaric doctrine in question. Aristotle does not content himself with giving an account of this doctrine, but subjects it to a severe criticism, which he underpins by an exact definition of what, in his opinion, it is for something to have a certain possibility. This definition is fundamental not only to his criticism of the Megaric position, but also to his rejection of a view which is opposed to it in the extreme. He criticizes this extreme anti-Megaric conception of possibility in the first half of chapter 4 of *Met. Θ*. In my essay I shall first concentrate on this chapter and the chapter preceding it, in order to show that by means of his definition of the notion of possibility Aristotle is able to strike a happy medium between the Megaric position which he attacks in chapter 3 and the extreme anti-Megaric position which the target of his criticism in chapter 4. Then I shall try to show that even in chapter 5, in which at first sight he seems to adopt the view of his Megaric opponents himself, Aristotle firmly sticks to his own conception of possibility. Since this conception is seriously challenged by the famous Master Argument of Diodorus Cronus, who modified the Megaric conception of possibility, I shall

finally try to show that this argument is not damaging to Aristotle's position at all, because it fails to be sound." (p. 131)

51. White, Michael J. 1979. "An S5 Diodorean Modal System." *Logique et Analyse* no. 88:477-487.

"As is now well known, the alethic modalities were normally conceived in temporal terms by the ancients (1). In particular the Megarian logician Diodorus Cronos defined a possible proposition as one that either is now or will be true, an impossible proposition as one that is now false and will always be false, a necessary proposition as one that is now true and will always be true, and a nonnecessary proposition as one that either is now false or will be false (2).

The research — both historical and logical — of Arthur Prior has proven especially fruitful in the contemporary analytical study of «Diodorean modalities.»" (p. 477)

52. ———. 1985. *Agency and Integrality: Philosophical Themes in the Ancient Discussions of Determinism and Responsibility*. Dordrecht: Reidel.

Chapter Three: *Diodorean Fatalism*, pp. 69-96.

"The basic elements of Diodorus' view are not difficult to ascertain. He retains a "positivistic" or "extensional" conception of the modalities but modifies slightly the conception attributed to the "Megarians" by Aristotle. According to Aristotle's account, the Megarian doctrine apparently is that "what is possible," from the present temporal perspective, is equivalent to "what is *now* actually the case." There is, however, what I believe is a natural tendency to interpret "what is, at present, possible" in such a way that "present" has "widest scope": and, as a consequence, we tend to apply the phrase "what is, at present, possible" not only to what might be happening at the *present moment*, but also to what might happen in the future relative to the present time. There is, in other words, a temporally *prospective* aspect to the modality of possibility, or at least to some ordinary conceptions of

possibility. (27) It is this temporal prospectivity that lends credibility to the premise Aristotle invokes against the Megarians in *Metaphysics* 9.3. Note that without the implicit assumption of the temporal prospectivity of possibility, the fact that the occurrence of an event is impossible now, at the present moment, is apparently irrelevant to the question of whether that event shall occur or fail to occur at some *future time* ." (p. 73)

(2/) Hintikka makes essentially the same point in his discussion of the passage (*Time and Necessity* . pp. 197-199). However, far from being a "rather peculiar concept of possibility" (ibid. p. 197), the concept being exploited in the passage by Aristotle strikes me as a very commonly encountered concept."

53. ——. 1986. "What Worried the Crows?" *The Classical Quarterly* no. 36:534-537.

"A well-known epigram by Callimachus on the philosopher Diodorus Cronus (fr. 393 Pfeiffer) reads as follows:

αὐτοῖς ὁ Μῶμος

ἔγραφεν ἐν τοίχοις ὁ Κρόνος ἐστὶ σοφός'. [Blame (*Momus*) himself wrote on the walls "Cronus is wise]

ἡνίδε κοὶ κόρακες τεγέων ἐπὶ "κοῖα συνῆπται"

κρῶζουσιν καὶ "κῶς αὔθι γενησόμεθα". [And here the crows are, squawking from the rooftops "what conclusions follow?" or "how will we become again?]

The question of the third line, while perhaps recondite from a contemporary perspective, was clear in antiquity. The crows are asking 'What follows (from what)?', in allusion to the Hellenistic disputes concerning the truth conditions of conditional propositions (συνημμένα), disputes in which the views of Diodorus figured prominently.(1)

I agree with Sedley that the question of the last line is 'much more problematic'.(2)

The common interpretation has been to read the αὔθι as a form of αὔθις and to interpret it temporally. The result, in

Pfeiffer's estimation, is 'quomodo posthac erimus?'.(3)" (p. 534)

(...)

"The crows' how-question is particularly apposite, then. Because of Diodorus' doctrine of temporal and spatial minima, the 'natural' answer cannot be given to their question how they will come to be at that very place they will later occupy. That is, Diodorus cannot admit that the crows get from one place to an adjacent minimal place by means of a continuous process or κίνησις moving (κινεῖσθαι) that results

in the crows' gradually occupying less and less of the first place while occupying more and more of an adjacent minimal place. Rather, the crows simply are at rest in the first place during one time atom and, during the next time atom, they find themselves at rest at the adjacent minimal place. The crows' question, natural though it may be, is a question that Diodorus cannot answer." (p. 537)

(1) Sextus Empiricus, *PH* 2.110-12 and the discussion in B. Mates, *Stoic Logic* (Berkeley and Los Angeles, 1961), pp. 45-7.

(2) Sedley, 'Diodorus Cronus and Hellenistic Philosophy', *Proceedings of the Cambridge Philological Society* 20 (1977), 108 n. 35.

(3) Pfeiffer, *Callimachus* (Oxford, 1949), i.35.

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 "I shall consider two Diodorean models: what I call the **D**-model, constructed on the set of non-negative reals, and the D-model - in effect the usual one - on that of positive integers. I show that these characterise S4.3 and D, respectively. All the Diodorean models verify S4.3. It is easy to adapt the completeness proof for S4.3 given here to Diodorean models on the non-negative rationals and various other linearly-ordered sets. (The proof depends, in fact, on the linearly-ordered set having a suitable sub-set of ordinal ω_2 .) There are other Diodorean systems, but they do not seem to be of any interest." (p. 59)
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Abstract: "*Diodorean modalities* are logical notions that specify, in a precise way, how sentences may be true with respect to time: a sentence is diodoreanly necessary at a given instant iff it is true since that instant on. Arthur Prior has treated them as sentential operators and built up a logic for such modalities (DIOD) conjecturing that the frame for such a logic (the "diodorean frame") was the frame for S4. The Conjecture was soon proved false, through a number of counterexamples that played a role in the research on modal logics between S4 and S5. The present paper aims at showing that (i) the search for the diodorean frame benefited from such a research, and that (ii) there has been a mutual interaction between the search of the diodorean frame and some characterisation results. The paper is divided into five parts. In section 1, I will introduce diodorean modalities, while in Section 2 I will be focusing on Prior's reconstruction of the Master Argument and his characterisation of DIOD. In section 3, I present a conjecture Prior advanced about the characterisation of DIOD and some counterexamples to it. The notions of "frame" and "frame for" will be also introduced. In section 4 I summarise the connections between the search of the diodorean frame and some researches in modal logic. Section 5 presents a short conclusion.

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context, and so halfway between ancient logic and metaphysics. The second section introduces a logical analysis of the Master Argument against the backdrop of the Jarmużek-Pietruszczak semantics for the tense logic $K_{t4}P$; but the main aim of the section is to deal with one of the most fascinating attempts to peruse the Master Argument, i.e. A. Prior's reconstruction. Prior stays true to the Diodorean philosophical stance even if he uses modern logical tools. The significance of the work by Prior marks the beginning of tense logic. The third section expounds an argument by Øhrstrøm-Hasle. Danish logicians do not consider additional premises for the Master Argument. They give, in primis, a sentential example for the third premise, proving its inconsistency with the first two. The deterministic conclusion is the implicit result of this stratagem. Finally, in the fourth section, we compare the strategies by Prior and Øhrstrøm-Hasle."

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23. Corpina, Fabio, and Øhrstrøm, Peter. 2017. "The Diodorean approach to time and modality from a historical and a philosophical perspective." In *Logic and Philosophy of Time: Themes from Prior, Volume 1*, edited by Hasle, Per, Blackburn, Patrick Rowan and Øhrstrøm, Peter, 83-101. Aalborg: Aalborg Universitetsforlag.

Abstract: "Diodorus Cronus (ca. 340–280 B.C.) was an important philosopher and logician of the Megaric School. His principal contribution consists in a strong, logically oriented, characterisation of metaphysics, focused on the temporal aspects of important logical notions, in particular the understanding of conditionals and modality.

Furthermore, he is well known for his so-called Master

Argument which was designed to demonstrate that if something is possible then either it is the case already or it will be the case later. In this way Diodorus suggested a close connection between time and modality. According to Diodorus time can be seen as a series of temporal atoms. At any such atomic moment a proposition may be true or false. Since we do not have the details of Diodorus' original argument, several scholars have tried to reconstruct the Master Argument as it might have been. In this paper, we consider two attempted reconstructions of the argument: one based on a certain interpretation of Diodorus' notion of implication, and one suggested by A.N. Prior and based on a tense-logical approach to time and reasoning. We argue that both reconstructions are possible from a historical point of view, but that the latter is more interesting than the former if the argument should be conceived as an argument in favour of determinism."

24. de los Ríos Gutiérrez, Iván. 2018. "Kyrieuon Logos. Diodoro Crono y el problema del determinismo a la luz de *Metaphysica* IX, 9, 3." *Trans/Form/Ação* no. 41:9-30. Resumen: "El presente artículo tiene por objetivo la reconstrucción del argumento dominador (*kyrieuon logos*) atribuido a Diodoro Crono y su revisión filosófica a la luz de la crítica aristotélica al actualismo extremo de la Escuela de Mégara en *Metafísica* IX, 3. Desde esta perspectiva, el trabajo aspira a situar el proyecto teórico de Diodoro en el marco de su disputa filosófica con la metafísica aristotélica y su concepto de δύνανμις, con el fin de traducir esta querella dialéctica en lo que, a nuestro juicio, constituye una disputa teórica de importantes consecuencias prácticas: la disyunción excluyente entre el azar y el destino como paradigmas de interpretación conceptual y de acción moral."
25. Denyer, Nicholas. 1981. "Time and Modality in Diodorus Cronus." *Theoria* no. 47:31-53.

26. ———. 1996. "Gaskin on the Master Argument." *Archiv für Geschichte der Philosophie* no. 78:166-180.
"Richard Gaskin's *The Sea Battle and the Master Argument* (1995) falls into two roughly equal sections each corresponding to one half of its title. The first explores Aristotle's treatment in *De Interpretatione* 9 of his puzzle about tomorrow's sea-battle; the second puts some of these results to work in developing a novel account of the Master Argument of Diodorus Cronus. Moreover, throughout the book, Gaskin pays detailed attention to rival interpretations from the mass of commentary that has accumulated around these topics since ancient times, and that continues to accumulate ever faster in our own. On this aspect of Gaskin's book, I will have little more to say than that he discusses all the rival interpretations with a general good sense, and with a patience that I for one could not so long sustain. Moreover, I propose merely to summarise the salient points in Gaskin's own understanding of Aristotle. In the bulk of this critical notice, I will examine at much greater length what I myself take to be Gaskin's most interesting achievement: a reconstruction of the Master Argument that, whatever its faults, is both more plausible historically and more interesting philosophically than all but a handful of the umpteen reconstructions that are now on offer." (p. 166)
27. ———. 1999. "The Master Argument of Diodorus Cronus. A Near Miss." *Logical Analysis and History of Philosophy / Philosophiegeschichte und logische Analyse* no. 2:239-252.
Abstract: "Diodorus' Master Argument was intended to show that whatever is possible either is or will be true. The intended conclusion does not follow from the extant premisses of the Master Argument. The Near Miss argues however, from those premisses alone, that nothing can be more than momentarily an exception to the Master Argument's intended conclusion. Strong arguments support even the most contentious of those premisses ("every past

truth is necessary"). We therefore cannot easily ignore the Near Miss. Moreover, there are various supplementary premisses that would turn the Near Miss into an argument with the full force of the Master Argument itself. Each of Diodorus' ancient rivals, since they accepted such doctrines as eternal recurrence, temporal atomism, and the "extended" present, would grant him at least one of these supplementary premisses. So too would any modern who holds that time is not circular, has no beginning, and does not branch."

28. ———. 2009. "Diodorus Cronus: Modality, the Master Argument and Formalisation." *Humana Mente: Journal of Philosophical Studies* no. 8:33-46.
29. Diodorus Cronus, [pseudonym]. 1965. "Time, Truth and Ability." *Analysis* no. 25:137-141.
Pseudonym of Richard Taylor and Steven M. Cahn.
30. Fernández-García, Socorro. 2005. "Leibniz y el argumento dominante." *Anuario Filosófico* no. 38:255-267.
31. Ferre, Julien. 2015. "Logique modale temporelle: Arthur Prior, Jules Vuillemin et l'aporie de Diodore." *Les Études philosophiques* no. 154:581-609.
32. Gaskin, Richard. 1995. *The Sea Battle and the Master Argument. Aristotle and Diodorus Cronus on the Metaphysics of the Future*. Berlin: Walter de Gruyter.
33. ———. 1996. "Reconstructing the Master Argument: Response to Denyer." *Archiv für Geschichte der Philosophie* no. 78:181-191.
34. ———. 1999. "Tense Logic and the Master Argument." *Logical Analysis and History of Philosophy / Philosophiegeschichte und logische Analyse* no. 2:203-224.
Abstract: "Diodorus' Master Argument was intended to show that whatever is possible either is or will be true. The intended conclusion does not follow from the extant premisses of the Master Argument. The Near Miss argues however, from those premisses alone, that nothing can be more than momentarily an exception to the Master Argument's intended conclusion. Strong arguments support

even the most contentious of those premisses ("every past truth is necessary"). We therefore cannot easily ignore the Near Miss. Moreover, there are various supplementary premisses that would turn the Near Miss into an argument with the full force of the Master Argument itself. Each of Diodorus' ancient rivals, since they accepted such doctrines as eternal recurrence, temporal atomism, and the "extended" present, would grant him at least one of these supplementary premisses. So too would any modern who holds that time is not circular, has no beginning, and does not branch."

35. Giannantoni, Gabriele. 1981. "Il *kyrieuon logos* di Diodoro Crono." *Elenchos* no. 2:239-272.
36. Gómez Espíndola, Laura Liliana. 2012. "Disputa de Aristoteles y Diodoro Crono en torno a la necesidad logica." *Praxis Filosófica* no. 35:39-57.
37. Goodman, Lenn E. 1999. "The Diodorean Modalities and the Master Argument." In *From Puzzles to Principles? Essays on Aristotle's Dialectic*, edited by Sim, May, 15-37. Lanham: Lexington Books.

"My purpose in this chapter is to examine the modalities of Diodorus and the logic of his argument in their behalf, the so-called Master⁴ Argument." (p. 19)
(...)

"What Diodorus seems to me to be saying is that if there is a state of affairs that will never occur, then (for example) it was always true that it would never occur (and always true to say so, as in the version of the argument that Aristotle considers). So the event cannot occur without falsifying that truth or claim, thus, without making over the past, which Aristotle concedes is impossible. Diodorus seems to me to generalize this approach, by assuming that there is always some truth about the past that any falsehood about the future will contradict. The inference is that all falsehoods about the future are impossible and all truths about the future necessary.

We need not speculate that this line of argument was in fact taken by Diodorus, for we have the testimony of Cicero's *De Fato* to confirm our reconstruction. The core of the argument that Cicero links to the name of Diodorus is this: If p ('Fabius was born at the rising of the Dogstar') entails q ('Fabius will not die at sea'), then the entailment of q by p (a necessary proposition, since it deals with the past) renders q necessary as well, and it becomes impossible for Fabius to die at sea. (27)

The strength of the Diodorean position lay in its capacity to refute the conception of possibility put forward by Aristotle, and that by arguing from his own premises.(28) If real possibility is indeed an incoherent notion and there are no possibilities that are not at some time to be realized, then all truths become necessary and the time dimension itself is called into question. For necessity is timeless. Even though Diodorean necessity was achieved through quantification over time, it has the effect of bracketing or erasing time." (pp. 21-22)

(...)

"With the elimination of real possibility, modality as an independent category is effectively suppressed. A system of modality which does not allow for possibilities that may never be realized cannot distinguish possibility from actuality except in point of temporal placement. Modality as such becomes vacuous; and the distinction of, say, natural from logical necessity, otiose. The Aristotelian, then, and indeed anyone who would retain modal concepts in describing change, causality, or nature has an interest in refuting the Master Argument." (p.22)

27. See Cicero, *De Fato*, vi 12, vii 13; cf. Michael J. White's discussion in "Facets of Megarian Fatalism: Aristotelian Criticisms and the Stoic Doctrine of Eternal Recurrence," *Canadian Journal of Philosophy* 10 (1980): 203-4.

28. For the reliance of the Master Argument on Aristotelian premises, see, Peter Øhlstrom, "A New Reconstruction," 61 ;

and O. Becker, "Zur Rekonstruktion des 'Kyrieuon Logos' des Diodorus Kronos," in *Festschrift für Theodor Litt*, J. Derbolav and F. Nicolin, eds. (Düsseldorf, 1960).

38. Guerrey, Herbert. 1967. "Rescher's Master Argument." *The Journal of Philosophy* no. 64:310-312.

39. Gundersen, Lars. 1997. "The Master Argument and Branching Time." *Logic and Logical Philosophy* no. 5:49-60.

Abstract: "It is argued that reconstructions of the so-called 'Master Argument' of Diodorus Cronos to the effect that possibility should be understood as present or future truth, essentially relies on two axioms: i) that every true proposition concerning the past is necessary, and ii) that it follows necessarily from a proposition being true that it always has been the case that it would be true. It is furthermore argued that these two axioms are inconsistent in the sense that any tense/modal semantics which incorporates both collapses either modally (fails to distinguish between truth simpliciter and modalised truth) or temporally (fails to offer a plausible semantical account for propositions about the future). This finding is, furthermore, taken as indicator for the more general claim that there are principled difficulties involved in construing semantics for combined tense/modal logical systems."

40. Hafemann, Burkhard. 1999. "Indefinite Aussagen und das kontingent Zukünftige.

Akzidenzien allgemeiner Gegenstände und graduelle Wahrheit in Aristoteles'

De Interpretatione 7 und 9." *Philosophiegeschichte und logische Analyse / Logical Analysis and History of Philosophy* no. 2.

Abstract: "Die von Aristoteles in *De Int.* 7 eingeführte „indefinite Aussage“ verweist nach meiner Deutung auf ein Universale, welches anteilig an widersprüchlichen akzidentellen Prädikaten teilhat. Dem korrespondiert auf semantischer Ebene die graduelle Wahrheit beider

Widerspruchsglieder. In gleicher Weise ist für Aristoteles auch die Aussage, daß ein Individuum zu einem Zeitpunkt seiner kontingenten

Zukunft so-und-so bestimmt sein wird, nach *De Int.* 9 offenbar als graduell-wahr einzustufen. Das Einzelne kann hinsichtlich seiner kontingenten Zukunft nämlich noch nicht betrachtet werden, sofern es faktisch wäre, sondern nur, sofern es zeitübergreifend ein Universale exemplifiziert. In diesem Zusammenhang werden zugleich fundamentale Bezüge zwischen indefiniter Aussage einerseits und Aristotelischer Modallogik, Statistik und Wissenschaftstheorie andererseits deutlich."

41. Hartmann, Nicolai. 1993. "Le concept mégarien et aristotélien de possibilité. Contribution à l'histoire du problème ontologique de la modalité." *Laval Théologique et Philosophique* no. 49:131-146.

Traduit par Jean-Pierre Narbonne.

42. ———. 2017. "The Megarian and the Aristotelian Concept of Possibility: A Contribution to the History of the Ontological Problem of Modality." *Axiomathes*.

Translated by Frédéric Tremblay and Keith Peterson.

Abstract: "This is a translation of Nicolai Hartmann's article "Der Megarische und der Aristotelische Möglichkeitsbegriff: ein Beitrag zur Geschichte des ontologischen Modalitätsproblems," first published in 1937. In this article, Hartmann defends an interpretation of the Megarian conception of possibility, which found its clearest form in Diodorus Cronus' expression of it and according to which "only what is actual is possible" or "something is possible only if it is actual." Hartmann defends this interpretation against the then dominant Aristotelian conception of possibility, based on the opposition between *dynamis* and *energeia*, and according to which there is always an open multiplicity of simultaneous "possibilities," the outcome of which remains undetermined. Since, according to Hartmann, reality suffers no indetermination, the Megarian

conception of possibility is an account of *real possibility*, whereas the Aristotelian one is merely an account of *epistemic possibility* (Frédéric Tremblay)."

43. Hintikka, Jaakko. 1964. "Aristotle and the 'Master Argument' of Diodorus." *American Philosophical Quarterly* no. 1:101-114.
Revised reprint as Chapter IX in: J. Hintikka, *Time and Necessity. Studies in Aristotle's Theory of Modality*, New York: Oxford University Press, 1973, pp. 179-213.
44. Hintikka, Jaakko, Knuuttila, Simo, and Remes, Unto. 1977. "Aristotle on Modality and Determinism." *Acta Philosophica Fennica* no. 29.
In collaboration with Unto Remes and Simo Knuuttila.
45. Ide, Harry A. 1992. "Chrysippus's Response to Diodorus's Master Argument." *History and Philosophy* no. 13:133-148.
Abstract: "Chrysippus claims that some propositions perish. including some true conditionals whose consequent is impossible and antecedent is possible, to which he appeals against Diodorus's Master Argument. On the standard interpretation. perished propositions lack truth values, and these conditionals are true at the same time as their antecedents are possible and consequents impossible. But perished propositions are false. and Chrysippus's conditionals are true when their antecedent and consequent are possible, and false when their antecedent is possible and consequent impossible. The claim of the Master Argument that Chrysippus rejects, then, is stronger than usually supposed."
46. Jansen, Ludger. 2011. "The Master Argument of Diodorus Cronus." In *Just the Arguments: 100 of the Most Important Arguments in Western Philosophy*, edited by Bruce, Michael and Barbone, Steven, 73-75. Malden: Blackwell.
47. Jarmużek, Tomasz. 2009. "Master Argument vs. Sea-Fight Tomorrow." *Bulletin of the Section of Logic* no. 38:205-214.
Abstract: "This paper deals with the Aristotelian problem of Sea-fight tomorrow, but it is analyzed from a Diodorean

point of view. Precisely, we examine whether the lost argument of Diodor Cronus, called Master Argument, could be conducted within a frame of future open time. Since we do not know the argument itself, we follow the known reconstructions of Master Argument. Each of them requires special logical assumptions, but also semantic constraints concerning a frame of time. The last detail interests us the most. Showing shortly, step by step, all constraints, we come to the conclusion that the strictly treated reconstructions of Master Argument must prefer a linear model of future."

48. ———. 2018. *On the Sea Battle Tomorrow That May Not Happen*. Berlin: Peter Lang.
A Logical and Philosophical Analysis of the Master Argument.
49. Jarmużek, Tomasz, and Pietruszczak, Andrzej. 2009. "The Tense Logic for Master Argument in Prior's Reconstruction." *Studia Logica* no. 92:85-108.
50. Kutschera, Franz von. 1986. "Zwei Modallogische Argumente für den Determinismus: Aristoteles und Diodor." *Erkenntnis* no. 24:201-217.
51. Lapied, André. 2006. "Aporie de Diodore et formalisation de l'incertitude." *Cahiers d'économie Politique* no. 50:155-164.
52. Mariani, Mauro. 2009. "Commentary: *The Sea Battle and the Master Argument. Aristotle and Diodorus Cronus on the Metaphysics of the Future*, R. Gaskin, de Gruyter, Berlin-New York, 1995." *Humana Mente: Journal of Philosophical Studies* no. 8:191-200.
Ristampato in: M. Mariani, *Logica modale e metafisica. Saggi aristotelici*, Pisa: Edizioni ETS 2018, pp. 319-330.
Abstract: "Come risulta chiaro già dal titolo, il libro di Gaskin è diviso in due parti: la prima, che comprende i capitoli 1-14, tratta del famoso e famigerato argomento fatalista di *De Interpretatione* 9, mentre la seconda, che comprende i capitoli 15-25, è dedicata al quasi altrettanto famoso e dibattuto "Argomento Dominatore" di Diodoro

Crono, nonché alle sue possibili relazioni con la "Battaglia navale" aristotelica. Seguono poi tre appendici, la prima dedicata ad alcune interpretazioni arabe e medievali di *De Interpretatione* 9, le altre due al tema della prescienza e della contingenza in Alessandro di Afrodisia. Si tratta – è già chiaro da questo sommario – di un libro ricco e stimolante, la cui disamina approfondita richiederebbe molto più spazio di quanto ne ho a disposizione. Mi limiterò dunque a discutere innanzitutto la sua interpretazione della "Battaglia navale", e in secondo luogo il rapporto che la sua ricostruzione dell'"Argomento Dominatore" stabilisce tra Diodoro e Aristotele."

53. Massie, Pascal. 2016. "Diodorus Cronos and the logic of time." *The Review of Metaphysics* no. 70:279-309.
 54. McKirahan, Richard. 1979. "Diodorus and Prior and the Master Argument." *Synthese* no. 42:225-253.
 55. Meixner, Uwe, and Newen, Albert, eds. 1999. *Antike Philosophie mit einem Schwerpunkt zum Meisterargument = Ancient philosophy with a focus on the Master Argument*. Paderborn: Mentis.
- Philosophiegeschichte und logische Analyse, Vol. 2.
 Inhalt / Contents: Einleitung 1; Uwe Meixner: Die Zentralität der analytischen Methode für die Philosophie, insbesondere die der Antike 25; Fernando Ferreira: On the Parmenidean misconception 37; Erwin Tegtmeier: Parmenides' problem of becoming and its solution 51; Theodor Ebert: Der fragende Sokrates : Überlegungen zur Interpretation platonischer Dialoge am Beispiel des Menon 67; Katarzyna Paprzycka: Socrates meets Carnap : explication in the Theaetetus 87; Burkhard Hafemann: Indefinite Aussagen und das kontingent Zukünftige 109; Fernando Inciarte: Aristotle and Aquinas 139; Nicholas White: Intrinsically valued parts of happiness: Aristotle, Butler, and Mill 149; Verity Harte, Meilssa Lane: Pyrrhonism and Protagoreanism : catching Sextus out? 157; Christian Schäfer: Proklos' Argument aus De malorum

subsistentia 31, 5-21 in der modernen Interpretation 173;
Hermann Weidemann: «Aus etwas Möglichem folgt nichts
Unmögliches»: zum Verständnis der zweiten Prämisse von
Diodors Meisterargument 189; Richard Gaskin, Richard:
Tense logic and the Master Argument 203; Michael J.
White: The lessons of Prior's Master Argument 225;
Nicholas Denyer: The Master Argument of Diodorus Cronus
239-252.

56. Michael, Frederick S. 1976. "What is the Master Argument
of Diodorus Cronos?" *American Philosophical Quarterly*
no. 13:229-235.
57. Mignucci, Mario. 1966. "L'argomento dominatore e la teoria
dell'implicazione in Diodoro Crono." *Vichiana* no. 3:3-28.
58. ———. 1987. "Über eine neue Interpretation des
Meisterschlusses." *Grazer Philosophische Studien* no.
30:161-172.
59. Mortensen, Chris. 2015. "The Master Argument of Diodorus
Cronus as an Alternative Account of Modality." In *Reading,
Interpreting, Experiencing: an inter-cultural journey into
Greek letters*, 15-22. Parkville, Victoria: Modern Greek
Studies Association of New Zealand.
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philosophique de l'argument Souverain de Diodore." *Revue
de Philosophie Ancienne* no. 2:3-37.
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counterargument against the Master Argument: a
reappraisal." *SATS. Northern European Journal of
Philosophy*.
62. Øhrstrøm, Peter. 1980. "A New Reconstruction of the
Master Argument of Diodorus Cronus." *International Logic
Review* no. 21:60-65.
63. Øhrstrøm, Peter, and Hasle, Per F. V. 1995. *Temporal
Logic: From Ancient Ideas to Artificial Intelligence*.
Dordrecht: Kluwer.
Part 1: Time and Logic; 1.2. *The Master Argument of
Diodorus Cronus*, pp. 15-32.

64. Picolet, Françoise. 1977. "A propos d'une reconstitution recente du Maître Argument de Diodore Cronus." *Cahiers Fundamenta Scientiae* no. 72:1-12.
Sur Barreau (1975).
65. Prior, Arthur Norman. 1955. "Diodoran Modalities." *The Philosophical Quarterly* no. 5:205-213.
66. Purtil, Richard L. 1973. "The Master Argument." *Apeiron* no. 7:31-36.
67. Quevedo, Amalia. 1989. "Posibilidad e indeterminación. Aristóteles frente a Diodoro Crono." *Thémata. Revista de filosofía* no. 6:125-136.
68. Rescher, Nicholas. 1966. "A Version of the 'Master Argument' of Diodorus." *Journal of Philosophy* no. 63:438-445.
Revised version as a Section of: *Truth and Necessity in Temporal Perspective*, in: N. Rescher, *Essays in Philosophical Analysis*, Pittsburgh: University of Pittsburg Press, 1969, pp. 271-302 (see note 36, p. 296).
69. Schotch, Peter M., and Payette, Gillman. 2011. "Worlds and times: NS and the master argument." *Synthese* no. 181:295-315.
70. Schuhl, Pierre-Maxime. 1960. *Le dominateur et les possibles*. Paris: Presses Universitaires de France.
71. Sedley, David. 1977. "Diodorus Cronus and Hellenistic Philosophy." *Proceedings of the Cambridge Philological Society* no. 23:74-120.
Reprinted in: Terence Irwin (ed.), *Hellenistic Philosophy* (Classical Philosophy Collected Papers vol. 8), New York: Routledge, 1995, pp. 270-315.
On the Master Argument see § 6, pp. 96-102.
72. Seel, Gerhard. 1982. "Diodore domine-t-il Aristote? En hommage à J. Vuillemin." *Revue de Métaphysique et de Morale* no. 87:293-313.
Errata: *Revue de Métaphysique et de Morale*, 89, 1984. p. 143.
73. ———. 2018. "The Puzzles of the 'Master Argument' and their Solutions." *International Philosophical Inquiry* no.

- 41:81-93.
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77. ——. 1979. "Le Dominateur et ses problèmes." *Logique et Analyse* no. 22:121-131.
78. Sutula, John. 1976. "Diodorus and the 'Master Argument'." *Southern Journal of Philosophy* no. 14:323-344.
79. Thomas, Janice. 2006. "The Solipsism Trap, the So-Called Master Argument, and the Pleasant Mistake." *History of Philosophy Quarterly* no. 23:339-355.
80. Trzęsicki, Kazimierz. 1987. "Is Discreteness of Time Necessary for Diodorean Master Argument." *Bulletin of the Section of Logic* no. 16:125-131.
81. Vidal-Rosset, Joseph. 2009. *Les paradoxes de la liberté*. Paris: Ellipses.
- Chapitre 2: L'argument de Diodore Kronos 7; 2.1 L'argument rapporté par Epictète 8; 2.2 L'argument du pseudo-Diodore (1965) 8; 2.2.1 Exposé de l'argument 8; 2.2.2 Analyse de l'argument 10; 2.3 Retour à l'argument de Diodore (350 av. J.-C.) 14-16.
- "L'« argument dominateur » de Diodore est plus souvent qualifié d'« aporie(1) » que de « paradoxe ». Cela peut s'expliquer par le fait que la prétendue contradiction produite par la conjonction des trois énoncés n'est en rien intuitive. En effet, Vuillemin, après d'autres, s'est efforcé de donner une démonstration formelle de la contradiction, démonstration qu'il corrigée par la suite(2). Pour des raisons de simplicité, je ne reprendrai pas ici les arguments que Vuillemin donne en faveur de sa reconstruction formelle qu'il veut à la fois fidèle à l'histoire et à la

philosophie de Diodore. Les reconstructions formelles de l'argument qui ont été données n'entrent pas dans le cadre de cet ouvrage et je ne ferai donc que les mentionner à l'attention du lecteur qui souhaiterait approfondir la question.

Mon intention est de donner une explication rigoureuse mais intuitive de l'argument de Diodore (appelé « argument dominateur ».) La section qui suit est un « détour » qui devrait permettre de rendre plus transparent et plus aisé le sens réel de l'argument, présenté d'une façon plus simple. On reviendra à la présentation axiomatique dans la section suivante." (p. 8)

(1) On nomme « aporie » (en grec *aporia*, absence de passage, difficulté, embarras) une difficulté à résoudre un problème. Les premiers dialogues de Platon sont dits « aporétiques » parce qu'ils s'achèvent sur une absence de réponse au problème dont il est question dans le dialogue. Ce n'est que par extension de la signification originelle de ce terme que l'on désigne souvent aujourd'hui par « aporie » une problème insoluble et inévitable.

(2) J. Vuillemin : *Necessity or Contingency - The Master Argument*. Numéro Lecture Notes N°56. CSLI Publications, Stanford, 1996.

J. Vuillemin : « Nouvelles réflexions sur l'argument dominateur : une double référence au temps dans la seconde prémisse ». *Philosophie*, (55): 14-30, sept 1997.

82. ———. 2011. "Une preuve intuitionniste de l'argument de Diodore-Prior." *Travaux de logique* no. 20:103-122.
83. von Kutschera, Franz. 1986. "Zwei Modallogische Argumente für den Determinismus: Aristoteles und Diodor." *Erkenntnis* no. 24:203-217.
84. von Wright, Georg Henrik. 1979. "The 'Master Argument' of Diodorus." In *Essays in Honour of Jaakko Hintikka. On the Occasion of His Fiftieth Birthday on January 12, 1979*, edited by Saarinen, Esa, Hilpinen, Risto, Niiniluoto, Ilkka and Hintikka, Merrill Provence, 297-307. Dordrecht: Reidel.

85. ———. 1991. "Possibility, plenitude and determinism (with some comments on ancient authors)." In *Peter Geach: Philosophical Encounters*, edited by Lewis, Harry A., 83-96. Dordrecht: Reidel.
86. Vuillemin, Jules. 1979. "L'argument dominateur." *Revue de Métaphysique et de Morale* no. 84:225-257.
87. ———. 1984. *Nécessité ou contingence : L'aporie de Diodore et les systèmes philosophiques*. Paris: Éditions du Minuit. Nouvelle édition augmentée, 2018.
88. ———. 1984. "Un système de fatalisme logique: Diodore Kronos." *Revue de Philosophie Ancienne* no. 3:39-72. Repris comme Chapitre III dans: J. Vuillemin, *Nécessité ou contingence. L'aporie de Diodore et les systèmes philosophiques*, Paris: Éditions de Minuit, 1984.
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90. ———. 1985. "Die Aporie des Meisterschlusses von Diodoros Kronos und ihre Lösungen. Ein Beispiel für die Anwendung der axiomatischen Methode auf die Philosophie." *Allgemeine Zeitschrift für Philosophie*:1-19.
91. ———. 1986. "Zur Rekonstruktion des Meisterschlusses: Antwort an Helmut Angstl." *Allgemeine Zeitschrift für Philosophie* no. 11:83-87.
92. ———. 1991. "Replies." In *Causality, Method and Modality: Essay in Honor of Jules Vuillemin*, edited by Brittan Jr., Gordon G., 207-224. Dordrecht: Kluwer.

"This third section responds to a version of Wiggin's article which has been slightly altered. But since the causes of our disagreements have not changed, I did not think it necessary to change my response.

The first of these disagreements concerns the economy of Diodorus' axioms; it results in part from a misunderstanding, my critique not having taken account of my *retractio* (see note 2). The second disagreement

concerns the original axiom E, for which Wiggins substitutes the forms E' and E", without having reflected on the clauses of external hindrance assumed by the Ancients in the notion of the possible. The third, fundamental disagreement is of a philosophical kind: in order to found the analysis, one of us reverts to the suggestions of natural language, the other of us criticizes them in the name of scientific language."

(2) For the old, faulty version, see J. Vuillemin, *Nécessité et Contingence* (Les Editions de Minuit, 1984), chapter 2, pp. 27-57. For the new version, see J. Vuillemin, "Zur Rekonstruktion des Meisterschlusses, Antwort an Helmut Angstl. " *Allgemeine Zeitschrift für Philosophie*, Frommann Holzboog, 113, 1986.

93. ———. 1996. *Necessity or Contingency. The Master Argument*. Stanford: Center for the Study of Language and Information.
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"Révision de l'interprétation modale de la seconde prémisse de l'argument dominateur d'Epictète, selon laquelle l'impossible ne suit pas logiquement du possible, développée par l'Auteur dans son ouvrage intitulé *Nécessité ou contingence: l'aporie de Diodore et les systèmes philosophiques* (1984). L'Auteur reconstruit son analyse de l'argument aristotélicien du *De Coelo* et aménage le système chrysippéen à la lumière des principes aristotéliciens de la nécessité conditionnelle et de la contraction synchronique de la possibilité."
95. Weidemann, Hermann. 1987. "Das sogenannte Meisterargument des Diodoros Kronos und der

- Aristotelische Möglichkeitsbegriff." *Archiv für Geschichte der Philosophie* no. 69:18-53.
96. ———. 1999. "„Aus etwas Möglichem folgt nichts Unmögliches“. Zum Verständnis der zweiten Prämisse von Diodors Meisterargument." *Philosophiegeschichte und logische Analyse / Logical Analysis and History of Philosophy* no. 2:189-202.
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 101. ———. 1985. *Agency and Integrality. Philosophical Themes in the Ancient Discussions of Determinism and Responsibility*. Dordrecht: Reidel.
 102. ———. 1999. "The Lessons of Prior's Master Argument." *Philosophiegeschichte und logische Analyse* no. 2:225-238.
 Abstract: "Diodorus' Master Argument was intended to show that whatever is possible either is or will be true. The intended conclusion does not follow from the extant premisses of the Master Argument. The Near Miss argues however, from those premisses alone, that nothing can be more than momentarily an exception to the Master Argument's intended conclusion. Strong arguments support even the most contentious of those premisses ("every past truth is necessary"). We therefore cannot easily ignore the Near Miss. Moreover, there are various supplementary premisses that would turn the Near Miss into an argument with the full force of the Master Argument itself. Each of Diodorus' ancient rivals, since they accepted such doctrines as eternal recurrence, temporal atomism, and the

"extended" present, would grant him at least one of these supplementary premisses. So too would any modern who holds that time is not circular, has no beginning, and does not branch."

103. Wiggins, David. 1991. "Temporal Necessity, Time and Ability: a philosophical commentary on Diodorus Cronus' Master Argument as given in the interpretation of Jules Vuillemin." In *Causality, Method and Modality: Essay in Honor of Jules Vuillemin*, edited by Brittan Jr., Gordon G., 185-206. Dordrecht: Kluwer.
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Stoic Logic: The Dialectic from Zeno to Chrysippus

THE STOIC PHILOSOPHY OF LANGUAGE

"The nature of the Stoics' philosophy of language is the most tantalizing problem in the history of semantics. We know enough of it to say that it was by far the most intricate and probably the most insightful theory of its kind in antiquity and for centuries afterward; but we cannot be certain what its details were, and even its leading principles are sometimes obscured by vague or conflicting testimony. Those Stoics who had most to say about language were, naturally, the logicians, and the difficulty of determining the exact character of what they had to say stems from the fact that none of the many works of the Stoic logicians is extant. The best surviving sources (which date from almost five hundred years after the period of greatest development in Stoic logic and semantics) are Sextus Empiricus, *Outlines of Pyrrhonism*, Book II, and *Adversus Mathematicos*, Book VIII; and Diogenes Laërtius, Book VII. Under these circumstances it is seldom possible to assign a particular doctrine to a particular Stoic, but much of the best of their logic and semantics is very likely to be the work of Chrysippus (c. 280–206 BCE). Under the Stoic division of philosophy into physics, ethics, and logic, logic was divided into rhetoric and dialectic, and dialectic further

divided into an account of language (περί της φωνῆς) and an account of things signified (περί των σημαινόμενων). Both these subdivisions contain material relevant to semantics. In their account of language the Stoics distinguished vocal sound generally, "which may include mere noise," from the sort that is articulate (ἔξαρθρος), that is, capable of being embodied in written symbols (ἑγγάμματος). Articulate sound, in turn, may be non-significant—for instance, "blityri"— or significant (σημαντή); but for any articulate sound to be considered a sentence (λόγος) it must be significant and a product of someone's reason (Diogenes Laërtius 7.55–57).

Within that same branch of their dialectic the Stoics recognized five kinds of words and distinguished their semantic or syntactic functions. They were the first who clearly separated (1) names, such as "Socrates," from (2) appellatives (προσηγορίαι), such as "man." (Cf. Aristotle's similar but significantly different distinction in *De Interpretatione*, Ch. 7.) A name "*points out* a kind proper to an individual," while an appellative "*signifies* a common kind." (3) A verb "*signifies* a predicate"; (4) a conjunction "*binds together* the parts of a sentence"; (5) an article (possibly also what would now be called a relative pronoun) serves to "*distinguish* the gender and number of nouns" (Diogenes Laërtius 7.58). Thus the function of conjunctions and articles is purely syntactic, the semantic function of (proper) names is different from that of appellatives (or common names), and the appellative and the verb—the standard ingredients of the simplest kind of logicians' sentence—have one and the same kind of semantic function. The appellative occurring in a sentence signifies a subject and the verb a predicate or "something attachable (συστακτόν) to the one or more subjects."

Obviously the division between the accounts of language and of things signified was not exclusive, but the transition from the one account to the other as the Stoics conceived of them may be seen in the claim that all we utter (προφέρειν) is sounds, while what

we express (λέγειν) is matters of discourse (πράγματα), or *lekta* —“expressibles” (Diogenes Laërtius 7.57). It is the doctrine of the *lekton* around which the Stoics organized their account of things signified. In its novelty, importance, and difficulty that doctrine overshadows all the considerable remainder of their philosophy of language.” (p. 757).

From: Norman Kretzmann, "Semantics, History of" in: Donald M. Borchert (ed.), *Encyclopedia of Philosophy*. Second edition, New York: Thomson Gale 2006, pp. 750-807.

THE REDISCOVERY OF STOIC LOGIC

"The first reactions to the negative appraisal of Stoic philosophy have come not from historians or philosophers specializing in antiquity, but from logicians being interested in the development of ancient logic.

(...)

Now in addition to what has been said in connection with the nineteenth-century misinterpretations and misconceptions, let me quote another view about the specific reasons for the disappreciation as well as for the rehabilitation of Stoic logic; it is found in I. M. Bochenski's *Ancient Formal Logic* (Amsterdam, 1951), and it clearly portrays the difference in attitude of the logicians of the twentieth century towards the Stoic logical system:

Modern history of Logic had been started during the XIXth century, but its state was very bad at that time -- indeed until 1930 approximately -- because of two phenomena. On one hand, most of the historians of logic took for granted what Kant said on it; namely that 'formal logic was not able to advance a single step (since Aristotle) and is thus to all appearance a closed and complete body of doctrine'; consequently, there was, according to

them, no history of logic at all, or at the most, a history of the decay of Aristotelian doctrines. On the other hand, authors writing during that period were not formal logicians and by 'logic' they mostly understood methodology, epistemology and ontology. . . . We may place the beginning of recent research in our domain in 1896 when Peirce made the discovery that the Megarians had the truth-value definition of implication. (pp. 4-5)

Now whether it is Peirce to whom we owe the revival of interest in Stoic logic or not, what certainly is the case is that, from the early decades of the twentieth century on, given the important developments in the field of symbolic logic, it has finally become obvious that Stoic logic differed essentially from Aristotelian logic and should be studied on its own merits. The articles and books on Stoic logic which since then have been published, have examined in detail the Stoic contribution to the development of a logical calculus:

J. Łukasiewicz, 'Zur Geschichte der Aussagenlogik', *Erkenntnis*, 5 (1935).

B. Mates, *Stoic Logic* (Berkeley, 1953).

O. Becker, *Zwei Untersuchungen zur antiken Logik* (Wiesbaden, 1957).

W. and M. Kneale, *The Development of Logic* (Oxford, 1962).

M. Mignucci, *Il significato della logica stoica* (Bologna, 1967).

I. Mueller, 'Stoic and Peripatetic Logic', *Archiv für Geschichte der Philosophie*, 51 (1969), 173-87.

M. Frede, *Die stoische Logik* (Göttingen, 1974).

M. Frede, 'Stoic vs. Aristotelian syllogistic', *Archiv für Geschichte der Philosophie*, 56 (1974), 1-32." (pp. 15-17)

From: Katerina Ierodoakonou, "Introduction. The Study of Stoicism: Its Decline and its Revival", in: K. Ierodiakonou (ed.), *Topics in Stoic Philosophy*, Oxford: Clarendon Press 1999.

"Modern mathematical logic has taught us to distinguish within formal logic two basic disciplines, no less different from one

another than arithmetic and geometry. These are, the logic of propositions and the logic of terms. The difference between the two consists in the fact that in the logic of propositions there appear, besides logical constants, only propositional variables, while in the logic of terms term variables occur.

The simplest way of making this difference clear is to examine the Stoic and the Peripatetic versions of the law of identity. To avoid misunderstanding let me at once say that, so far as our sources indicate, the two laws of identity were only incidentally formulated by the ancients, and in no way belong to the basic principles of either logic. The Stoic law of identity reads "if the first, then the first", and is to be found as a premiss in one of the inference-schemata cited by Sextus Empiricus. (1) The Peripatetic law of identity is "a belongs to all a", and is not mentioned by Aristotle, but can be inferred from a passage in Alexander's commentary on the Prior Analytics. (2) Using variable letters we can write the Stoic law of identity in the form "if p then p"; the Peripatetic law can be recast in the form "all a is a". In the first law the expression "if ... then" is a logical constant, and "p" a propositional variable; only propositions such as "it is day" can be meaningfully substituted for "p". This substitution yields a special case of the Stoic law of identity: "if it is day, it is day". In the second law the expression "all ... is" is a logical constant, and "a" a term variable; "a" can be meaningfully replaced only by a term, and, in accordance with a tacit assumption of Aristotelian logic, only by a general term at that, such as "man" Upon substitution we get a special case of the Peripatetic law of identity: "all man is man". The Stoic law of identity is a thesis of the logic of propositions, whereas the Peripatetic law is a thesis of the logic of terms.

This fundamental difference between the logic of propositions and the logic of terms was unknown to any of the older historians of logic. It explains why there has been, up to the present day, no history of the logic of propositions, and, consequently, no correct picture of the history of formal logic as a whole. Indispensable as Prantl's 3) work is, even today, as a collection of sources and

material, it has scarcely any value as an historical presentation of logical problems and theories. The history of logic must be written anew, and by an historian who has fully mastered mathematical logic. I shall in this short paper touch upon only three main points in the history of propositional logic. Firstly I wish to show that the Stoic dialectic, in contrast to the Aristotelian syllogistic, is the ancient form of propositional logic; and, accordingly, that the hitherto wholly misunderstood and wrongly judged accomplishments of the Stoics should be restored their due honour. Secondly I shall try to show, by means of several examples, that the Stoic propositional logic lived on and was further developed in medieval times, particularly in the theory of "consequences". Thirdly I think it important to establish something that does not seem to be commonly known even in Germany, namely that the founder of modern propositional logic is Gottlob Frege.

(...)

The fundamental difference between Stoic and Aristotelian logic does not lie in the fact that hypothetical and disjunctive propositions occur in Stoic dialectic, while in Aristotelian syllogistic only categorical propositions appear. Strictly speaking, hypothetical propositions can be found in Aristotle's syllogistic also, for each proper Aristotelian syllogism is an implication, and hence a hypothetical proposition. For example, "If a belongs to all b and c belongs to all a, then c belongs to all b". (7) The main difference between the two ancient systems of logic lies rather in the fact that in the Stoic syllogisms the variables are propositional variables, while in Aristotle's they are term variables. This crucial difference is completely obliterated, however, if we translate the above-mentioned Stoic syllogism as Prantl does (I, p. 473):

If the first is, the second is

But the first is

Therefore the second is.

By adding to each variable the little word "is", which occurs nowhere in the ancient texts, Prantl, without knowing or wishing it, falsely converts Stoic propositional logic into a logic of terms.

For in Prantl's schema only terms, not propositions, can be meaningfully substituted for "the first" and "the second". As far as we can judge from the fragmentary state of the Stoic dialectic that has come down to us, all Stoic inference-schemata contain, besides logical constants, only propositional variables. Stoic logic is therefore a logic of propositions. (8)" (pp. 197-200)

Notes

(1) Sextus, *Adv. Math.* VIII 292 (missing in Arnim): *ei to poton, to poton*. Good as H. von Arnim's collection is (*Stoicorum veterum fragmenta* [SVF], vol. II, Leipzig 1903), it does not begin to serve as source material for Stoic dialectic.

(2) Alexander, *In anal. pr.* comm., ed. Wallies, p. 34, 1. 19.

(7) Aristotle, *An. pr.* II. 11. 61b34

(8) I have defended this interpretation of the Stoic dialectic since 1923; see J. Łukasiewicz, "Philosophische Bemerkungen zu mehrwertigen Systemen des Aussagen-kalkuls", *Comptes rendus des séances de la Société des Sciences et des Lettres de Varsovie* 23 (1930), cl. III, pp. 51-77. ["Philosophical Remarks on Many-Valued Systems of Propositional. Logic", pp. 153-178 of this volume.] I rejoice in having found in H. Scholz, *Geschichte der Logik* (Berlin, 1931), p. 31, a supporter of this point of view.

From: Jan Łukasiewicz, "On the History of the Logic of Proposition" [1934], translated in: *Selected Works*, edited by Ludwik Borkowski, Amsterdam: North-Holland 1970, pp. 197-217 (Greek text omitted).

"I have compiled thus many quotations on purpose, for, although they illuminate one of the most important problems of logic, it nevertheless appears that many of them were either unknown to the historians of logic, or at least not sufficiently appreciated. The reason for this is in my opinion that the history of logic has thus far been treated by philosophers with insufficient training in logic. The older authors cannot be blamed for this, as a scientific

logic has existed only for a few decades. The history of logic must be written anew, and by an historian who has a thorough command of modern mathematical logic. Valuable as Prantl's work is as a compilation of sources and materials, from a logical point of view it is practically worthless. To give only one illustration of this, Prantl, as well as all the later authors who have written about the logic of the Stoa, such as Zeller and Brochard, have entirely misunderstood this logic. For anybody familiar with mathematical logic it is self-evident that the Stoic dialectic is the ancient form of modern propositional logic. (26) Propositional logic, which contains only propositional variables, is as distinct from the Aristotelian syllogistic, which operates only with name variables, as arithmetic is from geometry. The Stoic dialectic is not a development or supplementation of Aristotelian logic, but an achievement of equal rank with that of Aristotle. In view of this it seems only fair to demand of an historian of logic that he know something about logic. Nowadays it does not suffice to be merely a philosopher in order to voice one's opinion on logic.

Notes

(26) I have already expressed this idea, in 1923, in a paper read to the first congress of Polish philosophers in Lwow. A short summary of it appeared in *Przegląd Filozoficzny* 30 (1927), p. 278. [Łukasiewicz develops his historical analysis of Stoic logic in his article "On the History of the Logic of Propositions" (pp. 197-217 of this book).] (p. 178)

From: Jan Łukasiewicz, "Philosophical Remarks on Many-Valued Systems of Propositional Calculus" [1930], translated in: *Selected Works*, edited by Ludwik Borkowski, Amsterdam: North-Holland 1970, pp. 153-178.

"In the first comprehensive history of western logic Prantl (1) described Stoic logic as "dull," "trivial," and "pedantic." Prantl's

dismissal of Stoic logic was accepted by most interpreters of Stoicism for three quarters of a century. However, since the publication of Łukasiewicz's article, "*On the History of the Logic of Propositions*" in 1934, (2) Prantl's evaluation has been largely abandoned. Bochenski's remark, "The development of formal logic in antiquity reached its peak in the works of the thinkers belonging to the Megaric and Stoic Schools," exemplifies well the radical rehabilitation of the Stoics as logicians. (3) The cause of this rehabilitation is not the discovery of new texts, but rather the twentieth-century revolution in the subject of logic itself.

Łukasiewicz and others, working with a full understanding of modern logic, have succeeded in retrieving from the ancient texts a Stoic logical theory of startling originality which rivals the achievement of Aristotle, the founder of logic. The failure of Prantl and his successors to accomplish this retrieval stems not from their obtuseness or stupidity but from the fact that the background scientific knowledge needed to understand the Stoic achievement was not available to them.

A factor contributing to Prantl's low opinion of Stoic logic was the character of the ancient texts themselves. There are no primary sources for Stoic logic analogous to Aristotle's *Prior Analytics*, and the ancient secondary sources are brief and usually hostile in their treatment of the subject. In many cases Prantl's evaluations simply repeat or develop remarks in the sources themselves. The unsatisfactoriness of the sources (on this see Mates, *Stoic Logic* 8-10) makes any but a tentative reconstruction of Stoic logic impossible. Unless an indication is given to the contrary, what I describe will be the most certain features of the theory.

One of the uncertain features is chronology. The history of Stoicism proper covers five centuries during which the logical theory, like other doctrines of the school, underwent modification and development. In the case of logic we know of some disagreements within the school and some ideas that can be ascribed to individuals, but most of our sources refer simply to "the Stoics," as if there were a single, unambiguous Stoic logical theory. Commentators have tended to assign the major Stoic

achievements in logic to Chrysippus (c. 280 B.C. - c. 206 B.C.), the third leader of the Stoa, of whom it was said, "If there were a dialectic among the gods, it would be none other than the Chrysippean one." (Diogenes Laertius 7.180. At 7.198 Diogenes mentions that Chrysippus wrote 311 books on logical matters.) In general I shall not attempt to assign logical doctrines to specific persons, but simply speak of "Stoic logic." Occasionally, however, it will be necessary to refer to possible disagreements within the school." (pp. 1-2)

Notes

(1) C. Prantl, *Geschichte der Logik im Abendlande* (Leipzig, 1855) 408. I have generally given at most one ancient source for a doctrine. More information about sources can be found by consulting B. Mates, *Stoic Logic* (2nd ed.) or M. Frede, *Die Stoische Logik*.

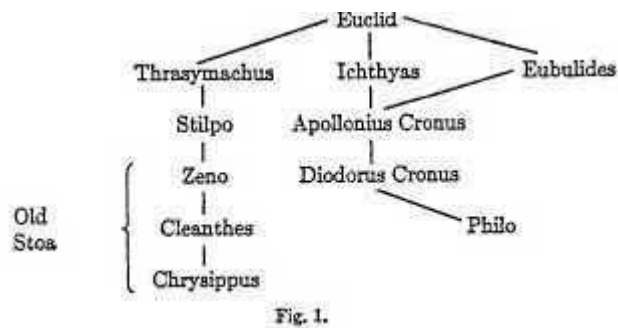
(2) Reprinted in J. Łukasiewicz, *Selected Works*, ed. L. Borkowski

(3) I. M. Bochenski, *Ancient Formal Logic* (Amsterdam, 1951) 77.

From: Ian Mueller, "An Introduction to Stoic Logic", in: John M. Rist (ed.), *The Stoics*, Berkeley: University of California Press 1978, pp. 1-26.

"Zeno, the founder of the Stoic school of philosophy, is said to have been influenced primarily by two of the Socratic schools, the Cynics and the Megarians. (*) From the Cynics, according to the usual account, he took his moral teaching; from the Megarians, his logic. In view of our present subject, we shall omit all discussion of the Cynics and devote our attention to the Megarians.

The Megarian school was founded by Euclid, a follower of Socrates and a somewhat older contemporary of Plato. (See fig. 1.)



Among the pupils of Euclid were: Eubulides, a famous logician to whom the antinomy of The Liar is sometimes ascribed; Ichthyas, the successor of Euclid as head of the school; and Thrasyrnachus of Corinth, who is known primarily as the teacher of Stilpo.

Stilpo, a contemporary of Aristotle, enjoyed a great reputation as a lecturer. He is supposed to have been somewhat influenced by the Cynics. His most famous pupil was Zeno, founder of Stoicism. Another important branch of the Megarian school consisted of Eubulides, Apollonius Cronus, Diodorus Cronus, and Philo, in that order. The latter two are very important in connection with Stoic logic, mainly for their views on the truth-conditions of conditionals.

Diodorus, a native of Iasus in Caria, lived at the court of Alexandria in the reign of Ptolemy Soter. His surname or nickname "Cronus" ("old fool") is variously explained. According to one story, it was given to him by Ptolemy on account of his inability to solve a problem of logic put forth by Stilpo at a royal banquet. In fact, Diodorus is said to have taken his defeat so much to heart that he went home, wrote a treatise on the subject, and died in despair. According to another account, Diodorus took the surname from his teacher, Apollonius Cronus. At any rate, Diodorus was certainly not regarded as an old fool in antiquity. On the contrary, he was so celebrated for his dialectical skill that he was called "the logician" and "most logical one". This epithet gradually became a surname, and was even applied to his five daughters, who were also distinguished as logicians.

Little is known of the philosophy of Diodorus save two important definitions (and examples illustrating these): (1) a proposition is

possible if and only if it either is true or will be true; (2) a conditional proposition is true if and only if it neither is nor was possible for the antecedent to be true and the consequent false. It is known that he constructed the famous "Master" argument (*kurieuon logos*) to justify his definition of "possible." It is also known that he entered into a controversy with his pupil Philo over the truth-conditions for hypothetical propositions; this controversy was perpetuated and enlarged within the Stoic school.(**)

Philo of Megara, the pupil of Diodorus, was also very famous as a logician. Almost nothing is reported of his life except that he was a friend of Zeno. Chrysippus later wrote treatises against both him and his master. Philo disagreed with Diodorus concerning the nature of possibility and especially concerning the criterion for the truth of conditional propositions. Regarding the first, he thought (as against Diodorus) that a piece of wood at the bottom of the sea should be considered combustible even if it will never be burned. In regard to conditionals, he gave exactly the modern truth-table definition: a conditional is false if it has a true antecedent and a false consequent; in the other three cases it is true.

Zeno himself apparently lived ca. 350-260 B.C., but the dates are very uncertain. Like all the other major Stoic philosophers before the Christian era, he was not a native of Greece proper. (His birthplace was at Citium, in Rhodes.) Few facts are known about him, but where the facts leave off, legend begins. It is said that he was greatly respected for his personal characteristics dignity, modesty, sincerity, affability. Presumably because of a life of moderation, he lived to the ripe old age of ninety-eight, and, as the story has it, he died in the following way. As he was leaving the school one day, he stumbled and broke his toe. Beating his hand upon the ground, he addressed himself to the gods: "I'm coming of my own accord. Why then do you bother to call me?" Then he perished by holding his breath.

Also according to the legends, Zeno devoted much thought and energy to proposed reforms in language. This aroused ire in

certain quarters, and it was pointed out that he was proposing to reform a language which he himself could hardly speak. As he was fond of coining new words, much of the technical vocabulary of Stoic logic may well be attributed to him. It was said that he used new terms in order to conceal his plagiarism of the views of his predecessors; Cicero repeats this charge at least fourteen times. His writings, which were not numerous and were written in a very poor style, have been lost (excepting, of course, a few fragments).

The second head of the Stoic school was Cleanthes, known throughout antiquity as a man of strong character, great energy, and weak intellect. According to one story, he was a prize fighter who came to Athens with four drachmas in his pocket and entered the school of Zeno. He accepted Zeno's teaching in every detail and passed it on unchanged. At the age of ninety-nine or so, he died by starving himself to death.

Cleanthes was succeeded by Chrysippus, often said to have been the greatest logician of ancient times. Chrysippus was regarded as the second founder of Stoicism; according to an old saying, "If there had been no Chrysippus, there would have been no Stoa." He was born in 280 B.C. in Cilicia; the date of his death may be conjectured as 205 B.C. Without doubt, he was the best student his Stoic professors ever had. While in training, he thought of so many skeptical arguments against Stoicism that he was accused by the later Stoics of supplying Carneades with ammunition for attacking them. Chrysippus wrote 750 books, if the list given by Diogenes can be trusted. Of these we possess only the titles and a small number of fragments. But the titles alone show that he wrote on almost every important aspect of propositional logic.

There are many ancient complaints that Chrysippus' books were dry and repetitious, and written in a very poor style. Yet they were widely read. He did not, like Cleanthes, merely repeat the words of his predecessors; there is a story that when he was a student of logic he wrote to Cleanthes, "Just send me the theorems. I'll find the proofs for myself."

It seems likely that Chrysippus was responsible for the final organization of Stoic logic into a calculus. When the five basic undemonstrated argument-types are cited, the name of Chrysippus is usually mentioned; in one place it is expressly stated that Chrysippus restricted the number of these types to five." (pp. 5-7)

Notes

(*) For the following account I am indebted to Zeller, *Die Philosophie der Griechen*, vol. 2, part 1, pp. 244 ff., and vol. 3, part 1, pp. 27-49; William Smith, *Dictionary of Greek and Roman Biography and Mythology* (Boston, Little, Brown, 1849), 3 vols.

(**) The views of Diodorus will be discussed fully in the sequel, pp. 36-40, 44-51. Cf. my article, "Diodorean Implication."

From: Benson Mates, *Stoic Logic*, Berkeley: University of California Press 1953.

SUMMARY OF BENSON MATES, STOIC LOGIC (1953)

Chapter I. *Introduction*: "The aim of this study is to present a true description of the logic of the Old Stoa. It repeats most of Łukasiewicz's published conclusions on the subject and offers additional evidence for them. It also (1) describes the Stoic semantical theory and compares it with certain similar modern theories, (2) attempts to give a better account of the heretofore misunderstood Diodorean implication, (3) points out the Stoic version of the conditionalization principle, and (4) discusses the contention of the Stoics that their propositional logic was complete. In appendices it offers and justifies new translations of some important fragments pertaining to Stoic logic. The Stoic

authors in whose work we shall be interested primarily are Zeno, Cleanthes, and Chrysippus. Closely associated with them were Diodorus Cronus and Philo, of the Megarian school. Since the writings of these men have been lost, and since our sources usually do not distinguish between the views of the various Stoics, we are forced to treat the entire Old Stoa as a unit. This, of course, creates many difficulties. The best of our sources are Sextus Empiricus and Diocles Magnes (*apud* Diogenes Laertius). We also derive bits of information from Cicero, Gellius, Galen, Boethius, Apuleius, Alexander of Aphrodisias, Simplicius, Philoponus, Origen, Proclus, Stobaeus, Epictetus, Seneca, and a few others. Of these, only Epictetus and Seneca were favorably inclined toward Stoicism, and they, unfortunately, restricted their attention almost entirely to ethics. It is thus remarkable that the fragments of Stoic logic, transmitted by unsympathetic hands, are as clear and consistent as they are." (p. 1)

Chapter II. *Signs, sense, and denotation*: "The Chapter is divided into two sections. The first contains an account of the Stoic distinction between the sign, the significate (called the "Lekton"), and the physical object to which the sign refers. Various types of signs and their corresponding Lekta are described in detail. In the second section the Stoic theory is compared with the modern theories of Frege and Carnap and is shown to bear marked resemblance to them, particularly in regard to what Carnap calls the "intension" of linguistic expressions. Numerous dissimilarities are also indicated, the most important of which are: (1) the Stoics restricted the denotation of expressions to bodies; (2) the Stoics did not take truth-values as the denotations of sentences." (p. 11)

Chapter III. *Propositions, truth, and necessity*: "This Chapter is divided into three sections. The first defines and classifies propositions and discusses their fundamental properties. A proposition is said to be "a complete Lekton assertoric in itself." Its most basic property is that of being true or false and not both. Propositions are classified as atomic and molecular; each of these classes in turn is divided into several subclasses. The absence

from Stoic logic of examples beginning with "all" is noted. In the second section, the many Stoic usages of the words "truth" and "true" are taken up *seriatim*. All these usages are definable in terms of the usage referring to propositions. The third section deals with Stoic notions of necessity and possibility, as found in the fragments of certain (Megarian) philosophers to whom the notions were originally due. It is shown that a reference to time plays a very important role in Diodorus' view of possibility. (This is closely connected with his position in the controversy over implication, to be discussed in chap. IV.) A brief account of what is known of the famous "Master" argument of Diodorus is included, together with a few remarks on the views of Philo and Chrysippus regarding possibility." (p. 27)

Chapter IV. *Propositional connectives*: "The Stoics gave truth-functional definitions of all the more important propositional connectives, and defined also some non-truth-functional connectives. These definitions, and the various controversies over them, form the subject matter of the present chapter. The first section, on implication, contains an account of the four-sided argument over the truth-conditions for hypothetical propositions. It is shown that Philo's type of implication was exactly the same as the modern "material implication." Diodorean implication is defined and distinguished from Chrysippean implication, which is the ancient equivalent of what is now called "strict implication." The connection between Diodorus' views on implication and on necessity is shown. In the second section we are concerned with disjunction. The Stoics distinguished between inclusive and exclusive disjunction, gave truth-functional definitions of both types and also a non-truth-functional definition of the latter type. The third section considers conjunction, along with several other connectives. In the fourth section, we see how implication was defined in terms of conjunction and negation; also, how exclusive disjunction was defined in terms of negation and equivalence. Certain difficulties in the evidence for these definitions are pointed out." (p. 42)

Chapter V. *Arguments*: "This Chapter consists of five sections. In the first, "argument" is defined as "a system of propositions composed of premises and a conclusion." A valid argument, according to the Stoics, is an argument such that the negation of its conclusion is incompatible with the conjunction of its premises. A true argument is a valid argument which has true premises, and a demonstration is a special kind of true argument. Another subclass of the valid arguments contains the so-called "undemonstrated" arguments; of these, five types were called "simple" and the innumerable others were called "non-simple," or "derived." To achieve generality in their discussions of propositional logic the Stoics made use of inference-schemas containing the numerals "first," "second," and so on as propositional variables. The second section contains an exposition of the five basic undemonstrated argument-types, as they are described in some twelve sources. The third section discusses an important Stoic principle which is closely related to the so-called "deduction theorem." In the fourth section is an account of the Stoic method of deriving non-simple undemonstrated arguments from simple ones; examples are considered in detail. Note is taken of the assertion of the Stoics that their propositional logic was complete. The fifth section describes the Stoic classification of invalid arguments and also considers briefly the famous paradox of The Liar, which was the subject of much Stoic writing. The classification is found to be poor, but the Stoic version of The Liar is stronger than the usual Epimenides paradox." (p. 58)

Chapter VI. *Evaluations of Stoic logic*: "In this concluding chapter we consider the traditional evaluations of Stoic logic, together with some of the confusions upon which they are based. The first section concerns some typical adverse criticisms by Prantl and Zeller. Unfortunately, these cannot be challenged by attacking the relevance or accuracy of the evidence for them, since there is no evidence for them. But it is apparent that Prantl and Zeller did not understand Stoic logic. The second section discusses the great confusion which exists in regard to the

meaning of the technical term *sunemmenon*. Third, there is a short conclusion." (p. 86)

Appendix A. *Translations*: "This Appendix consists of translations of some of the fragments which comprise our sources for Stoic logic. I have included only the fragments upon which relatively important sections of this study rest, and, of these, only passages which have not already been adequately translated into English." (p. 95)

Appendix B. *Glossary*: "This Glossary is not intended to be a complete list of the technical terms in Stoic logic. It includes only terms that appear in a sufficient number of contexts to establish their technical usage. Further, only a few of the more important occurrences of each term are cited. Usually these will include a definition or at least a passage of relatively clear meaning. Other glossaries of Stoic terminology are as follows:

R. G. Bury, *Sextus Empiricus*, volume 3. This glossary is almost worthless in regard to logical terminology.

I. M. Bochefiski, *Elementa Logicae Graecae*, pp. 99 ff. (Greek-Latin). Good.

J. W. Stakelum, *Galen and the Logic of Propositions*, pp. 92-93 (Greek-English). Good.

See also the *Index Verborum* in volume 4 of *Stoicorum Veterum Fragmenta*. Most of the Aristotelian commentators are well indexed, but unfortunately the indices for Sextus are very incomplete, and there are none for Diogenes Laertius." (p. 132)

From: Benson Mates, *Stoic Logic*, Berkeley: University of California Press 1953.

SOURCES FOR STOIC LOGIC

"Except for a few fragments, all the writings of the earlier Stoics have been lost. We must therefore depend on secondary sources.

But that is only half of the difficulty. Since none of the later Stoics had much to say about logic, we are in the very unsatisfactory position of having to depend on the accounts of men who were without exception opponents of the Stoics. In view of this, it is all the more remarkable that Stoic logic makes as excellent a showing as it does. Perhaps the saving circumstance was that the essentials of Stoic logic were brought together in handbooks not long after the time of Chrysippus. Such handbooks were commonly entitled "Introduction to Logic" (*eisagogé dialektiké*), and evidently had a very wide circulation. Whatever accuracy and sense remain in the bits of Stoic logic which have filtered down to us probably derive from the fact that our sources made use of the handbooks.

The difficulties created by the loss of the Stoic writings are even greater than might at first appear. Since our sources do not distinguish between the views of the various Stoics but rather tend to ascribe the sayings of any of them to all of them, we must treat the school as a whole, even though we know that this procedure will lead to apparent inconsistencies. Also, it is obvious that technical writings such as those on logic suffer from being reported at second hand; of all our sources, Sextus is the only one who seems to have had some understanding of the theory he was reporting. Another serious difficulty arises from the fact that our best sources are at least four hundred years later than Chrysippus. By this time the mixture and confusion of Stoic logic with that of Aristotle were well under way, producing strange conglomerates like that found in Galen's *Institutio Logica*. Since we do not possess the information necessary for disentangling the two doctrines, we can only make the best of it.

Far and away our most important source for Stoic logic is Sextus Empiricus, a Greek physician and Skeptic, who lived in the first half of the third century of the Christian era. Almost nothing is known of his life. Two of his works are extant, the *Outlines of Pyrrhonism*, in three books, and *Against the Mathematicians*, in eleven books. Most of his discussion of Stoic logic is to be found in Book II of the *Outlines* and Book VIII of *Against the*

Mathematicians; the accounts given in these two places are often identical. Sextus is our only intelligent source. But even with him there is a fly in the ointment: he quotes the Stoics only to refute them. We may expect, therefore, that any parts of Stoic logic which he found either too difficult or too good to refute will be absent from his account. Also, he emphasized those matters on which Stoic opinions differed, with the result that we get no clear statement of the logical doctrine of any one man.

The next best picture of Stoic logic is that given by Diogenes Laertius, author of *Lives of Eminent Philosophers*. There is no information whatever on his own life, but since Sextus and Saturninus are the latest writers he quotes, it is sometimes guessed that he lived in the third century of the Christian era. As is well known, Diogenes is wholly unreliable on many subjects. It is therefore fortunate for us that in writing his life of Zeno (Book VII) Diogenes had recourse to a book written by Diodes Magnes, a scholar of the first century B.C., who seems to have had a fair knowledge of Stoic logic. The most serious deficiency of Diogenes' account is its extreme brevity; what there is of it is as excellent as anything to be found in Sextus.

All our other sources for Stoic logic are relatively unsatisfactory. Scattered references to the Stoa will be found throughout the twenty volumes of Galen's works,(8) but discussions of any extent are rare. The little treatise called *Historia Philosophica* contains the remains of a good account of the five basic undemonstrated argument-types. However, it has been necessary for editors to reconstruct the text on the analogy of corresponding passages in Sextus; consequently it has little independent value. There is also the handbook, *Institutio Logica*, ascribed to Galen by the manuscripts. Prantl has vehemently challenged its authenticity; Kalbfleisch has "proved" it genuine with equal vigor.(9) In any case, the treatise is of considerable interest to historians of logic. Although it is a mixture of Aristotelian and Stoic logic, its account of the five basic types of argument is clear and agrees exactly with our other information. Its criticism of these, however, is typically Peripatetic and typically confused. The treatise contains a few

further hints about the views of the Stoics, but nothing else of value for our purpose.

Other scraps of information are to be found in the writings of Cicero, Gellius, and the many Aristotelian commentators.⁽¹⁰⁾ Most of these scraps fit consistently into the picture, but they are too brief to be of much help.

The work of the later Aristotelian commentators reveals extreme confusion between Stoic and Aristotelian logic, and hence is of very little use as a source.

All our sources have one characteristic in common: the more interesting the logic becomes, the more corrupt the text becomes. Because of the technical terminology and the very unusual sentences with which the Stoics sometimes illustrated their points, the origin of these textual difficulties is understandable -- but the difficulties remain. Especially is this noticeable in Galen's *Institutio Logica*, where occasionally the whole thread of argument is lost.

In view of all these difficulties, the reader may well wonder whether there is enough evidence to justify the attempt to give a complete account of Stoic logic. He may answer this question for himself by reading the following chapters and, if he is interested, by checking the exposition against the Stoic passages which are cited. He will find that no effort has been made to conceal or minimize evidence contrary to the various theses proposed; the price exacted by this procedure is that the account is not always as simple and clear as one might desire." (pp. 8-10)

Notes

(8) The best exegetical study of the logic of Galen is by Stakelum, *Galen and the Logic of Propositions* [1940]. See especially the summary, pp. 90-91. [cited below]

(9) Prantl, *Geschichte der Logik im Abendlande*, [1855] pp. 591-610; Kalbfleisch, "Ueber Galens Einleitung in die Logik," [1897] pp. 681-708.

(10) The relevant writings of these authors are listed in the Bibliography. An excellent critical discussion of Apuleius, Alexander of Aphrodisias, Sextus, Diogenes Laertius, Themistius, Boethius, Ammonius, Simplicius, and Philoponus as sources of information about ancient logic may be found in Bochenski, *La Logique de Théophraste*, [1947] chap. I.

From: Benson Mates, *Stoic Logic*, Berkeley: University of California Press 1953.

"Conclusion.

It is evident from the *Introduction to Dialectic* that Galen was perfectly familiar with Stoic formal logic. It is equally evident that he was not a Stoic. Because he began his studies in the Stoic school, his terminology was Stoic, and the powerful Stoic influence of his period confirmed him in Stoic usage. His strong formalistic tendency also manifests his Stoic training. His later profession of Aristotelianism, however, becomes certain in his Peripatetic interpretation of Stoic propositions.

Galen presents exactly the forms of Stoic compound propositions, which he calls "hypothetical"; but his explanation are not Stoical, because he follows the Peripatetic practice of examining the matter of the propositions; instead of the Stoic custom of considering only the conjunctions. To the traditional Chrysippian propositions he adds the disjunctive and the not-excluding alternative propositions. His *Introduction* is also one of the earliest sources for the doctrine on equivalence and conversion of compound propositions.

Although his interpretation of Stoic propositions is not strictly formal, Galen's presentation of the hypothetical syllogisms is in accord with the most rigid Stoic formalism. He clearly explains the unfamiliar Stoic terminology pertinent to syllogisms, and he accepts four of the five traditional indemonstrable formulae. These he supplements with the disjunctive and the not-excluding alternative syllogisms. He completes the treatment of the Stoic

syllogism with his extraordinary doctrine on the conversion of hypothetical syllogisms.

Galen's teaching on the logic of propositions is a complete record of the state of Stoic logic in the second century. He not only summarizes the doctrine of the centuries immediately preceding but indicates the direction actually followed by subsequent logicians. His tendency to interpret Stoic Logic according to Peripatetic principles finds its culmination in classical logic. As this tendency so to interpret Stoic logic became more and more pronounced, the logic of the Stoa declined more and more until, having eventually lost its distinctiveness as a branch of dialectics, it was completely absorbed into Peripatetic logic. He proves himself beyond all doubt an independent thinker and not a mere compiler, for the logic of propositions comes from his hands colored by the touch of his originality. The study of this elementary logical treatise makes us strongly desire to know some of more extensive works of Galen, the great logician, who has given us *The Introduction to Dialectic*." (pp. 90-91)

From: James W. Stakelum, *Galen and the Logic of Propositions*, Romae: Angelicum, 1940.

ANCIENT THEORIES OF MEANING

"There were three ancient theories of meaning:

- (1) According to the Peripatetics, words mean thoughts, and thoughts stand for things.
- (2) According to the Epicureans, words directly mean things.
- (3) According to the Stoics, words mean sayables, (1) and sayables stand for things.

The Stoics agree with the Peripatetics and disagree with the Epicureans in maintaining that a semantic theory must be three-tiered. The Stoics disagree with the Peripatetics insofar as the

intermediate items in their three-tiered theory are sayables and not thoughts.

Thus far, mere caricature: each of the theories I have sketched requires further elucidation; and each of the sketches would be regarded as wildly inaccurate by some scholars. I shall not attempt to replace the caricatures by professional portraits; rather, I want to address one particular problem which the caricatures raise. If the Peripatetic and Stoic theories differ insofar as thoughts differ from sayables, then -- we may well wonder -- what exactly is the difference between sayables and thoughts, and how is Stoic saying related to Stoic thinking?

Several scholars, both ancient and modern, have denied that there is any substantive difference between the Peripatetic and the Stoic theories of meaning on the grounds that sayables are simply thoughts under a different name. Thus according to Simplicius, some people held that

the argument in the Categories is about thoughts (*peri noematon*); for Aristotle plainly says that it is about things which are said (*peri ton legomenon*), and things which are said, or sayables, are thoughts, as the Stoics too held. (*in Cat.* 10.2-4 = *FDS* 703) (2)

More recently it has been maintained that a sayable is "that which is merely an expressed thought"; for sayables "exist only insofar as they are thought and expressed in words. As ideas in the mind ... the *lekta* ... should be interpreted ... as something ... akin to the ideas of, for instance, classical British empiricism -- as a kind of mental images which precede and accompany our words and give them meaning" (3)

A weaker thesis has also found favour: sayables are not to be identified with thoughts, but they are logically dependent upon the activity of thinking. For "every species of *lekton* requires the utterance of some expressible object present to the mind. Does this entail that *lekta* only persist as long as the sentences which express them? ... there is no evidence to show that *lekta*, as distinct from the speaker and his reference, persist outside acts of thought and communication". (4)

These theses about sayables and thoughts are not mere conjectures. For there are several ancient texts which associate sayables with thoughts, and these texts have been taken to support either the strong view that sayables actually are thoughts or the weaker view that sayables are parasitic upon thoughts. The issues are complicated, both from a philosophical and from an exegetical point of view. I shall first make a few abstract remarks; then look at the Peripatetic theory of meaning; and finally turn to the texts which associate thoughts with sayables." (pp. 47-48)

Notes

(1) I use the unlovely word "sayable" for the Greek *lekton*. I take it that *lekta* stand to saying as thoughts stand to thinking; but no decent English word stands to "say" as "thought" stands to "think".

(2) Note that Simplicius does not subscribe to this view of *lekta* (pace Long [1971] 80): he ascribes it to unnamed interpreters of Aristotle's *Categories*, and at e.g. in *Cat.* 397.10-12 he implicitly distinguishes *lekta* from *dianoemata*.

(3) Nuchelmans (1973) 52, 55.

(4) Long (1971) 97, 98.

From: Jonathan Barnes, "Meaning, Saying and Thinking", in: Klaus Döring and Theodor Ebert (eds.), *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, Stuttgart: Franz Steiner 1993, pp. 47-61.

THE STOIC CLASSIFICATIONS OF ARGUMENTS

"In Sextus Empiricus' *Outlines of Pyrrhonism* (6) one finds the following Stoic definitions of the expressions 'premises',

'conclusion', and 'argument'

(i) 'premises': the propositions assumed for the establishment of the conclusion,

(ii) 'conclusion': the proposition which is established by the premises (7),

(iii) 'argument': a whole composed of premises and a conclusion.

In terms of these definitions the questions I shall be attempting to answer are: for the Stoics what are the conditions under which the premises in an argument logically imply its conclusion? And, if the premises of an argument in fact imply its conclusion but not evidently so, how according to the Stoics may this relation of logical consequence be made evident? Before dealing with these questions, however, I present several classifications of Stoic arguments (see the outline of these classifications below).

The first division of the first classification of arguments is into valid and invalid arguments. An argument is valid "when the conditional having as its antecedent the conjunction formed from the premises of the argument and as its consequent the conclusion of the argument is true" (*P.H.* ii.137). An example of a valid argument is

(1) If it is day, it is light. It is day.

Therefore it is light.

Arguments which do not satisfy this condition are invalid.

Next valid arguments are divided into those which are true and those which are not true. A true valid argument is one of which both the conclusion and the premises are true (*P.H.* ii.138). An example of a true valid argument is (1) above when set forth during the day. Arguments which do not satisfy this condition are not true. An example of a not-true argument is the following when made during the day:

(2) If it is night, it is dark.

It is night.

Therefore it is dark.

Of true valid arguments some are demonstrative and some are not demonstrative. Demonstrative arguments are "those which conclude something non-evident through pre-evident premises".

(8) An example of a demonstrative true valid argument, preserved by Sextus (*P.H.* ii.140), is

(3) If sweat flows through the surface of the skin, there exist imperceptible pores.

Sweat flows through the surface of the skin.

Therefore there exist imperceptible pores.

An argument not satisfying this condition is not demonstrative.

Argument (1) is an example of an argument which is valid, true when set forth during the day, and not demonstrative. It will be shown subsequently that there was another kind of argument called undemonstrated, which provides an additional important category of arguments. It is not to be confused with a not-demonstrative argument.

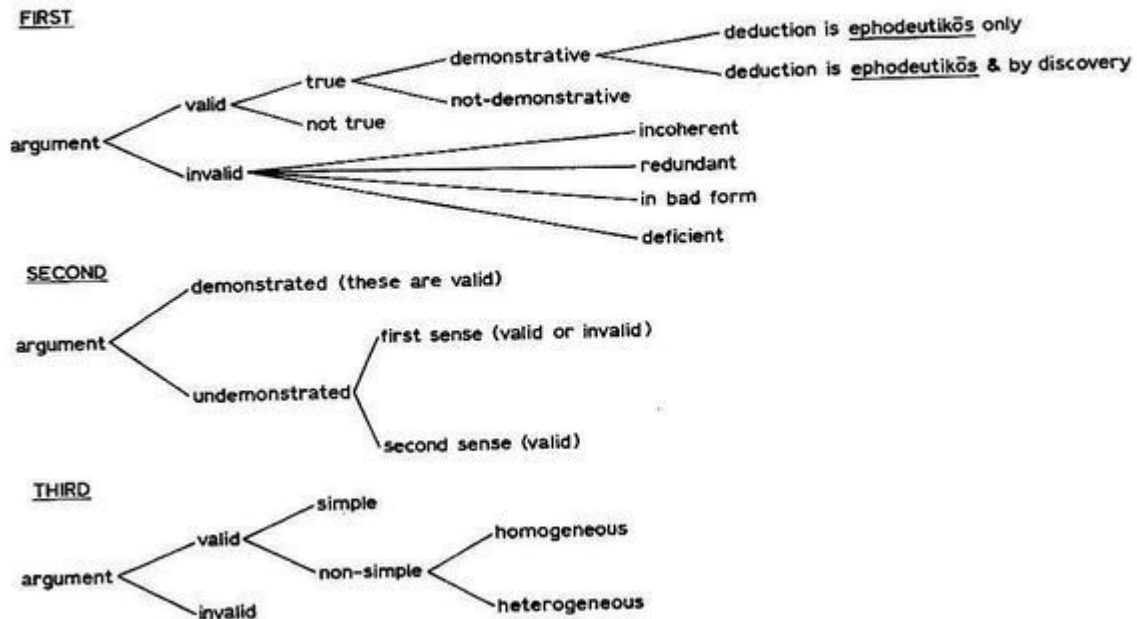
Of demonstrative true valid arguments "some lead us through the premises to the conclusion *ephodeutikos* only" (*P.H.* ii.141). I am not sure precisely what '*ephodeutikos*' means. Etymologically the word suggests 'advancing over a path towards something' and when the expression attaches to the word 'argument' a reasonable candidate for the 'something' would be the conclusion of the argument. But 'advancing over a path towards a conclusion' is a metaphorical description of arguments generally and it fails to bring out what is peculiar to the type of argument to which the label is here attached. I simply transliterate the expression. A kind of this type argument is said to be one which "depends upon belief and memory". One might well ask, 'What kind of argument doesn't?' An example of an argument which depends on belief and memory is

(4) If someone said to you that this man would be wealthy, this man will be wealthy.

This god said to you that this man would be wealthy. Therefore this man will be wealthy.

Sextus' comment on this argument is that we "assent to the conclusion not so much on account of the necessity of the premises as because we believe the assertion of the god" (*P.H.* ii.141-142).

SOME STOIC CLASSIFICATIONS OF ARGUMENTS



Contrasted with this type argument are those which "lead us to the conclusion not only *ephodeutikeis* but also by way of discovery" (*P.H.* ii.142). An example of such an argument is (3). The element of discovery in this argument is the disclosure of the existence of pores through the fact that sweat flows through the surface of the skin. The element of belief in the argument, apparently sufficient to provide the *ephodeutikeis* component, is the "prior assumption that moisture cannot flow through a solid body" (*P.H.* ii.142).

The components of a 'demonstration' may be derived from one component of each division in this first classification, for a demonstration is a valid and true argument having a non-evident conclusion and disclosing that conclusion by the power of the premises (*P.H.* ii.143). I am uncertain as to the point of the last clause in Sextus' report. It appears to imply that the conclusion is

obtained without the aid of assumptions external to the premises of the argument, although this would involve the existence of a class of demonstrative arguments different from those which are *ephodeutikeis*.

A second Stoic classification of arguments is also reported by Sextus, and it, too, ought to be kept in mind when thinking about deduction in Stoic logic. This classification begins from a division of arguments into demonstrated and undemonstrated. I take a demonstrated argument in this context to be one whose validity has been made evident. I say more subsequently about how the validity of arguments is made evident. An argument is undemonstrated in one of two senses. The first sense is the contradictory of that of 'demonstrated'. In this sense, then, an argument is undemonstrated if it has not been demonstrated (*Adv. Math.* viii.223), i.e., on my interpretation, if it has not been shown to be valid. In a second sense an argument is undemonstrated if it is immediately evident that it is valid (*ibid.*). This distinction may be brought out by noticing that the first sense is temporal inasmuch as an argument which is undemonstrated in that sense in 100 B.C. may be demonstrated in 50 B.C., while the second sense is non-temporal.(9) An argument is undemonstrated in this second sense if it exhibits one of five forms of argument which are referred to respectively as the first undemonstrated, the second undemonstrated, etc. These forms are also called inference schemata, and I have more to say about them below. For now I merely give the forms with illustrative examples (Gould, *The Philosophy of Chrysippus*, pp. 83-85):

The first undemonstrated

(5) If the first, the second.

The first.

Therefore the second.

If it is day, there is light.

It is day.

Therefore there is light.
The second undemonstrated
(6) If the first, the second.
Not the second.
Therefore not the first.

 If it is day, there is light.
There is not light.
Therefore it is not day.
The third undemonstrated
(7) Not both the first and the second.
The first.
Therefore not the second.

 Not both it is day and it is night.
It is day.
Therefore it is not night.

The fourth undemonstrated
(8) Either the first or the second.
The first.
Therefore not the second.

 Either it is day or it is night.
It is day.
Therefore it is not night.

The fifth undemonstrated
(9) Either the first or the second.
Not the first.
Therefore the second.

 Either it is day or it is night.
It is not day.
Therefore it is night.

A third classification divides valid arguments first into simple and non-simple (*Adv. Math.* viii.228). A simple valid argument is one having the form of one of the five undemonstrated argument

forms. A non-simple valid argument is one 'woven together' out of simple valid arguments in order that it may be known to be 'valid' (*Adv. Math.* viii.229). There are two kinds of non-simple arguments, one formed from two or more simple arguments all of the same form, and the other composed from two or more simple arguments not of the same form. The former is a homogeneous non-simple and the latter, a heterogeneous non-simple argument (*ibid.*). An example of a homogeneous non-simple argument is (10) If it is day, then if it is day it is light.

It is day.

Therefore it is light.

For upon analysis it may be seen to have been compounded from two simple arguments having the form of the first undemonstrated. Analysis of this argument is carried out in accordance with the following 'dialectical theorem' :

(11) Whenever we have premises from which a certain conclusion can be validly deduced, potentially we have also that conclusion among the premises, even if it is not stated explicitly.(10)

One analyzes (10) by drawing the conclusion from the first two premises in accordance with the first undemonstrated inference schema, thus getting

(12) If it is day, then if it is day it is light.

It is day.

Therefore if it is day, it is light.

Then by the theorem stated in (11) one gets as premises

(13) If it is day, then if it is day it is light.

It is day.

If it is day, it is light.

And by another application of the first inference schema one gets the conclusion in (10)." (pp. 152-157)

Notes

(6) ii.135-136. This work will be referred to in the remainder of the paper as *P.H.*

(7) Thomas has rightly pointed out that the intent here must have been something like "the proposition which is allegedly established by the premises". Otherwise every conclusion would be the conclusion of a valid argument.

(8) *P.H.* ii.140. Sextus reports (*P.H.* ii.97-98) that the 'dogmatists' distinguished three kinds of non-evident objects. Some are absolutely non-evident; these are those which are not of the sort to fall under our apprehension, e.g., that the stars are even in number. Some are on occasion non-evident; these are of a sort to be evident but are made non-evident on occasion by external circumstances, e.g., as a city in which I am not present now is to me. Finally, some are naturally non-evident; these are naturally incapable of falling under our clear apprehension, e.g., that there are imperceptible pores.

(9) I am indebted to John Corcoran for having suggested to me this feature of the distinction.

(10) *Adv. Math.* viii.231. I discuss this theorem below (p. 18) in conjunction with other Stoic rules of inference.

From: Joseph Gould, "Deduction in Stoic Logic", in: John Corcoran (ed.), *Ancient Logic and Its Modern Interpretations. Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972.*, Dordrecht: Reidel 1974, pp. 151-168.



[History of Logic from Aristotle to Gödel](#)

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The Stoic Doctrine of *Lekta* (Sayables)

THE PLACE OF THE DOCTRINE OF LEKTA IN THE STOIC DIALECTIC

SVF = Hans von Arnim, *Stoicorum Veterum Fragmenta*, Lipsia 1903-1905 (the standard collection of the Fragments of ancient Stoics).

"In moving from the theory of knowledge to the other topics which the Stoics include within the third branch of their philosophy, it must be noted that they draw a sharp distinction between logic and language. All the remaining topics can be grouped either on one side of this distinction or the other. The Stoics define language as utterance. Language is sound. It is corporeal, material, and sensible. (135) Hence, language is part of the world of real being. Words, real beings themselves, are natural signs of natural objects. Logic, on the other hand, falls within the category of the incorporeals. Logical statements are *lekta*. (136) They have meaning, but since they are not corporeal, they do not have full being. They exist only intramentally. The *lekta* include predicates, arguments, syllogisms, and fallacies. They are not natural signs of natural objects.

This classification of logical statements as *lekta* has important implications for the way in which the Stoics handle dialectic, or

logic as a formal branch of philosophical investigation.(137) Their logic is propositional. The variables in Stoic syllogisms are propositions, in contrast to the variables in Aristotelian syllogisms, which tend to be terms and classes. The Stoics are sensitive to the grammatical precision of their logical propositions; they elaborate a more precise way of expressing negation than had been used hitherto, prefixing a negative word to the entire proposition and not just to the verb. Thus, instead of saying "It is not day," they say "Not: it is day." While less idiomatic, this is a more unambiguous way of specifying what is being negated, similar to the usage "Not-p" in modern symbolic logic. Indeed, the technical ingenuity of Stoic logic is considerable, resulting in a number of ideas which had been neglected in Aristotle's logic.

Since *lekta* are not natural signs of natural objects, the Stoic preference in logic is for hypothetical syllogisms.(138) Unlike the categorical, deductive, or inductive syllogisms used by Aristotle, the hypothetical syllogism does not begin with an axiomatic statement about a general class of beings, nor does it conclude with a statement about the fixed, essential nature of things. For the Stoics, such a procedure would have been in conflict with a propositional logic whose aim is to demonstrate the logical tenability of the conclusions of one's premises, not their empirical or ontological verifiability. At the same time, and although they are *lekta*, the Stoics' hypothetical syllogisms are compatible with the physics which they espoused, for their syllogisms deal with the changing relations between concrete individual events rather than with a changeless structure of fixed essences.(139) The five main types of syllogisms used by the Stoics may be schematized as follows:

Conditional: "If it is light, it is day."

Conjunctive: "It is light and it is day."

Disjunctive: "Either it is light or it is day."

Causal: "It is light because it is day."

Likely: "It is more likely that it is day than that it is night."

In all cases both the initial premises and whatever conclusions may follow from them refer to transient events. Having demonstrated a proposition by means of these syllogisms, one has still not claimed to have said anything about an enduring natural phenomenon. This is a perfectly reasonable choice for the Stoics given both their physics of dynamic events and their conception of the *lekta*." (pp. 53-55)

Notes

(135) *SVF*, 1, 74; 2, 140-41, 144a.

(136) See the references cited in note 35 above; Diogenes Laertius, *Lives* 7. 63-81.

(137) The traditional view of Stoic logic, treating it as beneath consideration because of its departures from Aristotelian logic, is stated clearly by Carl Prantl, *Geschichte der Logik im Abendlande* (Leipzig, 1927), 1, 401-96. It has been superseded by a positive reinterpretation of Stoic logic, marked by two trends. One understands Stoic logic and its differences from Aristotelian logic in the light of its connections with the rest of the Stoic system. The most important studies in this area are Urs Egli, *Zur stoischen Dialektik* (Basel, 1967), pp. 93-104; Michael Frede, *Die stoische Logik*, Abhandlungen der Akademie der Wissenschaften in Göttingen, philosophisch-historische Klasse, 3:88 (Göttingen, 1974); and Virieux-Reymond, *La logique et l'épistimologie des Stoïciens*. See also Bréhier, *Hellenistic and Roman Age*, pp. 41 fr.; V. Brochard, *Études de philosophie ancienne et de philosophie moderne*, nouv. ed. I Paris, 1926), pp. 220-51; Carlo Diano, *Forma ed evento: Principii per una interpretazione del mondo greco* (Venezia, 1952), pp. 9-20; Edelstein, *Meaning of Stoicism*, pp. 27-29; Goldschmidt, *Le système stoïcien*, pp. 82-83; Josiah 13. Gould, "Chrysippus: On the Criteria for the Truth of a Conditional Proposition," *Phronesis*, 12 (1967), 152-61; *Chrysippus*, pp. 66-88; Charles H. Kahn, "Stoic Logic and Stoic Logos," *Archiv für Geschichte der Philosophie*, 51 (1969), 158-72; Lorenzo Pozzi, "Il nesso di implicazione nella logica stoica," *Atti*

del convegno di storia della logica, Parma, 8-10 ottobre 1972 (Padova, 1974), pp. 177-87; Giulio Preti, "Sulla dottrina del *semeion* nella logica stoica," *Rivista critica di storia della filosofia*, 2 (1956), 5-14; Reymond, "La logique stoïcienne," *Revue de Théologie et de Philosophie*, n.s. 17 (1929), 161-71; Carlo Augusto Viano, "La dialettica stoica," *Rivista di filosofia*, 49 (1958), 179-227; Antoinette Virieux-Reymond, "Le 'sunemmenon' stoïcien et la notion de la loi scientifique," *Studia Philosophica*, 9 (1949), 162-69.

The second group consists of scholars primarily interested in modern logic, who have rediscovered Stoic logic because of the affinities they perceive between it and the school of Carnap and Frege. The essay which began this movement is Jan Łukasiewicz, "Zur Geschichte der Aussagenlogik," *Erkenntnis*, 5 (1935), 111-31. The most important technical treatment of Stoic logic within this or any other perspective is Benson Mates, *Stoic Logic* (Berkeley, 1953). See also Nimio de Anquin, "Sobre la logica de los Estoicos," *Sapientia*, 11 (1956), 166-72; Oskar Becker, *Zwei Untersuchungen zur antiken Logik* (Wiesbaden, 1957); I. M. Bochenski, *Ancient Formal Logic* (Amsterdam, 1951), pp. 77-102; William Kneale and Martha Kneale, *The Development of Logic* (Oxford, 1962), pp. 113-76; Leo Lugarini, "L'orizzonte linguistico del sapere in Aristotele e la sua trasformazione stoica," *Il Pensiero*, 8 (1963), 327-51; Jürgen Mau, "Stoische Logik. Ihre Stellung gegenüber der aristotelischen Syllogistik und dem modernen Aussagekalkül," *Hermes*, 85 (1957), 147-58; Mario Mignucci, *Il significato della logica stoica*, 2a ed. (Bologna, 1967); Jan Mueller, "An Introduction to Stoic Logic," in *The Stoics*, ed. Rist, pp. 1-26.

(138) *SVF*, 2, 182, 207-08, 213, 215, 241-42, 245.

(139) For the parallels in physics see *SVF*, 2, 13, 114, 395-97. Good analyses of this point can be found in Jacques Brunschwig, "Le modèle conjonctif," *Les Stoiciens et leur logique*, Actes du Colloque de Chantilly, 18-22 septembre 1976 (Paris, 1978), pp. 61-65; Edelstein, *Meaning of Stoicism*, pp. 27-29; Michael Frede, "Stoic vs. Aristotelian Syllogistic," *Archiv für Geschichte der*

Philosophie, 56 (1974), 1-32; Goldschmidt, *Le système stoïcien*, pp. 82-83; Gould, "Chrysippus," *Phronesis*, 12 (1967), 152-61; Chrysippus, pp. 66-88; A. A. Long, "Dialectic and the Stoic Sage," in *The Stoics*, ed. Rist, pp. 101-24; Virieux-Reymond, "Le 'sunemménon' stoïcien," *Studia Philosophica*, 9 (1949), 162-69. William H. Hay, "Stoic Use of Logic," *Archiv für Geschichte der Philosophie*, 51 (1969), 145-57 argues unconvincingly that the Stoic syllogisms also reflect an interest in abstract subjects and universal conclusions.

(140) *SVF*, 2, 368-75. On the other hand, Andreas Graeser, "The Stoic Categories," *Les stoiciens et leur logique*, pp. 199-221; "The Stoic Theory of Meaning," in *The Stoics*, ed. Rist, p. 78 sees the categories as linguistic expressions signifying syntactical classifications.

(141) *SVF*, I, 91.

From: Marcia L. Colish, *The Stoic Tradition from Antiquity to the Early Middle Ages. I. Stoicism in Classical Latin Literature*, Leiden: Brill 1985.

THE LEKTON AS WHAT IS SAID OR PREDICATED OF SOMETHING

"4.1.1 According to *SVF* 1, 89, Zeno of Citium, the founder of the Stoic school, made a distinction between a cause, which is a body or *soma*, and that of which it is the cause, which is called *symbebekos*, consequence, or *kategorerna*, predicate. Stobaeus, who gives this information, cites as examples of causes or bodies practical wisdom (*phronesis*), the principle of life (*psyche*), and self-control (*sophrosyne*); and as examples of what is caused by these bodies being wise (*phronein*), living (*zen*), and being temperate (*sophronein*). For the Stoics a body or *soma* is everything that acts or undergoes action (*SVF* II, 336, 340). What

is done or undergone by such agents or patients, the action or passion, is a *kategorema*, which in contrast with the somatic agents or patients is characterized as asomatic (*asomaton*) Sextus *M IX*, 211) gives the following examples. The lancet and the flesh are bodies; the lancet is the cause of an asomatic *kategorema*, namely being cut, with respect to the flesh. Fire and wood are bodies; the fire is the cause of an asomatic *kategorema*, namely being burnt, with respect to the wood. Further examples can be found in *SVF II*, 349, where it is also added that the flesh is the cause of the cutting with respect to the lancet.

The verbal character of that which is caused was stressed by the Stoics against those who maintained that it could be indicated by nominal expressions (*SE, PH III*, 14). If the sun or the sun's heat makes the wax melt, we have to say that the sun is the cause, not of the melting of the wax (*tes chyseos*), but of the wax being melted, of a *kategorema* which is indicated by an infinitive (*tou cheisthai*). Clement of Alexandria (*SVF III*, 8, p. 263) even makes an explicit distinction, in a somewhat similar context, between 'is cut' (*temnetai*), which is the actual *kategorema*, and the infinitive 'to be cut', which is the name (*ptiptosis*) of the *katkategoroma*."

pp. 45-46

(...)

"The strongest proof that the term *lekton* was used to designate that which is said or predicated of something, as a synonym of *kategorema* and in the typical frame of the Stoic theory of predication, is the fact that it is so often qualified by the attribute *asomaton*. In many contexts one can make sense of this characterization only by taking *lekton* as standing for the action or passion, the *pragma* which is signified by the verb, in contrast with the *somata* which perform or undergo the action. It is therefore time to try to throw more light upon the ontological and psychological aspects of that which the Stoics called *asomaton*.

4.1.5. As for the ontological aspects, I shall confine myself to a rough outline; for details and controversial points I refer to Bréhier (1962), Goldschmidt (1969), Hadot (1968 and 1969), and Rist (1969). At the top of the Stoics' ontological hierarchy we find

the *ti*. These somethings are divided into the *on* and the *me on*, the sphere of the existent and the sphere of the non-existent. To the *on* belong the *somata*, the things that can perform or undergo actions. In terms of the Stoic categories a soma is composed of *hyle*, matter, and *poiotes*, determining quality. To the *me on* belong the void, place, time, and the *lekta*. These four *asomata* do not have an independent existence of their own; they are only thought and said. A *lekton*, as we have seen, belongs to a *soma* (*hyparchein*) when the *soma* actually performs or undergoes the action concerned, but in itself it does not have the same kind of existence as a *soma* has. What is predicated of a *soma* is an event that occurs at the periphery of the domain in which bodies act and are acted upon; the actuality of the event entirely derives from the body by which it is caused. In terms of the Stoic categories the *lekton* has to be associated with the *pos echon*, the ways of behaving of a body, and the *pros ti pa's echon*, its ways of behaving in relation to something else.

4.1.6. Turning now to the psychological side of the aromatic *lekton*, I first call attention to a passage (DL VII, 51) in which two divisions of presentations (*phantasiai*) are mentioned. One is into those of living beings possessed of reason and speech (*logikai*) and those of living beings that are deprived of these faculties (*alogoi*). The presentations of the first group are also called *noeseis*, in a broad sense of that word (Cf. SVF II, 89). The second division divides presentations into those of sense-perception (*aisthetikai*) and those of thought in the narrower sense (*dia tes dianoias*). To the latter group belong the presentations of *asomata* and of the other things that are apprehended only by means of the *logos*. Parallel to this second division into presentations of sense-perception and presentations of thought we often find a distinction between *periptosis* and *metabasis*: between direct acquaintance by means of the senses (for instance, with something white or black, sweet or bitter) and the formation of ideas, which consists in a kind of transition from sense-perception to something else. The *metabasis* is characteristic of man (SE, AM VIII, 276, 288; Epictetus,

Dissertationes I, 6, 10). This creative power of the human mind amounts, however, to no more than the faculty of compounding, transposing, augmenting, or diminishing the materials afforded us by the senses; it is impossible to find in thought anything which one does not possess as known by experience (SE, AM VIII, 58, 60). Sextus gives the following examples of *metabasis* (AM I, 25, III, 40, VIII, 59, IX, 393, XI, 250). Because of a likeness of Socrates, which has been seen, we conceive of Socrates, who has not been seen. Starting from the common man we move on to a conception of a giant. By decreasing the size of the common man we grasp a conception of a pygmy. By way of composition we derive from man and horse the conception of a thing we have never perceived, a centaur. DL VII, 52-53, gives a more extensive list of possibilities. The queer thing is that he contrasts *periptosis* not with *metabasis* generally, but with such species of *metabasis* (in Sextus's sense) as resemblance, analogy, transposition, composition, and opposition. *Metabasis* occurs as one of the species: some ideas are formed by transition, for instance *lekta* and place, both *asomata*. This may be just a mistake; or the word *metabasis* may have been used by some in a generic sense and by others in a more special sense, without much further difference of meaning.

Now the *lekton* was defined as that which exists *kata logiken phantasia*, by way of a presentation which is typical of a living being possessed of reason and speech (DL VII, 63; SE, AM VIII, 70). Sextus adds that a *logike phantasia* is a presentation in which it is possible to set the thing presented before the mind by means of speech (*logos*). This can be connected with what DL, VII, 49, says: first comes the presentation and then follows thought (*dianoia*), which is capable of expressing things in speech (*eklaetike*) and expresses that which it undergoes by the influence of the presentation, by means of an utterance. From elsewhere (*SVF II*, 236) we know that the Stoics called the *noemata* by the name of *ekphorika*, things capable of being expressed in words.

The view that the thinking faculty is capable of forming, on the basis of the materials offered by sense-perception, new presentations which are arrived at by a process of *metabasis* and exist only in so far as they are thought and expressed in words, was illustrated by means of the following simile (SE, AM VII, 409). A trainer or drill-sergeant who is teaching a boy rhythm and how to make certain motions sometimes takes hold of the boy's hands and at other times stands at a distance and offers himself as a model for the boy's imitations, by making certain rhythmical motions. In the same way some of the objects presented produce the impression in the soul as it were by touching and contact with it (such as white and black and *somata* generally), whereas others are not of this nature, since in their case the principal part of the soul has presentations which are not caused by them but are formed on the occasion of their occurrence (*tou hegemonikou ep'autois phantasioumenou kai ouch hyp'auton*), as is the case with asomatic *lekta*. Sextus cites this simile in connection with the question of how presentations of asomatic *lekta* are possible. Since *an asomaton* neither effects nor suffers anything, it cannot produce presentations in the soul. The Stoics apparently solved this problem by pointing out that just as the boy makes both movements which are caused by the trainer and spontaneous movements, so the soul has both presentations that are caused by *somata* and spontaneous presentations -- for instance, of *lekta*. The *lekta* do not cause their presentations, but those presentations are produced by the soul itself, although this spontaneous production is limited to certain operations on the impressions of sense-perception. That *lekta* are merely thought and that nothing directly corresponds to them in the world of existing *somata* is confirmed by SVF II, 521. The Stoics considered time and *asomata* generally as existing only in thought, without the reality of bodies which consists in causal activity. It looks as if this were contradicted by a passage in Plutarch (*De communibus notitiis contra Stoicos* 1084 c), where such activities as walking and dancing (*ton peripaton, ten orchesin*) are counted among the *somata*. This can be

connected with what Seneca (*Epistula* 113, 23; *SVF* II, 836) tells us about a controversy between Cleanthes and Chrysippus concerning the nature of walking (*ambulatio*). Cleanthes contended that it is *pneuma* which has been sent down from the principal part of the soul into the feet; Chrysippus maintained that it is the principal part of the soul itself (*a soma*). To solve the apparent contradiction we probably have to distinguish between the *Om* as far as it is in a certain state or is disposed in a certain way (*pos echon*) and that state itself, considered on its own. If the action or passion is regarded as realized in *a soma*, it is, as it were, an aspect of that *soma*. This point of view was strongly emphasized by Chrysippus, here and elsewhere. But if the action or passion is contrasted with the *soma*, as that which is caused or undergone by it, it is seen to have a status of its own; from this point of view it is something asomatic and a mere product of thought.

4.1.7. It may be concluded, I think, that at least one of the ways in which the word *lekton* was used by Stoic philosophers was to designate that which is said or predicated of something. The *lekton* or *kategorema* is an asomatic *pragma*, an action or passion which is performed or undergone by a *soma*. From an ontological point of view the *lekton-kategorema-pragma* is totally different from the *soma*. *Somata* are the real things which are characterized by their capacity of acting and being acted upon. The actions or passions themselves are merely thought and expressed in words; they are presentations which are spontaneously formed by a transition from sense-experience and made known by spoken sounds, without having a direct counterpart in somatic reality. Given this ontological and psychological peculiarity of the *lekton*, it is not unlikely that almost from the beginning the word *lekton* could also be taken as referring to that which is only (thought and) said. If the *lekton* as such does not really exist and is nothing but a spontaneous product of thought, it is quite natural to see it not only as that which is said of a *soma*, but also as that which is merely an expressed thought, only something said." (pp. 51-55)

From: Gabriel Nuchelmans, *Theories of Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Amsterdam: North-Holland 1973.



[History of Logic from Aristotle to Gödel](#)

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Ancient Stoicism: The Editions of Fragments and *Testimonia*

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Introduction: The dialectic in the context of the Stoic
philosophy (Fragments No. 1-254) 2; 1.1 Philosophy and its
division in Logic, Ethics, Physics (No. 1-32a) 2; 1.2
Exclusion and further determination of Dialectic (Nos. 33-

98). 40; 1.3 On the origin, development and reception of Stoic dialectic (No. 99-254) 102; 2. Theory of Knowledge (Epistemology) (No. 255-473) 248; 2.1 Unity and diversity of representations (ideas) (No. 259-281) 260; 2.2 On sensory perception and on the Concept (No. 282-321). 296; 2.3 The criteria of truth (No. 322-362) 332; 2.4 Assent, knowledge and science (No. 363-419) 392; 2.5 Digression: On the Soul (No. 420-456) 454; 2.6 Theoretical Sciences (No. 457-473) 486; 3. About the linguistic sign (No. 474-680) 516; 3.1 Successive determination of the speech according to the sound (No. 476-535) 520; 3.2 The parts of speech (word classes) (No. 536-593) 592; 3.3 Advantages and faults of speech. Poetics (No. 594-620) 672; 3.4 Linguistic characters in relation to their meaning (No. 621-680) 714; 4. About the meanings (No. 681-1257) 790; 4.1 Terminology (No. 681-694) 790; 4.2 The Lekta (sayable) in general. The incomplete Lekta and the categories (No. 695-873) 806; 4.3 The full Lekta (no. 874-913) 1086; 4.4 The classifications of the statement (No. 914-1035) 1140; 4.5 The theory of argument (No. 1036-1198a) 1364; 4.6 The fallacies (no. 1199-1257) 1690; Indexes I-VIII 1787.

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"Il presente lavoro tenta una ricostruzione sintetica della logica stoica considerata nei suoi rapporti storici e nella sua cornice sistematica: non è pertanto una interpretazione della logica stoica nella prospettiva della logica moderna né propriamente una esposizione di un momento della storia della logica, bensì intenderebbe presentare un momento della storia della filosofia.

In particolare, esso nasce da un decennale contatto con tutte le fonti antiche relative alla logica stoica e vuole introdurre alla lettura di tali fonti. I testi di Crisippo, di Diogene Laerzio, di Sesto Empirico, dei commentatori di Aristotele (innanzitutto di Alessandro di Afrodisia), di Cicerone, degli scrittori del sec. II d.C. che ci informano sulla logica stoica (innanzitutto di Galeno) sono stati raccolti, ordinati per autore e vagliati, nonché tradotti e commentati; sono state anche raccolte e ordinate secondo il contenuto secondo il quale si sviluppa l'esposizione nel presente lavoro le testimonianze che si trovano sparse nei più vari autori (anche negli autori che si potrebbero ritenere scarsamente significativi), e sono state anch'esse tradotte e commentate." (Dalla Prefazione al primo volume).

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Contents: Acknowledgments VI; Abbreviations VII; Introduction IX; Chronological table XXXI; Further reading XXXII; Note on the text and translation XXXV; Outline of argument XXXVIII; Against the Logicians 1. Book 1 3; Book 2 90; Glossary 184; Parallels between *Against the Logicians*

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Table des matières.
Tome I: Remerciements IX; Avant-propos XI; Introduction XV; Avertissement LIII; Sur la vie de Chrysippe et témoignages sur ses écrits, n. 1-31 p. 1; Prolégomènes à la philosophie, n. 32-42 p. 43;
PREMIÈRE PARTIE. LA LOGIQUE (n. 43-51) p. 57.
Chapitre I. La doctrine de la connaissance (n. 52-112) p. 69;
Chapitre II. La dialectique (n. 113-295) p. 141; Chapitre III. La Rhétorique (n. 296-306) p. 391;

DEUXIÈME PARTIE: LA PHYSIQUE p. 401.

Chapitre I. Les doctrines fondamentales de la physique (n. 307-535) p. 403;

Liste des ouvrages de Chrysippe 661; Glossaire 665;

Chronologie des écoles philosophiques 673; Bibliographie 675-685.

Tome II: Chapitre II. sur le monde (n. 536-647) p. 9;

Chapitre III. Des corps célestes et des phénomènes

atmosphériques (n. 648-707) p. 109; Chapitre IV: Des

animaux et des plantes (n. 708-772) p. 157; Chapitre V. De

l'âme humaine (n. 773-913) p. 206; Chapitre VI. Sur le

destin (n. 914-1014) p. 355; Chapitre VII. Sur la nature des

dieux (n. 1015-1110) p. 485; Chapitre VIII. Sur la providence

et la nature artiste (n. 1111-1166) p. 567; Chapitre IX. Sur la

divination (n. 1167-1195) p. 621; Repères chronologiques des

citateurs 649; Bibliographie des citateurs 651; Index des

notions 671; Index des passages cités 679; Index des

personnages 705; Concordances: ce recueil-Long & Sedley

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Conjunctions; and 188. *Dialectic: definition*; 189. *Rhetoric,*

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Vol. III.

STOIC LEXICON

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What has been selected are important contributions to the Stoic tradition as theory and practice. This literature is concentrated in a half dozen modern European languages accessible to English language scholars, and is largely confined to the twentieth century.

A generous sense of what is philosophical has been employed; works that are exclusively historical, philological, or literary have been excluded. The following forms of scholarship were generally ignored:

(a) primary sources, translations, and commentaries, (b) encyclopedia and dictionary entries, (c) dissertations, (d) book reviews, and (e) standard histories.

Several oddities should be noted. All serials titled by a single term (e.g. *Phronesis*) will be fully cited, whereas multi-term serials (e.g. *Classical Quarterly*) are abbreviated according to *L'Annee Philologique*, and listed here with other serials on pages 126-131. Since rules of capitalization are varied, I have favored a minimalist approach, and when the work of a single author is collected (e.g. Max Pohlenz's *Kleine Schriften*), a single citation replaces the separate citations contained therein. Indexes of key English and selected Greek subjects complete user access to this bibliography, and regrettably indexes to Latin terms and the primary literature could not be included." (From the Preface by R. H. Epp).

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- Zenons (II). Kleanthes und Sphairon 566; 37. Chrysippus Soloi 584; 38. Schüler und Nachfolger Chrysipps 626; 39. Panaitios aus Rhodos und seine Schüler 646; 40. Poseidonios aus Apameia 670; 41. Die Stoa in der Mitte und zweiten Hälfte des 1. Jahrhunderts von Christus 706-716.
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Première édition 1978; deuxième édition, revue, augmentée et mise à jour (reproduit la pagination de l'édition originale).
"Nous n'avons pas reproduit dans ce volume la bibliographie de la première édition, qui aurait rendu celle-ci pléthorique; nous avons donc laissé à leur place, et sous leur forme initiale, toutes les références antérieures à 1976, *telles qu'elles se trouvent dans le texte et dans les notes des articles eux-mêmes*. En revanche, nous regroupons ici, par ordre alphabétique des noms des auteurs, les références complètes des études qui ont été mentionnées, sous forme abrégée, dans les compléments apportés aux textes et aux notes par les auteurs et réviseurs de la présente deuxième édition; nous y ajoutons quelques publications récentes particulièrement marquantes. On ne trouvera donc dans ce qui suit, sauf exceptions justifiées par leur importance, que des titres publiés depuis 1976."

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Contents: Preface IX-XI; Chapter One: The Decline of Logic 1; Chapter Two: Seneca 12; Chapter Three: Epictetus 24; Chapter Four: Conclusion 126; Appendix: Epictetus, diss I vii 129; Bibliography 147; Indexes: Passages 155; Persons 159; Topics 162-165.

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"Were Aristotle's logical writings known to the early Stoic logicians, and did Aristotle's logical ideas have any influence on the development of Stoic logic? The evidence which bears on this question is perplexing: there are numerous pertinent texts which favour an affirmative answer; yet as we approach them they seem, like so many will-o'-the-wisps, to retreat -- and we are stumbling in a treacherous marsh. But the question is not without its fascination, in as much as it concerns the historical relations between two magnificent monuments to Greek philosophical acumen; and it may stand some discussion. Section I presents some general ruminations. Section II deals with the preliminary question of whether the Stoics could in principle have read Aristotle. Section III assembles a sample of the evidence which suggests that the Stoics did in fact read and study their Aristotle. And the remaining sections try to assess the value of this evidence.
The question is a historical one, and it invites consideration of a certain type of historical explanation. It is not merely a matter of whether the Stoics were aware of the Peripatetic achievement in logic: it is a matter of whether this awareness influenced their own logical thoughts and caused them to think in this way rather than in that." (p. 23)
16. ———. 2005. "What Is a Disjunction?" In *Language and Learning: Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 274-298. Cambridge: Cambridge University Press.
"That the Stoics were the instigators of the emphasis put on linguistic observations in ancient philosophy is uncontested. To what degree they are rightly accused of paying more

attention to expressions rather than to things is quite another matter, despite the fact that this reproach was voiced repeatedly in antiquity by authorities such as Galen and Alexander of Aphrodisias and has lasted through the nineteenth century AD. If the Stoics have enjoyed a better press since the twentieth century it is because they were taken to be logicians for logic's sake, committed formalists who stopped just short of inventing the appropriate type of artificial language. That this picture needs revision is argued by Jonathan Barnes (What is a disjunction?') in a painstaking investigation of the treatment of connectives in Apollonius Dyscolus' essay with that title and Galen's *Institutio logica*. Barnes shows that Apollonius' text is coherent and thereby undermines a long-standing prejudice about the Stoic impact on the development of traditional grammar: contrary to what has been assumed (via an unwarranted textual emendation in a crucial passage of Apollonius Dyscolus) Apollonius does not criticise the Stoics' meddling with grammar, but rather their insufficient interest in some of its finer points. Far from adopting a purely formalistic stance, the Stoics distinguished between natural and non-natural disjunctions and colligations. They used these considerations not only to distinguish between natural and occasional disjunctions, but also between grammatical and semantical nonsense. Since no other text besides Apollonius' attributes the conception of 'natural disjunctions' to the Stoics it is a question whether it actually is of Stoic origin rather than derived from the Peripatetics or an invention by certain grammarians. As Barnes shows, the interconnections and boundaries between natural language and formal logic did not only play a crucial role in the treatment of disjunctions by Apollonius Dyscolus. They are also the basis of Galen's criticism of Stoic logic on the differentiation between complete and incomplete conflict and implication, whose intent was to show what is and what is not a legitimate use of conjunctions. If that distinction is

at stake, then Galen's view on disjunctions and conjunctions turns out to be coherent, despite initial appearances to the contrary. The differing parties accused each other of not having paid sufficient attention to the pragmata; however, their complaint is not that the facts in the world have been ignored, but rather that the meaning of the terms has not received sufficient attention." From the *Introduction* by Dorothea Frede and Brad Inwood (pp. 11-12).

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Inhaltsverzeichnis: Einleitung 4;
I. Der Axioma-Begriff der Stoiker 11;
1. Die stoische Definition des Axioma-Begriffes 11; 2. Vorläufige Bestimmung der Wahrheitskriterien des stoischen Axioms 14; 3. Der gleiche Satz bezeichnet verschiedene Axiomata: das definite Axioma 17; 4. Axiomata vergehen 18; 5. Axiomata, die ihren Wahrheitswert wechseln: meta - piptonta 21; 6. Das Bestehen des dem

Axioma korrespondierenden Sachverhalts wird durch das Axiome je nur für den Zeitpunkt der Behauptung dieses Axioma behauptet 23; 7. Zeitbezogene Axiomata 26; 8. Wahrheitsbedingungen der zeitbezogenen Axiomata 28; 9. Wahrheitswertwechsel der zeitbezogenen Axiomata 26; 9. Axiomata mit Pseudodaten 31; 11. Nichtzeitbezogene Axiomata 34; 12. Zusammenfassung 36;

II. Die stoische Modallogik 40;

1. Die Definitionen der stoischen Modalbegriffe 40; a) Interpretation und Rekonstruktionsversuche vor Frede 40; b) Fredes Rekonstruktion der stoischen Modalbegriffe 45;

2. Korrelation der stoischen Axioma- und Sachverhaltsmodi 50; 3. Die Sachverhaltsmodi und ihre überlieferten Bestimmungen 51;

4. Kontingente Axiomata und Sachverhalte 56; 5. Der Ausdruck 'epidektikon aletés / pseudos einai 60; 6. Die Modalitäten der nichtzeitbezogenen Axiomata 63; 7. Der Ausdruck 'äussere Umstände hindern...' 67; 8. Die Modalitäten der zeitbezogenen Axiomata 72; a) Die Modalitäten der Axiomata über die Gegenwart 73; b) Die Modalitäten der Axiomata über die Vergangenheit 76; c) Die Modalitäten der Axiomata über die Zukunft 91; 9. Zusammenfassung und Schlussfolgerung bzgl. der Art der Modalitäten der zeitbezogenen Axiomata 98; 10. Modalitätenwechsel 103; 11. Aus Möglichem folgt Unmögliches 105; 12. Die Rekonstruktion des stoischen Modalsystems von Mignucci und Vuillemin 113; 13. Zusammenfassung 118; Anmerkungen 121; Symbol- und Abkürzungsverzeichnis 142; Literaturverzeichnis 143-147.

English Abstract: "Part I discusses the Stoic notion of propositions (assertibles, axiomata): their definition; their truth-criteria; the relation between sentence and proposition; propositions that perish; propositions that change their truth-value; the temporal dependency of propositions; the temporal dependency of the Stoic notion of truth; pseudo-dates in propositions. Part II discusses

Stoic modal logic: the Stoic definitions of their modal notions (possibility, impossibility, necessity, non-necessity); the logical relations between the modalities; modalities as properties of propositions; contingent propositions; the relation between the Stoic modal notions and those of Diodorus Cronus and Philo of Megara; the role of 'external hindrances' for the modalities; the temporal dependency of the modalities; propositions that change their modalities; the principle that something possible can follow from something impossible; the interpretations of the Stoic modal system by B. Mates, M. Kneale, M. Frede, J. Vuillemin and M. Mignucci are evaluated."

For a shorter, updated, English version of Part I see "Stoic Logic", in K. Algra et al. (eds), *The Cambridge History of Hellenistic Philosophy*, Cambridge: Cambridge University Press 1999, pp. 92-157.

For a shorter, updated, English version of Part II see "Chrysippus' Modal Logic and its Relation to Philo and Diodorus", in K. Döring, Th. Ebert (eds.), *Dialektiker und Stoiker*, Stuttgart: Franz Steiner 1993, pp. 63-84.

22. ———. 1996. "Stoic Syllogistic." *Oxford Studies in Ancient Philosophy* no. 14:133-192.

"For the Stoics, a syllogism is a formally valid argument, and the primary function of their syllogistic is to establish the formal validity of arguments. Stoic syllogistic can be understood as a system of formal logic that relies on two types of argumental rules:' first, five rules (the accounts of the indemonstrables) which were used to determine whether any given argument is an indemonstrable argument (anapodeiktos logos), i.e. an elementary syllogism the validity of which is not in need of further demonstration (D.L. 7.79), since its validity is evident in itself (Sextus, M. 2. 223);2 second, one unary and three presumably binary argumental rules, called themata, which allow one to establish the formal validity of non-indemonstrable arguments by analysing them in one or more steps into one

or more indemonstrable arguments (D.L. 7. 78). The function of these rules is not to generate non indemonstrable syllogisms from indemonstrable ones, but rather to reduce given non-indemonstrable arguments to indemonstrable syllogisms. Moreover, the Stoic method of deduction differs from standard modern ones in that the direction is reversed. The Stoic system may hence be called an 'argumental reductive system of deduction'.

In the following I present a reconstruction of this system of logic. The rules or accounts used for establishing that an argument is indemonstrable have all survived, and the indemonstrables are among the best-known elements of Stoic logic. However, their exact role and logical status in Stoic syllogistic are usually neglected. I expound how they are integrated in the system of deduction. The state of evidence for the thesmata is dismal -- although perhaps not hopeless. I suggest a reconstruction of the thesmata, based on a fresh look at some of the sources, and then offer a reconstruction of the general method of reduction of arguments and some general remarks on Stoic syllogistic as a whole and on the question of its completeness (much of which will not depend on the particular formulation of the thesmata I propose, but on more general considerations for a reconstruction).

Stoic logic is a propositional logic, and Stoic negation and conjunction are truth-functional. This has, naturally, led to comparisons with the 'classical' propositional calculus (as e.g. presented in *Principia Mathematica*), including repeated examinations of Stoic syllogistic on completeness in the modern sense. The Stoic theory of deduction invariably comes out as deficient, inferior, or simply outlandish in such comparisons, which has evoked adjusting additions and modifications -- tacit or explicit -- in previous reconstructions of the system. I suggest that this is the wrong approach; that the classical propositional calculus is the wrong paradigm; that Stoic logic has to be considered

first of all in its own light; and that, if one looks for comparisons with contemporary logic, one can find some rather more interesting parallels when turning one's attention to non-truth-functional propositional logics." (pp. 133-134)

(1) By an argumental rule I mean a rule that produces arguments from (zero or more) arguments, as opposed to a rule that produces propositions from (zero or more) propositions.

(2) The accounts of the indemonstrables, when interpreted as rules, are nullary argumental rules.

23. ———. 1997. "The Stoics on Hypotheses and Hypothetical Arguments." *Phronesis. A Journal for Ancient Philosophy* no. 42:299-312.

"In the list of Chrysippus' logical writings in Diogenes Laertius, in its fourth section of works on arguments (λογοί), we find ten books on hypothetical arguments (υποθετικοί λόγοι, D. L. VII 196). The question I shall follow up in this paper is: what were these Stoic hypothetical arguments about which Chrysippus had so much to say? Little has been written on this issue, the situation of the sources being not exactly favourable. No example of an hypothetical argument assigned to Chrysippus or any other early Stoic has survived, nor do we have any Stoic definition.

One way of approaching the issue is to look and see what arguments were called "hypothetical arguments" or "hypothetical syllogisms" after Chrysippus, and to examine whether these are the same kind of arguments Chrysippus wrote about." (p. 299)

24. ———. 1999. "Logic. III. The Stoics." In *The Cambridge History of Hellenistic Philosophy*, edited by Algra, Keimpe, Barnes, Jonathan, Mansfeld, Jaap and Schofield, Malcolm, 92-176. Cambridge: Cambridge University Press.
§§ 1-7 (pp. 92-157) by Susanne Bobzien; § 8 (pp. 157-176) by Mario Mignucci.

25. ———. 2002. "Pre-Stoics Hypothetical Syllogistic in Galen's *Institutio Logica*." In *The Unknown Galen*, edited by Nutton, Vivian, 57-72. London: Institute of Classical Studies, University of London.

"The text of the *Institutio Logica* (*IL*) or *Introduction to Logic* is not found in Kuhn [*] because its sole surviving manuscript was first published, not long after its discovery, in 1844, and thus too late for inclusion in Kuhn. Moreover, some have thought the work to be spurious.(1)

The reasons given for this assumption were on the whole unconvincing. I take it for granted that the *Institutio Logica* is by Galen.

In this paper I trace the evidence in the *Institutio* for a hypothetical syllogistic which predates Stoic propositional logic. It will emerge that Galen is one of our main witnesses for such a theory. In the *Institutio*, Galen draws from a number of different sources and theories.

There are the so-called ancient philosophers (οἱ παλαιοὶ τῶν Φιλοσοφῶν); there is the Stoic Chrysippus, whose logic Galen studied in his youth.(2) There are the 'more recent philosophers' (οἱ νεώτεροι), post-Chrysippean Stoics or logicians of other schools who adopted Stoic terminology and theory.(3) There are from the 1st century BC the Stoic Posidonius and the Peripatetic Boethus, both of whom Galen may have counted among the 'more recent philosophers'. Again, in some passages Galen seems to draw from contemporary logical

theories of non-Stoic make, presumably of Peripatetic or Platonist origin; and in others he explicitly introduces his own ideas.(4) But apart from Plato, who is generously credited by Galen with the use of the later so-called second hypothetical syllogism, the only promising candidates for pre-Stoic proponents of a hypothetical syllogistic are the above-mentioned 'ancient philosophers'. In the following I concentrate on their theory."

[* Karl Gottlob Kühn, *Claudii Galeni Opera Omnia*. Leipzig: C. Cnobloch, 1821-1833, 19 volumes, reprinted Hildesheim: Georg Olms, 1964-1997].

(1) E.g. C. Prantl, *Die Geschichte der Logik im Abendlande* vol. I (Leipzig 1855) 591-92.

(2) Cf. Galen, *On my own books*, 43 (Kühn XIX).

(3) Cf. L S. Kieffer, *Galen's Institutio Logica* (Baltimore 1964) 130-32; J. Bames, 'Form and Matter', in A. Alberti, ed., *Logica, Mente e Persona* (Florence 1990) 7-119, at 71-23.

(4) E.g. in chapters 16-17 of the *Institutio*.

26. ———. 2003. "Stoic Epistemology." In *The Cambridge Companion to Stoics*, edited by Inwood, Brad, 59-84. Cambridge: Cambridge University Press.

27. ———. 2005. "The Stoics on Fallacies of Equivocation." In *Language and Learning. Philosophy of Language in the Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum*, edited by Frede, Dorothea and Inwood, Brad, 239-273. Cambridge: Cambridge University Press.

"As Susanne Bobzien shows, the Stoics had philosophical reasons for the development of strategies to handle 'lexical' ambiguities, because they regarded fallacies of ambiguity as complexes of propositions and sentences that straddle the realm of linguistic expression (the domain of language) and the realm of meaning (the domain of logic); moreover, there is also a pragmatic component because being deceived is a psychological disposition that can be reduced neither to language nor to meaning. Not all arguments are, after all, as transparently fallacious as is the example that exploits the ambiguity of 'for men/manly' and concludes that a 'garment for men' must be courageous because manliness is courage. Bobzien provides a detailed analysis of the relevant passages, lays bare textual and interpretative difficulties, and explores what the Stoic view on the matter implies for their theory of language. She points up that the Stoics believe that the premisses of the fallacies, when uttered,

have only one meaning and are true, and thus should be conceded; hence no mental process of disambiguation is needed, while Aristotle, by contrast, assumes that the premisses contain several meanings, and recommends that the listeners explicitly disambiguate them. Bobzien proffers two readings of the Stoic advice that we 'be silent' when confronted with fallacies of ambiguity, and explicates how each leads to an overall consistent interpretation of the textual evidence. Finally, she demonstrates that the method advocated by the Stoics works for all fallacies of lexical ambiguity." (From the *Introduction* by Dorothea Frede and Brad Inwood, (pp. 10-11)

28. ———. 2011. "The Combinatorics of Stoic Conjunction: Hipparchus Refuted, Chrysippus Vindicated." *Oxford Studies in Ancient Philosophy* no. 40:157-188.
29. Bobzien, Suzanne, and Mignucci, Mario. 2003. "Logic." In *The Cambridge Companion to Stoics*, edited by Inwood, Brad, 85-123. Cambridge: Cambridge University Press. §§ 1-7 (pp. 92-157) by S. Bobzien; § 8 (pp. 157-176) by M. Mignucci.
30. Bochenski, Joseph. 1951. *Ancient Formal Logic*. Amsterdam: North-Holland.
Chapter V. *The Stoic-Megaric School*, pp. 77-102.
31. ———. 1961. *A History of Formal Logic*. Notre Dame: Indiana University Press.
Translated from the German edition "Formale Logik" (1956) by Ivo Thomas.
Reprinted New York, Chelsea Publishing Co., 1970.
On the Stoics see Part III. *The Megarian-Stoic School*, pp. 105-251.
32. Brancacci, Aldo. 2005. "Antisthène et le stoïcisme: la logique." In *Les Stoïciens*, edited by Romeyer, Dherbey Gilbert and Gourinat, Jean-Baptiste, 55-73. paris: Vrin.
33. Brittain, Charles. 2005. "Common Sense: Concepts, Definition and Meaning in and out of the Stoa." In *Language and Learning: Philosophy of Language in the*

Hellenistic Age. Proceedings of the Ninth Symposium Hellenisticum, edited by Frede, Dorothea and Inwood, Brad, 164-209. Cambridge: Cambridge University Press.

"Charles Brittain also focuses on an important aspect of the philosophical analysis of language: its relation to reality and to the conceptual apparatus in the human mind, which on most theories connects reality to language. To the naive mind, a concept like 'common sense' would not seem to be in need of development since it must have been in place since the dawn of human reasoning. Nor is that the issue of Brittain's paper. Instead, he focuses on the development of a theory of common sense that is based on the connection between a stock of rational conceptions that is the common possession of all humans and the words which map naturally onto those conceptions and so give expression to them. The Stoics themselves did not maintain that everyone can acquire conceptions that successfully capture the essence of things; such success presupposes the uncorrupted mind of the wise; so these normative concepts do not seem to be an obvious source for a theory of common conceptions that are open to all. As Brittain contends, it would nevertheless be wrong to attribute such a theory to the later Platonists despite the fact that they advocated the existence of universally acceptable word-meanings that are open to every human being's grasp. For Platonists regarded these meanings as mere accidental features of the thing in question. What was needed to establish a theory of common sense was a combination of the two theories: the 'preliminary definition' of a term with universal acceptance that lays claim to at least a partial grasp of the thing's essence. En route to this solution Brittain offers, *inter alia*, a reconstruction of the mechanism at work in the formation of common concepts with abstract and general contents and seeks to solve the conundrum of how definitions of the words corresponding to the concepts are formed. He does so by carefully sifting through different sources that employ

Stoic vocabulary (such as 'preconceptions' or 'common conceptions') but that differ significantly from the Stoic view that all humans have at least a partial grasp of a thing's essential properties, rather than mere accidental properties. This assumption paves the way towards a theory of 'common sense' that establishes a direct connection between the concepts and the objects of the world and explains how ordinary language-speakers have at least an outline understanding of the world. Such a theory, so Britain argues, is the upshot of Cicero's treatment of preconceptions, in the basis of definitions. The rendering of 'preconception'(prolepsis) as shared by all - bycommunis mens and finally bycommunis sensus - justifies the attribution to Cicero of at least 'a fragment of a theory of common sense' in civic and political matters that everyone in principle can understand. This was a theory that deeply influenced the later rhetorical tradition and thereby became a lasting asset in cultural history." (From the *Introduction* by Dorothea Frede and Brad Inwood, (pp. 8-9)

34. Brochard, Victor. 1892. "La logique des Stoïciens." *Archiv für Geschichte der Philosophie* no. 5:449-468.
Repris dans: V. Brochard, *Études de philosophie antique et de philosophie moderne: XI. La logique des Stoïciens* (Première étude, pp. 220-238); XII. *La logique des Stoïciens* (Deuxième étude, pp. 239-251), Paris: Vrin, 1954.
35. Brunschwig, Jacques. 1980. "Proof Defined." In *Doubt and Dogmatism. Studies in Hellenistic Epistemology*, edited by Barnes, Jonathan, Burnyeat, Myles and Schofield, Malcolm, 125-160. Oxford: Clarendon Press.
36. ———, ed. 2006. *Les Stoïciens et leur logique*. Paris: Vrin. Actes du Colloque de Chantilly 18-22 septembre 1976. Première édition 1978; deuxième édition, revue, augmentée et mise à jour (reproduit la pagination de l'édition originale).
Table des matières: Avant propos de la deuxième édition 7; Avant propos de la première édition 11; John M. Rist: Zeno

and the Origins of Stoic Logic (non revu par l'auteur) 13; Ian G. Kidd: Posidonius and Logic (revu par l'auteur) 29; Victor Goldschmidt: Remarques sur l'origine épicurienne de la "prénotion" (revu par Pierre-Marie Morel) 41; Anthony A. Long: The Stoic Distinction Between Truth (me alétheia) and the True (to alethés) (revu par l'auteur) 61; Claude Imbert: Théorie de la représentation et doctrine logique dans le stoïcisme ancien (revu par l'auteur) 79; George Kerferd: The Problem of syntakatathesis and katalepsis in Stoic Doctrine (revu par Thomas Bénatouïl) 109; Urs Egli: Stoic Syntax and Semantics (revu par l'auteur) 131; Pierre Pachet: l'imperatif stoïcien (revu par l'auteur) 149; Françoise Caujolle-Zaslowsky: Le style stoïcien et laparempheasis (revu par l'auteur) 165; Richard Goulet: La classification stoïcienne des propositions simples selon Diogène Laërce, VII 69-70 (revu par l'auteur) 191; Anthony C. Lloyd: Definite Propositions and the Concept of Reference (revu par Jean-Baptiste Gourinat) 223; Jacques Brunschwig: Le modèle conjonctif (revu par l'auteur) 235; Gérard Verbeke: La philosophie du signe chez les stoïciens (revu par Danielle Lories) 261; Hervé Barreau: Cléanthe et Chrysippe face au maître-argument de Diodore (revu par l'auteur) 283; Mario Mignucci: Sur la logique modale des stoïciens (revu par Paolo Crivelli) 303; Pasquale Pasquino: Le statut ontologique des incorporels dans l'ancien stoïcisme (revu par l'auteur) 333; Andreas Graeser: The Stoic Categories (revu par l'auteur) 347; Janine Bertier: Une hénadologie liée au stoïcisme tardif dans le commentaire d'Alexandre d'Aphrodise à la Métaphysique d'Aristote (990 b 9) (non revu par l'auteur) 369; Jean-Paul Dumont: Mos geometricus, mos physicus (revu par Pierre-Marie Michel) 389; Joseph Moreau: Immutabilité du vrai, nécessité logique et lien causal (revu par Valéry Laurand) 405; Jonathan Barnes: La doctrine du retour éternel (revu par l'auteur) 421; Maria Daraki: Les fonctions psychologiques d'ulogos dans le stoïcisme ancien (non revu par l'auteur)

- 441; Bibliographie complémentaire 475; Index locorum 485-509.
37. Burnyeat, Myles. 1982. "Gods and Heaps." In *Language and Logos. Studies in Ancient Greek Philosophy Presented to G. E. L. Owen*, edited by Schofield, Malcolm and Nussbaum, Martha, 315-338. Cambridge: Cambridge University Press. On the Sorite paradox.
Reprinted in M. Burnyeat, *Explorations in Ancient and Modern Philosophy, Volume 1*, Cambridge: Cambridge University Press 2012, pp. 90-111.
38. ———. 2005. "The origins of non-deductive inference." In *Science and Speculation. Studies in Hellenistic Theory and Practice*, edited by Barnes, Jonathan, Brunschwig, Jacques, Burnyeat, Myles and Schofield, Malcolm, 193-238. Cambridge: Cambridge University Press.
Reprinted in M. Burnyeat, *Explorations in Ancient and Modern philosophy, Volume 1*, Cambridge: Cambridge University Press 2012 pp. 112-151.
39. Casari, Ettore. 1958. "Sulla disgiunzione nella logica megarico-stoica." In *Actes Du VIII Congrès Internationale d'Histoire des Sciences. Florence-Milan, 3-9 Septembre 1956. Vol. III*, 1217-1224. Paris: Hermann et C.ie.
40. Castagnoli, Luca. 2010. "How Dialectical Was Stoic Dialectic?" In *Ancient Models of Mind: Studies in Human and Divine Rationality*, edited by Nightingale, Andrea Wilson and Sedley, David, 153-179. Cambridge: Cambridge University Press.
41. Cavini, Walter. 1983. "La teoria stoica della negazione." In *Atti del Convegno internazionale di storia della logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 229-234. Bologna: CLUEB.
42. ———. 1985. "Il papiro Parigino 2. Testo, traduzione e commento." In *Studi Su Papiri Greci Di Logica E Medicina*, edited by Cavini, Walter, Donnini Macciò, Maria Cristina, Funghi, Maria Serena and Manetti, Daniela, 85-126. Firenze: Olschki.

43. ———. 1985. "La negazione di frase nella logica greca." In *Studi Su Papiri Greci Di Logica E Medicina*, edited by Cavini, Walter, Donnini Macchiò, Maria Cristina, Funghi, Maria Serena and Manetti, Daniela, 85-126. Firenze: Olschki.
Indice dei Contenuti: Nota liminare 9;
LA NEGAZIONE ARISTOTELICA
1. La sintesi dichiarativa: supplemento di frase e contenuto descrittivo 11; 2. Negazione semplice e affermazione trasposta 17; 3. Le asserzioni indeterminate: trasformazione predicativa ed equivocità composta 26; 4. Portata esistenziale dell'affermazione 36; 5. Negative categoriche 41;
LA NEGAZIONE STOICA
1. Frammenti e testimonianze 47; 2. La teoria stoica degli assiomi 48; 3. Negazione semplice e composta 51; 4. Opposti contraddittori 57; 5. Ambiguità della negazione ordinaria 67;
APPENDICE - IL PAPIRO PARIGINO 2
Testo e traduzione 86; Commento 107; Bibliografia 122-126.
44. ———. 1996. "Essere ed essere vero. Sull'uso assoluto di *Hyparcho* nella logica stoica." In *Odoi Dizesios = Le Vie Della Ricerca. Studi in Onore Di Francesco Adorno*, edited by Funghi, Maria Serena, 141-145. Firenze: Olschki.
45. Celluprica, Vincenza. 1980. "La logica stoica in alcune recenti interpretazioni." *Elenchos. Rivista di Studi sul Pensiero Antico* no. 1:123-150.
46. ———. 1989. "Diocle di Magnesia come fonte della dossografia stoica in Diogene Laerzio." *Orpheus. Rivista di Umanità Classica e Cristiana* no. 10:58-79.
47. Colish, Marcia L. 1979. "The Stoic Hypothetical Syllogisms and Their Transmission in the Latin West through the Early Middle Ages." *Res Publica Litterarum* no. 2:19-26.
Reprinted in M. L. Colish, *The Fathers and Beyond: Church Fathers between Ancient and Medieval Thought*, Aldershot: Ashgate 2008, Essay XIV.
48. Corcoran, John. 1974. "Remarks on Stoic Deduction." In *Ancient Logic and Its Modern Interpretations. Proceedings*

of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972, edited by Corcoran, John, 169-181. Dordrecht: Reidel.

"The purpose of this note is to raise and clarify certain questions concerning deduction in Stoic logic. Despite the fact that the extant corpus of relevant texts is limited, it may nevertheless be possible to answer some of these questions with a considerable degree of certainty. Moreover, with the answers obtained one might be able to narrow the range of possible solutions to other problems concerning Stoic theories of meaning and inference.

The content of this note goes somewhat beyond the comments I made during the discussion of Professor Gould's paper 'Deduction in Stoic Logic', in the symposium. I am grateful to Professors Gould and Kretzmann for pointing out the implications of those comments as well as for encouraging me to prepare them for this volume.

One of the obstacles to a careful discussion of Stoic logic is obscurity of terminology. Clarification of terminology may catalyze recognition of important historical facts. For example, in 1956 a modern logician suggested (incorrectly) in a historical note [Alonzo Church, *Introduction to mathematical logic*, Princeton. 1956, fn. 529] that the distinction between implication and deduction could not have been made before the work of Tarski and Carnap. But once historians had clarified their own terminology it became obvious that this distinction played an important role in logic from the very beginning. Aristotle's distinction between imperfect and perfect syllogisms is a variant of the implication-deduction distinction and Gould 'Deduction in Stoic Logic' suggests the existence of a parallel distinction in Stoic logic." (p. 169)

49. Crivelli, Paolo. 1994. "Indefinite Propositions and Anaphora in Stoic Logic." *Phronesis. A Journal for Ancient Philosophy* no. 39:187-206.

"If I utter in succession the sentences 'Someone is ringing at the door' and 'He is looking for you', my utterance of the pronoun 'he' is anaphoric on my utterance of the indefinite description 'someone', and the proposition expressed by my utterance of 'He is looking for you' is anaphoric on the indefinite proposition expressed by my utterance of 'Someone is ringing at the door'. Propositions anaphoric on indefinite propositions are very important in Stoic logic because they can be parts of indefinite conditionals and indefinite conjunctions, which are 'universal' and 'particular' propositions.

In this paper I aim at establishing two main results concerning the Stoic conception of indefinite propositions and propositions anaphoric on them: the verb υποταττειν belongs to the jargon of Stoic logic and expresses the operation of subordination, which yields the definite propositions that are relevant to the truth or falsity of a given indefinite proposition; the standard ('sentential') truth conditions of conditionals and conjunctions yield the expected ('quantificational') truth conditions of indefinite conditionals and conjunctions, i.e. truth conditions suitable for 'universal' and 'particular' propositions." (p. 187)

50. ———. 1994. "The Stoic Analysis of Tense and of Plural Propositions in Sextus Empiricus, *Adversus Mathematicos* X 99." *Classical Quarterly* no. 44:490-499.

"*Adversus Mathematicos* (M.) x is the second book dedicated by Sextus to the discussion of the physical doctrines put forward by dogmatic philosophers. An extensive section (M. X 85-120) deals with Diodorus Cronus' arguments concerning movement.

M. X 99 occurs within the report of a debate on motion and time between Diodorus and some unnamed opponents. The passage is probably corrupt (as was already noticed by Heintz) [*] and contains some observations on plural propositions and tense which have not yet been satisfactorily explained. In this paper I argue that Diodorus'

critics are Stoics, propose a new emendation of the text, and attempt a plausible account of the remarks on plural propositions and tense. Thereby some light is shed on a hitherto unexplored region of Stoic logic." (p. 490)

[* Werner Heintz, *Studien zu Sextus Empiricus*, Halle, 1932.]

51. ———. 2009. "La dialectique." In *Lire les Stoïciens*, edited by Gourinat, Jean-Baptiste and Barnes, Jonathan, 41-61. Paris: Presses universitaires de France.
52. ———. 2010. "The Stoics on Definitions." In *Definition in Greek Philosophy*, edited by Charles, David, 359-423. New York: Oxford University Press.

"The present study is a reconstruction of the Stoic theory of definition. The topic is vast and the sources are scarce. My focus is on the epistemological and semantic aspects of the Stoic theory of definition.

The study's first section explains how important definitions were for the Stoics. The second section expounds the different locations of the study of definitions within the Stoic system of philosophical disciplines. The third section discusses the epistemological side of the theory of definitions on which one of these locations relies. In particular, it addresses two roles played by definitions: sharpening our conceptions in such a way that they are more successfully applied to or withheld from entities, and endowing our conceptions with a systematic structure that makes them suitable for instruction. The fourth section discusses the link between definition and essence: it argues that the Stoics do not think that definitions reveal the essence of what is defined. The fifth section discusses the position of definitions within Stoic philosophy of language: definitions are not linguistic expressions, but sayables of a special kind (distinct from statables)." (p. 359)
53. Croissant, Jeanne. 1984. "Autour de la quatrième formule d'implication dans Sextus Empiricus, *Hyp. Pyrrh.* II, 112.

Essai de mise au point." *Revue de Philosophie Ancienne* no. 2:73-120.

Repris dans: J. Croissant, *Études de philosophie ancienne*, Bruxelles: Ousia 1986, pp. 297-345.

"Le chemin que nous avons suivi nous a conduits à interpréter la quatrième formule de Sextus comme l'expression d'un lien causal entre l'antécédent et le conséquent, avec cette précision supplémentaire, qui fait corps avec le texte de Galien, que la proposition hypothétique dans laquelle s'exprime l'endeixis procède à partir de l'effet pour découvrir la cause. Nous débouchons donc sur une présence du lien causal dans la proposition hypothétique qui est à l'opposé de l'interprétation de J. Moreau (126) qui voit dans l'*emphasis* l'inclusion dynamique de l'effet dans la cause, disons plutôt de l'ultérieur dans l'antérieur. Alors que mes réflexions m'ont orientée vers le domaine médical, J. Moreau a cherché à retrouver dans la logique stoïcienne la trace et la mise en forme de la conception stoïcienne de l'ordre du monde et des raisons séminales qui président à son déroulement. Les deux positions impliquent en outre une métaphorisation d'*emphasis*, un peu différente de part et d'autre, sous l'identité du "περιεχεται δυναμει". C'est aux lecteurs qu'il appartiendra de juger." (pp. 116-117)

(126) [Joseph Moreau, "Immutabilité du vrai, nécessité logique et lien causal", *Les Stoïciens et leur logique* (Actes du Colloque de Chantilly, septembre 1976), Paris, Vrin, 1978, pp. 347-360] Cf. p. 84.

54. Detel, Wolfgang, Hülsen, Reinhard, Krüger, Gerhard, and Lorenz, Wolfgang. 1980. "λεκτα ἑλλιπῆ in der Stoischen Sprachphilosophie." *Archiv für Geschichte der Philosophie* no. 62:276-288.
55. Dorandi, Tiziano. 2005. "La tradition papyrologique des Stoïciens." In *Les Stoïciens*, edited by Romeyer, Dherbey Gilbert and Gourinat, Jean-Baptiste, 29-52. Paris: Vrin.
"J'ai organisé ma contribution en cinq sections:

1. Noms de philosophes stoïciens et de leurs oeuvres dans les papyrus (d'Égypte et d'Herculanum).
2. Histoire de la Stoa de Philodème de Gadara.
3. Textes stoïciens en tradition directe (livres ou fragments de philosophes stoïciens transmis par les papyrus d'Égypte ou d'Herculanum). Je considère d'abord les textes dont l'attribution à un philosophe défini est certaine ou présumée telle: Chrysippe, Hiéroclès, Musonius Rufus; ensuite, je m'arrête sur le papyrus *Parisinus 2* dont l'attribution à Chrysippe a été contestée; enfin, j'examine des cas de fausses attributions.
4. Textes stoïciens en tradition indirecte (les extraits de la *Politeia* de Zénon de Citium cités par Philodème; ceux tirés des œuvres d'Ariston de Chios, d'Antipatros de Tarse et de Diogène de Séleucie).
5. Pour terminer, je dresserai une liste de papyrus où se trouve une référence à la Stoa, aux stoïciens, ou des allusions à des doctrines stoïciennes." (p. 30)

Les pages 35-37 sont sur les *Recherches logiques (Logika zêtêmata) (fragmenta, P. Herc. 307)* de Chrysippe.

56. Döring, Klaus, and Ebert, Theodor, eds. 1993. *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*. Stuttgart: Franz Steiner.
 Inhaltsverzeichnis: Vorwort 7; Abkürzungsverzeichnis 8; Teilnehmerverzeichnis 9; Wolfram Ax: Der Einfluss des Peripatos auf die Sprachtheorie der Stoa 11; Mariano Baldassarri: Ein kleiner Traktat Plutarchs über stoische Logik 33; Jonathan Barnes: Meaning, Saying and Thinking 47; Susanne Bobzien: Chrysippus' Modal Logic and Its Relation to Philo and Diodorus 63; Walter Cavini: Chrysippus on Speaking Truly and the Liar 85; Theodor Ebert: Dialecticians and Stoics on the Classification of Propositions 111; Urs Egli: Neue Elemente im Bild der stoischen Logik 129; Michael Frede: The Stoic Doctrine of the Tenses of the Verb 141; Gabriele Giannantoni: Die Philosophenschule der Megariker und Aristoteles 155;

Karheinz Hülser: Zur dialektischen und stoischen Einteilung der Fehlschlüsse 167; Katerina Ieorodiakonou: The Stoic Indemonstrables in the Later Tradition 187; Fritz Jürss: Zum Semiotik Modell der Stoiker und ihrer Vorläufer 201; Mario Mignucci: The Stoic Themata 217; Luciano Montoneri: Platon, die Ältere Akademie und die stoische Dialektik 239; Luciana Repici: The Stoics and the Elenchos 253; Andreas Schubert: Die stoischen Vorstellungen 271; Gerhard Seel: Zur Geschichte und Logik der *therizōn logos* 291; Hermann Weeidemann: Zeit und Wahrheit bei Diodor 319; Literaturverzeichnis 331; Register 343-361.

57. Drozdek, Adam. 2002. "Lekton. Stoic Logic and Ontology." *Acta Antiqua. Academiae Scientiarum Hungaricae* no. 42:93-104.

Summary: "For the Stoics, the *lekton* is as an intermediary between the thought and the object. They do not exist independently of the mind, but, at the same time, the mind does not create them. Due to this status, they guarantee intersubjectivity of the rational discourse. They are incorporeals that do not exist, but subsist and the Stoic Logos-God guarantees their permanent subsistence. The *Iekta* are semantico-syntactic entities. Their role is analogous to the role of an interlingua used as a tool for automated translation of languages."

58. Dumitriu, Anton. 1977. *History of Logic*. Tunbridge Wells: Abacus Press.
Revised, updated, and enlarged translation from the Roumanian of the second edition of "Istoria logicii" (1969, 4 volumes).

On the Stoics see: Vol. I, pp. 216-253.

59. Dyson, Henry. 2009. *Prolepsis and Ennoia in the Early Stoa*. Berlin: Walter de Gruyter.
60. Ebert, Theodor. 1987. "The Origin of the Stoic Theory of Signs in Sextus Empiricus." *Oxford Studies in Ancient Philosophy* no. 5:83-126.

61. ———. 1991. *Dialektiker und frühe Stoiker bei Sextus Empiricus. Untersuchungen zur Entstehung der Aussagenlogik*. Göttingen: Vandenhoeck & Ruprecht.
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62. ———. 1993. "Dialecticians and Stoics on the Classification of Propositions." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 111-127. Stuttgart: Franz Steiner.
63. Egli, Urs. 1967. *Zur Stoischen Dialektik*. Basel: Sandoz.

Inauguraldissertation (Universität Bern).

Inhaltsverzeichnis: 1. Allgemeines zur Rekonstruktion der stoischen Dialektik 2; 2. Diokles bei Diogenes Laertios 7.49-82 8; 3. Quellengeschichtliche Nebenergebnisse zu Diogenes und Sextos 59; 4. Nebenergebnisse zu Galens Einführung in die Logik 74; Zusammenfassung und Ausblick 87; Erklärung der wichtigsten Abkürzungen 106; Bibliographie 107-113.

64. ———. 1983. "The Stoic Theory of Arguments." In *Meaning, Use, and Interpretation of Language*, edited by Bäuerle, Rainer, Schwarze, Christoph and von Stechow, Arnim, 79-96. Berlin: Walter de Gruyter.

Contents: 1. Relevance of the topic; 2. Concepts involved; 2.1 Arguments; 2.2 Simple and logical concepts; 2.3 A hypothesis on Stoic deduction theory; 3. A commentary on Sextus' passage on invalidity [Adv. Math. 8, 292-294]; 3.1 The context; 3.2 The passage; 4. Deductions; 5. Completeness; 6. Conclusion; Appendix: Possible existence of cut free systems; Bibliography.

"1. Relevance of the Topic

The Stoic theory of arguments to my mind illustrates one point: If certain ancient doctrines had been properly understood, the corresponding modern theories would have been developed sooner. We would have had a propositional logic by 1800, we would have had a serious syntax long before transformational grammar. Stoics, in addition, had already something like a speech act theory. In one or two cases modern theories have directly been elaborations of Stoico-Megarian developments: First, Prior's tense logic was influenced by reflections on Diodorus. Second, Kripke's semantics for modal logic was directly influenced by Prior's exposition of the theory of modality of Diodorus Kronos. Compare his truth definition of modal statements with that of Kripke:

p is possible now iff p is true now or will be true later (Diodorus).

p is possible in our world iff p is true in a world accessible from ours (Kripke).

Kripke replaced points of time by possible worlds and the relation "to be now or later" by the accessibility relation. It is not impossible that further study of Stoic theories will contribute in a similar way to modern discussions.

It has been proved by Łukasiewicz and Mates that the Stoic theory of what they called syllogisms contained something we might call propositional logic in modern terms. Mates also brought up the problem of deciding whether

1) Stoics contended that their propositional logic was complete; and whether

2) Stoic logic actually was complete according to modern criteria (Mates 1961, 81-82).

As to the first question, the evidence that Mates adduces is not wholly conclusive, for the passages are little more than consequences of the definition of syllogisms (= valid arguments): According to this definition a syllogism is either a basic syllogism (anapodeiktos) or derived from basic syllogisms by the deductive rules (themata) (DL 7.78). From this definition follows that every syllogism (which is not basic) is derived from the basic ones -- the passages adduced by Mates say just that. If it is not clear whether the Stoics actually held that their propositional logic was complete, Becker's attempt to prove the completeness of Stoic logic by reconstructing the missing pieces of the deductive apparatus may seem futile. He has also been severely criticised by Mueller, Frede and others because it is not clear

(a) whether the Stoic conditional *signei* is to be taken as a truth-functional connective or not,

(b) how the Chrysippean exclusion of arguments with but one premise can be reconciled with Becker's full use of such arguments in his proofs of semantic completeness,

(c) whether the completeness extended from the part of the system involving only conjunction and negation to other

connectives.

I now want to reopen the question by arguing that a kind of completeness is indeed to be found in Stoic passages (though not in those Mates adduced) and that an examination of the sources renders some plausibility to the thesis that the Stoics had a system of deduction rules which can be proved adequate according to modern criteria." (pp. 79-80)

Some material on the same matter is already contained in Egli 1967, 54 and Egli 1977 [Review of Frede 1974. *Gnomon* 49, 1977, 784-790].

65. ———. 1993. "Neue Elemente Im Bild Der Stoischen Logik." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 129-139. Stuttgart: Franz Steiner.
66. Evans, John David Gemmill. 2011. "The Old Stoa ont the Truth-Value of Oaths." *Cambridge Classical Journal* no. 20:44-47.

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- Literaturverzeichnis 202; Sachregister 208; Verzeichnis griechischer Termini 209; Verzeichnis lateinischer Termini 210; Bemerkungen zum Text 210; Stellenregister 211-224.
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 3. ———. 2009. "The Stoic Notion of a *Lekton*." In *Language. Companions to Ancient Thought. Vol. 3*, edited by Everson, Stephen, 109-128. Cambridge: Cambridge University Press.
 4. Gabriel, Gottfried, Hulser, Karlheinz, and Schlotter, Sven. 2009. "Zur Miete bei Frege – Rudolf Hirzel und die Rezeption der stoischen Logik und Semantik in Jena." *History and Philosophy of Logic* no. 30:369-388.
Abstract: "It has been noted before in the history of logic that some of Frege's logical and semantic views were anticipated in Stoicism. In particular, there seems to be a parallel between Frege's *Gedanke* (thought) and Stoic *lekton*; and the distinction between complete and incomplete lekta has an equivalent in Frege's logic. However, nobody has so far claimed that Frege was actually influenced by Stoic logic; and there has until now been no indication of such a causal connection. In this essay, we attempt, for the first time, to provide detailed evidence for the existence of this connection. In the course of our argumentation, further analogies between the positions of Frege and the Stoics will be revealed. The classical philologist Rudolf Hirzel will be brought into play as the one who links Frege with Stoicism. The renowned expert on Stoic philosophy was Frege's tenant and lived in the same house as the logician for many years."

5. Gardies, Jean-Louis. 1985. "Sur le *διεζενγμενον* de la logique stoïcienne." *Logique et Analyse* no. 28:385-394.
6. Gaskin, Richard. 1997. "The Stoics on Cases, Predicates and the Unity of the Proposition." In *Aristotle and After*, edited by Sorabji, Richard, 91-108. London: Institute of Classical Studies.
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"In their logical theory Stoic philosophers made use of a simple but important distinction alleged to hold among valid arguments, a distinction to which Aristotle had first called attention.(1) They distinguished those arguments whose validity is evident from those whose validity is not evident and so needs to be demonstrated. The Stoics, having supposed that the distinction obtains, raise and answer the question, how does one demonstrate the validity of those arguments whose validity is not plain? The Stoics appear to have set forth both a discursive method of demonstration and a test for validity. In this paper I examine these two facets of Stoic logic.(2)

The paper is in three parts. The first is essentially terminological and taxonomic. There I record Stoic definitions of logical terms and I give three Stoic classifications of arguments, appending samples from the writings of Sextus Empiricus.(3) This provides and puts on exhibit an array of typically Stoic arguments to which I refer in the second part of the paper. There I examine Sextus' contention that the disagreement among the Stoics over the criterion of truth for a conditional proposition renders inefficacious the test that had been set forth as sufficient for judging the validity of an argument, and I argue that Sextus' charge has to be qualified. Even if an unqualified form of Sextus' accusation could be established, its importance, I

maintain, would be diminished by the fact that the Stoics didn't make extensive use of this test anyhow. As I show in the third part of the paper, the Stoics ordinarily claim to prove the validity of all valid arguments(4) not by means of a test but by means of a calculus of propositions(5) having its base in a theory of deduction, which includes a language consisting of connectives and variables, axiomatic inference schemata, and rules of derivability. I conclude with a statement about the Stoic theory of deduction in relation to systems of logic developed in the 19th and 20th centuries and to Aristotelian syllogistic." (p. 151)

(1) *Prior Analytics* I.24b22-26, 27a16-18. The distinction between plainly valid syllogisms and non-evidently valid syllogisms is for Aristotle the distinction between 'perfect' syllogisms, on the one hand, and 'imperfect' syllogisms, on the other. A perfect syllogism is one in which, as Aristotle frequently puts it, the necessity (of the conclusion if the premises be assumed) is evident. That the Stoics presupposed this distinction is made clear in Part III of this paper.

(2) I wish to thank my colleagues, James A. Thomas and Harold Morick, for helpful critical remarks on an earlier draft of this paper. I am also enormously indebted to John Corcoran for many incisive remarks and helpful suggestions on two later versions of the paper.

(3) Sextus is the richest source we have for a knowledge of Stoic logic. Being a Sceptic he is extremely critical of the Stoics. He also tends to be tediously repetitious. He appears to have quoted and paraphrased with care, though there aren't always non-circular ways of checking this. As Mates has observed (*Stoic logic* (1961), p. 9), "any parts of Stoic logic which he found either too difficult or too good to refute will be absent from his account", but even so there is enough material in Sextus to extract a fairly good account of the elements of Stoic logic.

(4) Mates refers in several places (pp. 4, 58, 82) to and gives evidence for the Stoics' claim that their propositional logic was complete.

(5) The Stoics didn't call their logic a calculus of propositions (Diogenes Laertius groups Chrysippus' books dealing with the subject under the heading 'Logic in Relation to Arguments and Moods', *Vitae* VII. 193); but Stoic logic shares so many similarities with modern propositional logic, calling their logic 'a calculus of propositions' while anachronistic is at least not baneful, and it is, in fact, in my view illuminating to use this expression to refer to Stoic logic.

8. Gourinat, Jean-Baptiste. 1999. "La définition et les propriétés de la proposition dans le Stoïcisme ancien." In *Théories de la phrase et de la proposition de Platon à Averroès*, edited by Büttgen, Philippe, Dieble, Stéphane and Marwan, Rashed, 133-150. Paris: Éditions rue d'Ulm.
9. ———. 2000. *La dialectique des Stoïciens*. Paris: Vrin.
10. Graeser, Andres. 1978. "The Stoic Theory of Meaning." In *The Stoics*, edited by Rist, John M., 77-100. Berkeley:: University of California Press.
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"Whether or not the Stoics conceived of any "science" corresponding in scope and methods to formal semantics in the sense described, for example, by J. Moravcsik (1) seems hard to determine. Evidence regarding this issue is scanty, particularly in view of the fact that some of the isolated testimonies relating to the Stoic theory of meaning are extremely difficult to assess and still require good deal of extensive analysis. From the meager reports concerning the bare essentials of this theory as incorporated into later manuals and elsewhere, it would appear, however, that in the course of their school's history the Stoics developed a fairly detailed semantic theory. It is a theory of meaning

that has invited comparison with modern theories and obviously stood it well. In fact, it is generally agreed that the Stoic account of semantics is superior to and more sophisticated than the more influential one offered by Aristotle in the *De Interpretatione* (16a3-18).⁽²⁾ It is also considered to figure among the very few definitely modern-minded contributions to the systematic study of philosophical problems carried out by ancient Greek thinkers.

Semantics in general, according to Stoic philosophers, seems to be an integral part of what they called "Logic" or "Dialectic" respectively, that is, the study of the utterance and the study of the utterance as meaningful. It is integral inasmuch as the Stoic conception of logic is one that depends again on their theory of meaning. In the analysis of meaning three components seem to be distinguished. The components or aspects under consideration are: first, the sign (*σημαίνον*, i.e., that which signifies) which is a phoneme or grapheme; second, the significate (*σημαινόμενον*, i.e., that which is signified) which is expressed by the sound which we apprehend as it arises in our mind; and third, the external object referred to." pp. 77-78

(1) *Understanding Language* (The Hague, 1975) 21.

(2) On this most influential text in the history of semantics, see N. Kretzman, "Aristotle on Spoken Sound," in J. Corcoran, ed., *Ancient Logic and its Modern Interpretations* (Dordrecht and Boston, 1974) 3-21.

11. Hájek, Alan. 2009. "Two Interpretations of Two Stoic Conditionals." *Logical Analysis and History of Philosophy* no. 12:206-221.

"Four different conditionals were known to the Stoics. The so-called 'first' (Philonian) conditional has been interpreted fairly uncontroversially as an ancient counterpart to the material conditional of modern logic; the 'fourth' conditional is obscure, and seemingly of little historical

interest, as it was probably not held widely by any group in antiquity. The 'second' (Diodorean) and 'third' (Chrysippean) conditionals, on the other hand, pose challenging interpretive questions, raising in the process issues in philosophical logic that are as relevant today as they were then.

This paper is a critical survey of some modern answers to four of the most tantalizing of these questions; the issues that I will discuss arise out of interpretations of the Diodorean and Chrysippean conditionals as expressions of natural law, and as strict implications.

I will reject these interpretations, concluding with my own proposal for where they should be located on a 'ladder' of logical strength." (p. 206)

12. Hamelin, Octave. 1902. "Sur la logique des Stoïciens." *Année Philologique* no. 12:13-26.

Repris dans *Cahiers philosophiques* 2017/4 (n° 151), pp. 127-136.

13. Hay, William. 1969. "Stoic Use of Logic." *Archiv für Geschichte der Philosophie* no. 51:145-157.

"To sum up. I began by reporting briefly the present widely held opinion that Stoic logic was a logic of propositions. I reminded us that in twentieth-century logic, the logic of propositions, consists of rules governing inferences according to their sentence-connectives and that it by no means exhausts the rules of logic. Rather propositional functions or predicates are added to that, and in turn many-place predicates are added. Some investigators have supposed that Stoic logic was confined to a logic of propositions. That restriction may be suggested by the concentration of the Stoics on singular propositions as those which express what exists most clearly and by their claim that all inferences depend on their logic. If, however, the Stoics had no more logic than the logic of propositions, they had no way of accounting for believing (much less for knowing) non-simple propositions in conditional or

disjunctive forms, so that such non-simple propositions would be useful in inference.

Evidence was introduced that the Stoics had and used a rule of instantiation in conditional propositions. This led us to see a use for their rules about the three kinds of simple propositions, those with indefinite subjects, *tis, ti*, 'someone,' 'something;' those with definite subjects, demonstrative articles such as *outos, touto*, 'this one', 'that thing' and those with intermediate subjects, 'Socrates', 'Dion', *anthropos*, 'a man'.

There is further evidence that the Stoics claimed to be able to rephrase universal propositions of the Peripatetic form as conditional propositions with indefinite subjects. Some philosophers from other schools acknowledged that the conditionals followed from the standard universal. There was disagreement about the converse. The charge was made that the Stoics failed to acknowledge eternal forms and that they replace them by things which existed in the mind only, or rather since they were corporealists in the body of the knower only. Another paper would be required to discuss the place of these grasps in the Stoic account of knowledge and of ethics, for action involves how I take things." (pp. 155-156)

14. Hirzel, Rudolf. 1879. "De Logica Stoicorum." In *Satura Philologa. Hermann Sauppe Obtulit Amicorum Conlegarum Decas*. Berlin: Weidemann.
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and Stechow, Arnim von, 235-249. Berlin: Walter de Gruyter.

"For the Stoics dialectic was the discipline where they developed their theory of cognition and of language as well as some kind of grammar und formal logic. All those topics were formed into a system and a lot of remarkable statements made about them. Hence, Stoic dialectic had much influence, and founded the western tradition of systematic linguistic theory. But the original writings of the Stoics are, nevertheless, lost. Thus, in order to study the origins of systematic linguistic thought, we have to collect the testimonies and fragments on Stoic dialectic from many scattered sources, i.e. from later authors who mentioned, reported or criticized Stoic ideas. In the last centuries this task was performed by different scholars. I only mention Rudolf T. Schmidt (1) and -- above all -- Hans v. Arnim whose 'Stoicorum veterum fragmenta' is the famous standard collection of fragments on all the three parts of Stoic philosophy up to now (2). With regard to Stoic dialectic Prof. U. Egli came up with the idea that it would be worth the trouble to collect the fragments once again. He applied for a research program, sponsored by the 'Deutsche Forschungsgemeinschaft (DFG)', and asked me to realize what he had in mind, the result of which is a new collection of fragments on Stoic dialectic, the subject of this paper. The formal data of this new collection are the following ones: The collection which amounts to 1257 fragment-numbers (plus ca. 70 additional a-numbers) embraces about 1800 texts, the greatest part of which is quoted in Greek or Latin as well as translated into German; various commentaries are inserted. All this comes to 978 crowded typewritten pages. Superadded are some indices and an introduction by the editor. The book is entitled *Die Fragmente zur Dialektik der Stoiker* - zusammengestellt, ins Deutsche übersetzt und teilweise kommentiert - von K. Hülser (the abbreviation of which will be FDS), and is

forthcoming: In 1982 it is published in 8 volumes within the publications of the 'Sonderforschungsbereich 99' at the University of Konstanz (Fed. Rep. of Germany). This edition, though it has a small number of copies and no ISBN-number, serves its purpose as a citable one for the time being (available in the library of the University of Konstanz), but will be replaced by a more 'genuine' one as soon as possible. [*]

As for the kind and the content of the new collection, three approaches will be offered in the following. The first one starts from the function of collections of fragments in general; it will explain why v. Arnim's collection is insufficient and a new one necessary, and consequently it leads to certain requirements concerning FDS. The second approach, then, starts from the arrangement of fragments in FDS and will show some systematic aspects of Stoic dialectic connected with it. The third one eventually is centered on the problem of intended completeness; in some cases this aim, being understood systematically, leads to interesting results though it widens the concept of fragments." (pp. 235-236)

(1) R. T. Schmidt, *Stoicorum grammatica*, Halle 1839; repr. Amsterdam 1967. A German translation with an introduction and some additional notes by K. Hülser was published in Braunschweig / Wiesbaden 1979, completed by a bibliography on Stoic dialectic by U. Egli.

(2) H. v. Arnim, *Stoicorum veterum fragmenta* Vol. IV (Indices, by M. Adler), Leipzig 1903-1905, 1924; repr. Stuttgart 1964.

[* The definitive edition is: *Die Fragmente Zur Dialektik Der Stoiker*, Stuttgart: Frommann-Holzboog 1987-88, 4 volumes.]

18. ——. 1992. "Sextus Empiricus und die Stoiker." *Elenchos. Rivista di Studi sul Pensiero Antico* no. 13:233-276.
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Unpublished dissertation (a PDF version can be downloaded from British Library Document Supply Service).

Abstract: "This thesis focusses on the notion of analysis in Stoic logic, that is to say on the procedure which the Stoic logicians followed in order to reduce all valid arguments to five basic patterns. By reconsidering the uses of its Aristotelian homonym and by examining the evidence on the classification of Stoic arguments, I distinguish two methods of Stoic analysis and I discuss their rules: (i) the analysis of non-simple indemonstrables, which constitutes a process of breaking up an argument by means of general logical principles ; and (ii) the analysis of (yllogistic) arguments, which replaces demonstration and is effected by employing standard well-determined rules. The ancient sources provide us with concrete examples illustrating the first type of analysis; however, there is no single text that reports the exact procedure of analysing (syllogistic) arguments. Modern scholars have reconstructed in different ways this type of Stoic analysis; I deal with all of them separately and show that the proposed reconstructions are insightful but historically implausible. Based on the textual materiel concerning the notion of analysis not only in its Stoic context but also in some other of its uses, and especially in mathematical practice, I suggest an alternative reconstruction of the Stoic method of reducing valid arguments to the basic indemonstrables."

20. ———. 1990. "Rediscovering Some Stoic Arguments." In *Greek Studies in the Philosophy and History of Science*, edited by Nicolacopoulos, Pantelis, 133-148. Dordrecht: Kluwer.
21. ———. 1993. "The Stoic Indemonstrables in the Later Tradition." In *Dialektiker und Stoiker. Zur Logik der Stoa und ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 187-200. Stuttgart: Franz Steiner.

22. ———. 2006. "Stoic Logic." In *A Companion to Ancient Philosophy*, edited by Gill, Mary Louise and Pellegrin, Pierre, 505-529. Malden: Blackwell.

"Conclusion. As I indicated at the beginning of the chapter, it was only towards the middle of the twentieth century that Stoic logic began to be studied on its own merits and not as an appendix to Aristotle's syllogistic. To a great extent it was the revival of interest in the logical contributions of the Stoics that convinced scholars to investigate more carefully the other parts of Stoic philosophy, namely ethics and physics. The literature on Stoic logic that has since been published has managed to reconstruct a logical calculus, which still surprises us with its sophistication and its similarities to modern systems of logic. At the same time, though, it also has become clear that we should not fail to take seriously into account what differentiates Stoic logic from its modern counterparts. For only in this way can we get a better understanding of how the history of logic has evolved in close connection to the other parts of philosophy, and more importantly, only in this way do we have a chance to appreciate the peculiar features and insights of ancient logic." (p. 527)
23. Imbert, Claude. 1980. "Stoic Logic and Alexandrian Poetics." In *Doubt and Dogmatism. Studies in Hellenistic Epistemology*, edited by Schofield, Malcolm, Burnyeat, Myles and Barnes, Jonathan, 183-216. Oxford: Clarendon Press.
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See Chapter 10 *Stoic Disjunction*, pp. 252-275.
26. Kahn, Charles H. 1969. "Stoic Logic and Stoic Logos." *Archiv für Geschichte der Philosophie* no. 51:158-172.

"I turn now to the principal claim of Professor Hay's paper (*): that the logic of the Stoics was not exclusively a logic of propositions but that it included arguments whose major premiss was, in effect, a universally quantified conditional, " $(x) (If Ax, then Bx),$ " instead of the ordinary conditional composed of two self-contained sentences "If A, then B." Hay brings evidence of three sorts to bear in favor of this thesis. (1) First of all, there are the logical and historical considerations already alluded to: how could the Stoics have claimed to reduce all valid arguments, including the Aristotelian syllogism, to their five undemonstrated schemata, if they did not have some device equivalent to quantification"? (2) Secondly, there is the question of the epistemic function of logic: where the major premiss is a conditional such as If Plato lives, then Plato breathes interpreted truth-functionally, and I am able to draw the conclusion Plato breathes, how could I be in a position to know or believe the conditional premiss without already knowing or believing the conclusion? (For the truth of the conditional depends upon the truth of the consequent in this case, since the antecedent is taken as true.) But the epistemic problem will not arise in this form if the major premiss may be universally quantified. I do not need to know that Socrates breathes - I do not need to know anything about Socrates at all - in order to agree that if anything is alive, that same thing (or animal) breathes. (3) Furthermore, Hay calls our attention (and apparently for the first time) to several decisive texts in which the Stoics make theoretical use of generalized conditionals of the form 'If anyone is born under the Dog Star, he will not die at sea.' Finally (4) Hay suggests that the Stoic motive for the alleged reformulation of universal propositions as conditionals was their desire to avoid positing essences or classes or universals of any sort.

I am inclined to believe that Hay's principal thesis is correct, at least in principle; but it raises new problems almost as

serious as those it solves. First of all, did the Stoics realize that they were introducing quantification when they offered a conditional compounded in this way of two indefinite propositions? If so, this seems to defeat their claim that all valid arguments could be reduced to their five undemonstrated forms. But if they did not see this, they were poorer logicians than Aristotle at a crucial point they will have set up a propositional calculus only at the cost of distorting the facts concerning quantification. We seem to be faced with a dilemma. Either Stoic logic is based solely on the propositional connectives, and then it is epistemically sterile. (This appears to be Mueller's view.) Or else it involves generalized conditionals and a rule of instantiation, but then it is defective as logic since we are left without any account of the quantified conditional. (a) I suspect that the latter is likely to be true, and that by formulating indefinite conditionals to achieve generality, and then instantiating for a definite, ostensibly indicated subject, the Stoics believed that they could in fact do without quantification, i. e. without any theory involving 'all' and 'none.' " (pp. 163-164) (*) [*Stoic Use of Logic*, 1969]

(a) I have oversimplified in order to put the problem sharply. It is worth noting that the decisive text from *De Fato* is explicitly meta-linguistic: "If G (a generalized conditional) is true, then C (an ordinary conditional) is also true" (see Hay, note 15). Therefore arguments making use of such a rule of instantiation will be valid but not necessarily reducible to one of the five undemonstrated schemata (compare the examples in Mates, p. 64 and p. 65 n. 32). In the Symposium discussion in St. Louis several suggestions were made for reconstructing the Stoic generalized conditional without quantification theory, as the meta-linguistic representation for a "bundle of individual conditionals" (Quine, *Methods of Logic*, p. 13), much as an axiom schema may represent an infinite set of individual

axioms. I leave it to others to decide how far such a suggestion can be worked out systematically.

27. Kidd, Ian G. 1989. "Orthos Logos as a Criterion of Truth in the Stoa." In *The Criterion of Truth. Essays Written in Honour of George Kerferd*, edited by Huby, Pamela and Neal, Gordon, 137-149. Liverpool: Liverpool University Press.

28. Kneale, William, and Kneale, Martha. 1962. *The Development of Logic*. Oxford: Clarendon Press. Reprinted 1975 with corrections.

See Chapter III: The Megarian and the Stoics pp. 113-176.

29. Labarge, Scott. 2002. "Stoic Conditionals of Necessity and Explanation." *History and Philosophy of Logic* no. 23:241-252.

Abstract: "An examination of a particular passage in Cicero's *De fato* (Fat. 13-17) is crucial to our understanding of the Stoic theory of the truth-conditions of conditional propositions, for it has been uniquely important in the debate concerning the kind of connection the antecedent and consequent of a Stoic conditional should have to one another. Frede has argued that the passage proves that the connection is one of logical necessity, while Sorabji has argued that positive Stoic attitudes toward empirical inferences elsewhere suggest that that cannot be the right interpretation of the passage. I argue that both parties to the debate have missed a position somewhere between them which both renders a connection between antecedent and consequent that is not merely empirical and makes sense of the actual uses to which the Stoics put the conditional. This will be an account which grounds the connection between antecedent and consequent in *aprolêpsis*, a special kind of concept which plays a special epistemological role for the Stoics, especially in grounding scientific explanations. My contention will be that Stoic conditionals are true when there is a conceptually necessary connection between

antecedent and consequent such that the former explains the latter via *aprolêpsis*."

30. Leeman, Anton Daniël. 1954. "Posidonius the Dialectician in Seneca's Letters." *Mnemosyne* no. 7:233-240.
31. Lefebvre, René. 2007. "Représentation et évidence : les stoïciens face à leurs adversaires de l'Académie." *Elenchos.Rivista di Studi sul Pensiero Antico* no. 28:337-367.
32. Löbl, Rudolf. 1986. *Die Relation in der Philosophie der Stoiker*. Amsterdam: Rodopi.
Inhaltsübersicht: Literaturangaben 7; Einleitung 13; Teil I: 17; A. Physis 19; B. Logos 62; Teil II: 111; A. Die äusseren Relationen 113; B. Die inneren Relationen 129; C. Die transcendentale Relationen 134; Excursus: Zu Physik 141-150.
33. Long, Anthony Arthur. 1978. "Dialectic and the Stoic Sage." In *The Stoics*, edited by Rist, John M., 101-124. Berkeley: University of California Press.
Reprinted in: A. A. Long, *Stoic Studies*, Cambridge: Cambridge University Press, 1996, pp. 85-106.
34. Luhtala, Anneli. 2000. *On the Origin of Syntactical Description in Stoic Logic*. Münster: Nodus Publikationen.
Contents: Acknowledgments 9; 1. Introduction 11; 2. Ancient Grammar 16; 3. Truth, Meaning and Existence 30; 4. Aristotle 40; 5. The Stoics; 6. Apollonius Dyscolos 146; 7. General conclusions 193; Bibliography 197; Index Nominum 209-214.
"This study examines the dialectical origin of syntactical description in our traditional grammar. Two famous texts take pride of place in containing the first descriptions of a 'clause' in Greek literature, namely Plato's *Sophist* and Aristotle's *Peri hermeneias*. These descriptions arose in the context of a more general inquiry into the nature of truth and language which gave rise to the first speculations on the form of the logical proposition in Greek Antiquity. By establishing as the unit of propositional analysis a

combination of two linguistic items, *Onoma* ('name', 'noun') and *rhema* ('verb', 'predicate') these philosophers laid the foundation for the doctrine of the parts of speech which later constituted the core of ancient grammar. Their concern was to establish the two functional constituents of the proposition, roughly the subject and the predicate, by means of which true and false statements could be made. The object of their concern -- the minimal statement consisting of a noun and a verb -- came to figure as the point of departure for syntactical analysis when it began to be pursued in independent grammatical treatises. In the grammar of Apollonius Dyscolus (2nd century A.D.), which is our first extant grammatical treatise on syntax, syntactical description proceeds from the minimal self-sufficiency (*autoteleia*) of the linguistic expression. But the description of the minimal sentence by Apollonius bears witness to the distinctly Stoic origin of the notion of self-sufficiency." (p. 11)

35. Łukasiewicz, Jan. 1967. "On the History of the Logic of Propositions." In *Polish Logic 1920-1939*, edited by McCall, Storrs, 66-87. Oxford: Oxford University Press. Originally published in Polish as: "Z historii logiki zdań", *Przegląd Filozoficzny*, 37, 1934; translated by the author in German as: "Zur Geschichte der Aussagenlogik", *Erkenntnis*, 5, 1935, pp. 111-131. Translated in English also in: Ludwik Borowski (ed.), Jan Łukasiewicz, "Selected Works", Amsterdam: North-Holland, 1970, pp. 197-217.
36. ———. 1967. "Philosophical Remarks on Many-Valued Systems of Propositional Logic." In *Polish Logic 1920-1939*, edited by McCall, Storrs, 40-65. Oxford: Oxford University Press. Originally published in German as: "Philosophische Bemerkungen zu mehrwertigen Systemen des Aussagenkalküls", *Comptes rendus des séances de la Société des Sciences et des Lettres de Varsovie*, 23, 1930.

Translated in English also in: Ludwik Borowski (ed.), Jan Łukasiewicz, *Selected Works*, Amsterdam: North-Holland 1970, pp. 153-178.

37. Mates, Benson. 1949. "Stoic Logic and the Text of Sextus Empiricus." *American Journal of Philology* no. 70:290-298.

"The text of Sextus Empiricus contains a number of corrupt places which can easily be corrected by reference to a few technical terms and elementary concepts of Stoic logic. It is the aim of the present paper to prove this assertion with respect to a certain class of cases and, in so doing, to show that any future editor of Sextus ought to have a clear understanding of Stoic logic." (p. 290)

38. ———. 1953. *Stoic Logic*. Berkeley: University of California Press.

Second revised edition 1961.

Contents: I. Introduction 1; Chapter I. § 1: The problem § 2: Stoic authors to be considered § 3: Sources for Stoic logic; Chapter II. Signs, sense, and denotation 11; § 1: Exposition of the Stoic theory § 2: Comparison with modern theories; Chapter III. Propositions, truth, and necessity 27; § 1: Propositions § 2: Truth § 3: Necessity and Possibility; Chapter IV. Propositional connectives 42; § 1: Implication § 2: Disjunction § 3: Conjunction and the other logical connectives § 4: The interdefinability of the connectives; Chapter V. Arguments 58 § 1: Definition and Classification § 2: The five basic types of Undemonstrated Argument § 3: The Principle of Conditionalization § 4: The analysis of non-simple arguments § 5: Invalid arguments; Paradoxes; Chapter VI. Evaluations of Stoic logic 86; § 1: The judgments of Prantl and Zeller § 2: The confusion about *sunemmenon* - § 3: Conclusion; Appendix A. Translations 95; Appendix B. Glossary 132; Bibliography 137; Indices -141-148.

39. Mau, Jürgen. 1957. "Stoische Logik. Ihre Stellung gegenüber der Aristotelischen Syllogistik und dem Modernen

Aussagenkalkül."

40. Mignucci, Mario. 1965. *Il significato della logica stoica*. Bologna: Patron.
Indice: Avvertenza 7; Introduzione 9; Cap. I - LO STATUS QUAESTIONIS. 1. Le interpretazioni del Prantl e dello Zeller 17; 2. La rivalutazione della logica stoica 19; 3. L'interpretazione del Lukasiewicz 29; 4. Le posizioni successive al Lukasiewicz 33; 5. Discussione dell'interpretazione del Lukasiewicz 40; Cap. II - LA CONCEZIONE DELLA LOGICA. 1. La rappresentazione 67; 2. La conoscenza intellettuale 80; 3. La definizione di esprimibile 88; 4. L'incorporeità degli esprimibili 96; 5. La logica come scienza filosofica 103; 6. La natura della dialettica 109; Cap. III - LA DOTTRINA DELLE PROPOSIZIONI. 1. La definizione di proposizione 119; 2. La polemica della scuola megarica sulla validità del condizionale 130; 3. La concezione stoica del condizionale 139; 4. Le proposizioni congiuntive e disgiuntive 148; Cap. IV. LA TEORIA DEGLI ARGOMENTI. 1. La definizione di argomento 157; 2. Gli argomenti anapodittici 166; 3. La teoria degli anapodittici e la sillogistica aristotelica 178; Bibliografia 191; INDICI. Luoghi citati 201; Nomi di persona 209-212.
41. ———. 1967. "Il problema del criterio di verità negli stoici antichi." In *Posizione e criterio del discorso filosofico*, edited by Giacon, Carlo, 145-169. Bologna: Patron.
42. ———. 1988. "The Stoic Notion of Relatives." In *Matter and Metaphysics. Fourth Symposium Hellenisticum (Pontignano, August 21-28, 1986)*, edited by Barnes, Jonathan and Mignucci, Mario, 129-221. Napoli: Bibliopolis.
"The fragments of the Stoics which are explicitly concerned with a theory of relations are few, scattered and difficult to interpret. The largest of them is preserved in Simplicius' commentary on the *Categories* (165.32 ff.;SVF ii 403) and it expounds an important distinction which the Stoics made between two kinds of relatives. This doctrine is attributed to

the Stoics, but no representative of the school is mentioned. Echoes of it are reflected in some sceptical arguments reported by Sextus Empiricus (*M* VIII 455-456) and Diogenes Laertius (IX 87-88) (1). Besides, there are some related passages in the scholia on Dionysius Thrax's *Ars grammatica* which are supposed to go back to Apollonius Dyscolus (II century A.D.), where, although the Stoics are not explicitly named, Stoic material is believed to be used and referred to (2). There is also a text of Sextus (*M* VIII 453-454; *SVF* II 404) in which a general definition of relatives is attributed by him to the Dogmatists and reasons can be given for saying that his Dogmatists must be identified with the Stoics. Finally, some passages in which the name of Chrysippus is tied to questions which are supposed to concern our problems are difficult to interpret and on closer inspection they reveal themselves not to pertain to the theory of relatives (3).

In the face of this complicated situation in our sources, I will examine first Simplicius' passage, trying to disentangle it from spurious connections with other parts of the Stoic doctrine which have generated more than one misunderstanding of it. Secondly, I will inquire to what extent a possibly general definition of relatives implied in Simplicius' distinction is consistent with the statements reported by other sources, in order to determine whether Simplicius' report can be inserted in a coherent framework. This sketch of the plan of our inquiry shows that we confer a central role on Simplicius' passage, and this assumption might be disputed, since Simplicius is a late authority and no Stoic master of the first generation is mentioned in it. We will discuss these problems later. Whatever their solution might be, it must be pointed out that Simplicius' text is almost the only one in which a relevant aspect of the Stoic doctrine of relatives is expounded and discussed. The other sources are much vaguer and mostly concerned with a general characterization of the notion of relative. Therefore,

it is difficult in this situation not to confer a special position on Simplicius passage." pp. 129-130

1) These texts are not found in von Arnim's collection. They will be discussed in section VIII.

(2) These passages too are not in von Arnim. We will examine them later (cf. sections XI-XII).

(3) I am thinking especially of three passages we will consider later, namely Varro *De lingua latina* X 59 (SVF a 155); Plutarch, *De Stoicorum repugnantibus* 1054EF (SVF II 550); Aulus Gellius *Noctes atticae* VII 1, 1-6 (SVF II 1169): cf. sections XIV and XV.

43. ———. 1993. "The Stoic *Themata*." In *Dialektiker und Stoiker. Zur Logik der Stoa und Ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor, 217-238. Stuttgart: Franz Steiner.
44. ———. 1999. "The Liar Paradox and the Stoics." In *Topics in Stoic Philosophy*, edited by Ierodiakonou, Katerina, 54-70. Oxford: Clarendon Press.
45. Milne, Peter. 1995. "On the Completeness of Non-Philonian Stoic Logic." *History and Philosophy of Logic* no. 16:39-64. Abstract: "The majority of formal accounts attribute to Stoic logicians the classical truth-functional understanding of the material conditional and exclusive disjunction. These interpretations were disputed, some Stoic logicians favouring modal and/or temporal analyses; moreover, what comes down to us of Stoic logic fails to secure the classical interpretations on purely formal grounds. It is therefore of some interest to see how the non-classical interpretations fare. I argue that the strongest logic we have good grounds to attribute to Stoic logicians is not complete with respect to the non-classical interpretations of disjunction and the conditional."
46. Mueller, Ian. 1969. "Stoic and Peripatetic Logic." *Archiv für Geschichte der Philosophie* no. 51:173-187.
"We know that one of the issues dividing the Stoics and the Peripatetics concerned the use of logic. Alexander [of

Aphrodisias] (1) insists that only Peripatetic logic is an organon for philosophy, an instrument for making unknown things known through known premisses. Since the Stoics called logic a part of philosophy, they may well have considered their propositional logic a theoretical discipline for which epistemological considerations were irrelevant. This modern attitude seems quite commensurate with the Stoics' presentation of logic. They seem to have been interested in technical devices and formalization for its own sake.

I suggest, then, that an important disagreement between the Peripatetic and Stoic logicians concerned the power of their respective logics to represent arguments. The Peripatetic claims were that all scientific proofs are categorical syllogisms and that the inference schemata of the Stoics represented techniques of argument having no place in science. The Stoic reply was that the first claim is false since there are very elementary relational arguments in mathematics which are not syllogisms. Moreover, they pointed out that all conclusive arguments, including categorical syllogisms, could be represented as propositional arguments by a (trivial) technical device. Formally the Stoics held an unassailable position, but they were vulnerable to attack on methodological grounds, since establishing the truth of the premisses of the newly formulated argument seemed to involve making an inference in terms of the old logic. The Peripatetics therefore insisted on the claim, believed for many centuries after them, that their logic was the instrument of science. We do not know the Stoic response to this claim, but it is reasonable to suppose that they retreated to the view that the theory of deductive inference was a technical discipline studied for some ethical end perhaps, but not as the method of scientific discovery." (p. 184)

(1) *In Analyticorum Priorum* 1 ff.

47. ———. 1978. "An Introduction to Stoic Logic." In *The Stoics*, edited by Rist, John M. Berkeley: University of California Press.

"The charge of uselessness permeates the ancient literature on Stoic logic. Alexander [of Aphrodisias] is very concerned to defend Aristotelian logic as the tool(organon) of philosophy and science, a means for making unknown things known through known premises. For Sextus no logic is capable of serving these functions. The gist of both men's attack on Stoic logic is that with its arguments there is no way to establish the premises without first establishing the conclusion. The attack is usually made in terms of the first undemonstrable argument and depends upon the truth-functional interpretation of the conditional. Suppose one wishes to prove 'the second' by establishing 'the first' and 'If the first the second.' Then if 'the first' is established, the only way to establish 'if the first the second' is to establish 'the second,' i.e., to establish the conclusion one is trying to prove. Similar objections could be raised against the other undemonstrable arguments. In each case, when the second premise is taken as true, then the obvious truth-functional argument for the first premise requires establishing the truth of the conclusion. There is no way out of this situation, a fact that strongly suggests that Sextus's insistence on applying the truth-functional interpretation to the conditional represents an argumentative device rather than an accurate reflection of standard Stoic doctrine. If the first premise of an undemonstrable argument expresses a stronger than truth-functional connection between its component propositions, there is no reason why the first premise cannot be established independently of the conclusion.

Of course, the position I have just ascribed to the Stoics means that philosophically a great deal of weight must be placed on the knowledge of necessary connections between propositions. Many of Sextus's arguments are directed

against the possibility of such knowledge. To consider these arguments would take us outside the domain of logic and into epistemology. The point I wish to make is that the Stoics could have claimed universality for their propositional logic without subjecting themselves to attacks on grounds of uselessness. But to what use did the Stoics put their logic? It is tempting to suppose that the Stoics might have treated logic as a technical discipline developed for its own sake. The picture of Chrysippus analyzing innumerable arguments into the undemonstrable points makes it seem certain that to some extent logic was pursued for its own sake. But at least some Stoics thought of logic as more than a self-sufficient technical discipline.

(...)

The most important inferences from signs would be those based on the first undemonstrable syllogism. Questions about the viability of inferences from sign to thing indicated or commemorated would almost certainly end up as questions about the connection asserted to hold in the first premise, i.e., as questions of metaphysics or epistemology. One cannot expect logic to settle such questions, nor is there any reason to think the Stoics expected it to. The thrust of their logic was to provide a framework in which questions of inferential validity could be settled and questions that fell outside of logic, e.g., whether sweat implies the existence of pores, made precise. It seems fair to say that Stoic achievement in this area remained unparalleled until the time of Leibniz." (pp. 22-25)

48. ———. 1979. "The Completeness of Stoic Propositional Logic." *Notre Dame Journal of Formal Logic* no. 20:201-215.

"In this paper I wish to pursue in more detail the question of the completeness of Stoic propositional logic. I shall bring out certain anomalies in Becker's [1957] argument which obscure the precise sense in which his system is complete. The Kneales' system (*) will be shown to be complete in a

stronger sense than Becker's but not to be as historically plausible a reconstruction of the Stoic theory. In conclusion I shall suggest a modification of both systems which is historically more plausible than either and also complete in the stronger sense. In the course of the paper I will also discuss other logical and historical points about the systems. I shall take for granted the truth-functionality of the Stoic propositional connectives but disregard interdefinability relationships. I will also formulate the systems of Becker and the Kneales in ways which diverge slightly but unproblematically from their own presentations." (p. 202) (*) William and Marta Kneale, *The Development of Logic*, Oxford, 1962.

49. Mühl, Max. 1962. "'Der Logos Endiathetos und Prophorikos" Von der älteren Stoa bis zur Synode von Sirmium 351." *Archiv für Begriffsgeschichte* no. 7:7-56.
On the history of the distinction between "internal discourse" and "uttered discourse".
50. Nasieniewski, Marek. 1998. "Is Stoic Logic Classical?" *Logic and Logical Philosophy* no. 6:55-61.
Abstract: "In this paper I would like to argue that Stoic logic is a kind of relevant logic rather than the classical logic. To realize this purpose I will try to keep as close as possible to Stoic calculus as expressed with the help of their arguments."
51. Nasti de Vincentis, Mauro. 1981. "Logica scettica e implicazione stoica. A proposito di *Adv. Math.* VIII 462-481." In *Lo scetticismo antico. Vol. II*, edited by Giannantoni, Gabriele, 501-532. Napoli: Bibliopolis.
52. ———. 1984. "Stopper on Nasti's Contention and Stoic Logic." *Phronesis. A Journal for Ancient Philosophy* no. 29:313-324.
Reply to M. R. Stopper [pseudonym of Jonathan Barnes], "Schizzi Pirroniani", *Phronesis*, 28, 1983, pp. 265-297.
53. ———. 1988. "The Third and Fourth Account of Conditionals in Sextus Empiricus." In *Temi e prospettive*

della logica e della filosofia della scienza contemporanee. Vol. I: Logica, edited by Cellucci, Carlo and Sambin, Giovanni, 219-226. Bologna: CLUEB.

54. ———. 1989. "Stoic Implication and Stoic Modalities." In *Le teorie delle modalità. Atti del Convegno Internazionale di storia della logica*, 258-263. Bologna: CLUEB.

"A new account of Stoic connexive conditional is given, according to which (in order to agree with textual evidence) the truth-conditions for the so-called Chrysippean implication are a function of the modality of the clauses."

55. ———. 2002. *Logiche della connessività. Fra logica moderna e storia della logica antica*. Bern: Haupt. Indice: Premessa 7; Introduzione 11; 1. L'interpretazione classica e le sue varianti 39; 2. Lapars destruens: le difficoltà dell'interpretazione classica 69; 3. Lapars construens: verso una nuova interpretazione 95; 4. Obbiezioni, risposte e conferme 123; 5. Implicazione crisippea e implicazione boeziana 151; 6. Considerazioni conclusive e problemi aperti 173; Appendice: La dottina boeziana dellarepugnantia - Scelta di testi 193; Riferimenti bibliografici 231-232. Recensione di Luca Castagnoli, *Elenchos*, 25, 2004, pp. 179-192.

56. ———. 2004. "From Aristotle's Syllogistic to Stoic Conditionals: *Holzwege* or Detectable Paths?" *Topoi. An International Review of Philosophy* no. 23:113-137. "This paper is chiefly aimed at individuating some deep, but as yet almost unnoticed, similarities between Aristotle's syllogistic and the Stoic doctrine of conditionals, notably between Aristotle's metasylllogistic equimodality condition (as stated at *Prior Analytics* I 24, 41b27-31) and truth-conditions for third type (Chrysippean) conditionals (as they can be inferred from, say, Sextus Empiricus *Outlines of Pyrrhonism* II 111 and 189). In fact, as is shown in §1, Aristotle's condition amounts to introducing in his (propositional) metasylllogistic a non-truth-functional implicational arrow ", the truth-conditions of which turn out

to be logically equivalent to truth-conditions of third type conditionals, according to which only the impossible (and not the possible) follows from the impossible. Moreover, Aristotle is given precisely this non-Scotian conditional logic in two so far overlooked passages of (Latin and Hebraic translations of) Themistius' Paraphrasis of *De Caelo* (CAG V 4, 71.8-13 and 47.8-10 Landauer). Some further consequences of Aristotle's equimodality condition on his logic, and notably on his syllogistic (no matter whether modal or not), are pointed out and discussed at length. A (possibly Chrysippean) extension of Aristotle's condition is also discussed, along with a full characterization of truth-conditions of fourth type conditionals."

57. ———. 2006. "*Boethiana*. La logica stoica nelle testimonianze di Boezio: nuovi strumenti di ricerca." *Elenchos* no. 27:377-408.
"In view of the importance of Boethius' "In Ciceronis Topica" as a source for Stoic logic, argues for the constitution of an index of divergent readings between the editions of Orelli (Zurich 1833) and Migne, including those omitted by Stangl (1882). Such an index would show that while Orelli's edition is better, sometimes the reading of Migne is to be preferred. Includes considerations on the gradual Stoicization of Aristotelian syllogistics, on Boethius' reliability as a source for Stoic logic, and on the genuine *editio princeps* of Boethius' "De topicis differentiis" (Rome 1484, rather than Venice 1492.)"
58. ———. 2006. "Conflict and Connectedness. Between Modern Logic and History of Ancient Logic." In *Logic and Philosophy in Italy. Some Trends and Perspectives*, edited by Ballo, Edoardo and Franchella, Miriam, 229-251. Monza: Polimetrica.
59. Normore, Calvin G. 1991. "Medieval Connectives, Hellenistic Connections; the Strange Case of Propositional Logic." In *Atoms, Pneuma, and Tranquillity. Epicurean and Stoic*

Themes in European Thought, edited by Osler, Margaret J, 25-38. Cambridge: Cambridge University Press.

60. Nuchelmans, Gabriel. 1973. *Theories of Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*. Amsterdam: North-Holland.
Chapter 4. The Stoic *lekton* 45; 5. The Stoic *axioma* 75-88.
"The Stoic conception of the bearers of truth and falsity centres around the notion of *axioma*. As an *axioma* is a species of the genus *lekton*, I shall first discuss the nature of the *lekton*. It will be maintained that the word *lekton* must have had several shades of meaning, although the deplorable state of our sources makes it impossible to reach a high degree of certainty about the exact borderlines between these different nuances and their ascription to definite authors or periods." (p. 45)
"As we saw in the foregoing chapter, an *axioma* is a complete and independent *pragma* which is expressed in a speech act of asserting. The complete and independent *pragma* is the thought of an action or passion and its indispensable complements. In so far as this *pragma* is put into words it is a *Iekton*; in so far as it is expressed in a speech act of asserting it is an *apophanton* or *axioma*, an asserted thought-content. A *pragma* such as 'Plato liking Dion' can be expressed in different speech acts: for instance, in a yes-or-no question, 'Does Plato like Dion?', in a wish, 'May Plato like Dion', or in an assertion, 'Plato likes Dion'. On the other hand, the same type of speech act, say asserting, may be related to different *pragmata*; for I may assert many different things. Reflections of this kind must have led the Stoics to a distinction between the generic element of the *pragma* or *Iekton* and the specific element of the speech act in which a certain thought is expressed. As a rule, then, an *axioma* is a thought-content which is in fact asserted. Nevertheless, the Stoics used the name *axioma* also for the antecedent and consequent of a conditional, although as parts of the composite whole these

are not actually asserted. This may be accounted for by the fact that *axioma* originally meant that which is assumed or taken to be true. Or, as I suggested at the end of 4.2.5, the Stoics may have regarded the antecedent and consequent as potential *axiomata*, just as they held that a privative assertion of the form 'Un(kind he is)' contains the potential *axioma* 'Kind he is'. Such an assertable would lie somewhere between the neutral *pragma* or *Iekton* and the factually asserted *axioma*." (p. 75)

61. Orth, Emil. 1959. "Lekton = Dicibile." *Helmantica* no. 32:221-226.
 "L'article est en latin. L'Auteur y explique le sens de *lekton*, terme stoïcien, en analysant la gnoseologie stoïcienne, sans faire appel aux textes. Il ajoute un bref aperçu de l'histoire du terme où il signale, entre autres choses, qu'Apulée, *Peri hermeneias*, emploie *pronuntiabile* pour *lekton* et Augustin, *Principia Dialecticae*, 5, P.L., 32, 1411, *dicibile*; Isidore de Seville, *Etymol.* 2, 22, 2, *dictio*. L'article n'est pas conçu comme une recherche philologique, mais comme un exposé théorique." *Bulletin Augustinien pour 1959*.
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71. ———. 1982. "The Stoic Criterion of Identity." *Phronesis. A Journal for Ancient Philosophy* no. 27:255-275.
72. ———. 1984. "The Negated Conjunction in Stoicism." *Elenchos. Rivista di Studi sul Pensiero Antico* no. 5:311-316.
73. ———. 1989. "Le critère d'identité chez les Stoïciens." *Revue de Métaphysique et de Morale* no. 94:513-533.
Traduction française de The Stoic Criterion of Identity (1982).
74. Speca, Anthony. 2001. *Hypothetical Syllogistic and Stoic Logic*. Leiden: Brill.
Contents: Acknowledgments VII; Abstract IX; Preface XI-XIII; 1. The Aristotelian Background 1; 2. The Greek Commentators on Aristotle 35; 3. Boethius: On hypothetical syllogisms 67; 4. Boethius: On Cicero's Topics 101; References 135; General index 139; Index locorum 141.

75. Stakelum, James W. 1940. *Galen and the Logic of Propositions*. Romae: Angelicum.

"These pages, restrictedly entitled *Galen and the Logic of Propositions*, originally formed part of an academic dissertation, *Galen's Introduction to Dialectic*. The threefold purpose of the larger study was to present Galen's *Dialectic* in a clear light, to examine his doctrine and weigh its importance as to originality or historical precedent, and from these considerations to draw conclusions as to its influence on succeeding generations. The doctrine, scattered throughout the Galenic text, was gathered under five headings: I. Galen's Introductory Remarks; II. Logic of Propositions; III. Aristotelian Term Logic; IV. Other Classes of Syllogisms; V. Applied Logic. Owing to the limited size of the volumes of this series, published under the sponsorship of Father I. M. Bochenski, O. P., it is impossible to publish here the whole result of the inquiry. Accordingly, we have selected for presentation our Introduction -- rearranged as Part One in several short chapters -- and the most important portion of our examination of Galen's *Dialectic*, dealing with the logic of propositions. The latter section is divided into three parts. A brief conclusion completes the essay.

It is traditional to attribute to Galen an eminent position in the field of logic, but rarely do we find specific reasons assigned for this eminence. The composition of this dissertation has, for me, definitely determined Galen's position in the history of logic. It is hoped that it will serve a similar purpose for others."

76. Stopper, M.R. 1983. "Schizzi Pirroniani." *Phronesis. A Journal for Ancient Philosophy* no. 28:265-297.
Critical notice of: Gabriele Giannantoni (ed.), *Lo scetticismo antico. Atti del convegno organizzato dal Centro di studio del pensiero antico del C.N.R., Roma 5-8 novembre 1980*, Napoli: Bibliopolis, 1981.

M. R. Stopper is a pseudonym of Jonathan Barnes.

77. Stump, Eleonore. 1987. "Boethius's in Ciceronis Topica and Stoic Logic." In *Studies in Medieval Philosophy*, edited by Wippel, John F., 1-22. Washington: Catholic University of America.

"Besides what In *Ciceronis Topica* shows us about Boethius, it is also a valuable source for us as a witness to the thought and culture of his period.

(...)

"But perhaps the most interesting unexplored section in In *Ciceronis Topica* is Boethius's presentation of Stoic logic, and that is the part I want to concentrate on in this paper. Rather than dwell on the main theme of *In Ciceronis Topica*, the art of discovery and its instruments, the *Topics*, I want to focus instead on just that small part of Boethius's commentary in which he relates the *Topics* to Stoic dialectic or logic and reveals his understanding of that part of Stoicism. We are beginning to understand the ancient art of discovering arguments, and it has garnered increasing attention among contemporary scholars. But as far as I know, Michael Frede (30) is alone among recent historians of philosophy in considering Boethius's contribution to our understanding of Stoic logic; and even he gives only a brief discussion of a small part of the relevant Boethian text. So in what follows I will concentrate on just the fifth book of *In Ciceronis Topica*, in which Boethius discusses the so-called undemonstrated modes or argument forms of the Stoics. I need to make plain here that my area of interest and expertise is Boethius and not the Stoics; but I think that in *In Ciceronis Topica* Boethius sheds some light on a vexing problem which has troubled students of Stoic logic for some time." (pp. 6-7)

(30) Michael Frede, *Die stoische Logik*, (Göttingen: Vandenhoeck and Ruprecht, 1974), pp. 148-53, 160-62.

78. Tracy, Kevin. 2006. *The Development of Dialectic from Aristotle to Chrysippus*, University of Pennsylvania.

Available at ProQuest Dissertation Express order number: 3225558.

Abstract: "From Aristotle onward, formal logic was an element of ancient Greek dialectic (*dialektiké*).

Aristotle's *Prior Analytics* (4th century BCE) is the earliest evidence of a formal logic in antiquity. The evidence for the formal logic of the Stoic philosopher Chrysippus (3rd century BCE) is fragmentary; nonetheless it makes clear that not more than a century or so after *Prior Analytics*, Chrysippus revolutionized formal logic. The scholarship on Stoic logic has not yet presented the history of dialectic from Aristotle to Chrysippus as an intelligible narrative. Without such a narrative, one cannot explain what, in general, motivated the innovations of Chrysippus, what made Stoic logic coherent as a unified project, or what relationship that project had to earlier work in logic. This dissertation approaches the problem through the presentation and interpretation of the ancient source material. First it describes the logical doctrines of Aristotle, Theophrastus, and the 'Megarics' in such a way as to make clear what questions these predecessors left for Chrysippus. It then describes how Chrysippus addressed these questions. Finally, it uses the resulting narrative to give a detailed account of Stoic formal logic. The dissertation yields five principal conclusions. First, neither the Peripatetics or the 'Megarics' described logical forms of propositional logic; Chrysippus was the first to do so. Second, the guiding aim of Chrysippus' logic was to avoid adopting a semantic stance in describing logical forms and explaining logical relationships. Third, the Stoics distinguished 'valid' (*hugies*) from 'true' (*aléthes*), so that *sunartésis* is a standard for the validity rather than the truth of the Stoic conditional (*sunhémmenon*). Fourth, the Stoics produced derivations for categorical arguments in their deduction system. Fifth, the Stoic deduction system is roughly analogous to the first-order fragment of Frege's system, except on two points: it

most likely was not designed to accommodate the use of polyadic predicates with multiple quantifiers, although the possibility for doing so inheres in its approach to the analysis of propositions, and it uses the 'natural' approach rather than the 'axiomatic' approach of Frege."

79. Verbeke, Gérard. 1977. "Der Nominalismus Der Stoischen Logik." *Allgemeine Zeitschrift für Philosophie* no. 3:36-55.
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81. ———. 1996. "Meaning and Role of the Expressible (Lekton) in Stoic Logic." In *Knowledge through Signs. Ancient Semiotic Theories and Practices*, edited by Manetti, Giovanni, 133-154. Turnhout: Brepols.

"In his critical survey of Stoic dialectic Sextus states that the doctrine of the expressible, which plays an important part in the theory of knowledge, has been repeatedly put into question:(1) the *lekton* is an incorporeal, together with time, place and empty space, it belongs to the group of incorporeal objects generally accepted by the Stoics. In their opinion incorporeals are not active, they are unable to effect or produce something: yet they are indispensable in view of a coherent understanding of the universe.(2) Within this framework it was agreed that each argument is composed of incorporeal expressibles, since it is a combination of sentences which are considered to be complete *lekta*.(3) The question however was asked whether expressibles are really necessary, if they are totally ineffective. Even the meaning of the notion is questionable: it is obviously related to language, but it is not a component neither of spoken nor of written language. In other words it is not a verbal utterance and yet it is referred to by linguistic terms.(4) So it seems to have a definite function in the Stoic theory of knowledge."
(p. 133)

(1) Sextus, M 8. 336. The author states that the existence of expressibles has been heavily discussed: there was no agreement about this issue. In some other passage Sextus even speaks of an unending debate (8. 262). Sextus lived in the second half of the second century and in the beginning of the third A.D.: at that time Stoicism was still very influential. No other philosophical school ever accepted this doctrine, but it was not disregarded: philosophers had to cope with it especially in their dialectic.

(2) Sextus, M 8. 262. An incorporeal object could not affect anything, nor could it be affected. For it could only be affected by something corporeal, and that is excluded, since corporeal and incorporeal are not on the same level.

(3) Sextus, M 8. 260-261; 8. 404: every proof is composed of incorporeal expressibles. In Sextus' opinion a vicious circle is unavoidable.

(4) Sextus, M 8. 264: according to Sextus *lekta* are signified and among them are also propositions, which are regarded as complete expressibles.

82. Viano, Carlo Augusto. 1958. "La dialettica stoica." *Rivista di Filosofia* no. 49:179-227.

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84. ———. 1984. "L'originalité de la logique mégaro-stoïcienne par rapport à la logique d'Aristote." *Diotima* no. 12:172-174.

85. White, Michael J. 1986. "The Fourth Account of Conditionals in Sextus Empiricus." *History and Philosophy of Logic* no. 7:1-14.

"This paper develops an interpretation of the fourth account of conditionals in Sextus Empiricus's *Outlines of Pyrrhonism* that conceptually links it with contemporary 'relevance' interpretations of entailment. It is argued that

the third account of conditionals, which analyzes the truth of a conditional in terms of the joint impossibility of antecedent and denial of consequent, should not be interpreted in terms of a "relative" incompatibility of antecedent and denial of consequent because of stoic acceptance of the truth of some conditionals of the form $p \rightarrow \neg p$ and its converse. Rather, It is suggested, ancient attempts to avoid the so-called paradoxes of implication involve the fourth account of conditionals. I hypothesize that this account is related to stoic attempts to define truth conditions for conditionals in terms of a theory of the concludency (validity) of arguments in opposition to the more common procedure (represented by the first three accounts of conditionals) of specifying truth conditions for conditionals 'semantically' and using those truth conditions in the development of a theory of argument validity."

86. Zarnecka-Bialy, Ewa. 1979. "Stoic Logic as Investigated by Jan Lukasiewicz." *Reports on Philosophy* no. 3:27-40.
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"There has been considerable growth in the understanding and estimation of Stoic logic in the last thirty years, yet an important dimension of this Stoic achievement has not been grasped. Stoic logic was broadly conceived to include their theories of knowledge and perception, and the theory of perception provides the starting point and foundation of their logic. It is essential to the structure and unity of that logic that the Stoics take perception to be propositional. Starting from a new interpretation of the Stoic conception of *phantasia* as propositional perception, this study offers a view of Stoic logic that brings out the continuity linking perception, predication, inferential signs and proof. For Plato and Aristotle the basic objects of perception are qualities. In effect they develop a phenomenological analysis, underpinned by a physiological conception of sensation. The Stoics take this over as an account of sensation, but they establish the theory of perception at a higher level of complexity. For the Stoics the objects of perception are not qualities nor discrete things or bodies but rather have the form of fact, event or situation, relating qualities to things and things to each other. In perceiving we are trying to make sense of things. This means that both inference (drawing on past perception) and judgment (i.e. judging that something holds in reality) are involved in perception from the start. Conversely, the logical capacities

of the mind, extending through logical signs to proof, carry forward a revelatory power inherent in perception. The propositional character of perceptions does not derive from language. In the Stoic analysis perceiving picks out a focus or subject and links a predicate to it, and these are logical entities, strictly distinguished, terminologically and in their discrete treatment, from what are linguistic elements, the grammatical subject and predicate. What is predicated of the subject is generally doing or undergoing some action. This linking of elements within perception is at the same time propositional in the sense that it pro-poses something, that is, makes a truth- or reality-claim. What is perceived is by that very act taken to be the case, to be real. To translate '*phantasia*' as 'perception' is unusual but justified, even required, in Stoic contexts. The term undergoes striking changes in meaning from Plato through Aristotle to the Epicureans, Sceptics and Stoics, which must be reflected in differing translations. For Plato it is misleading 'appearance', sensation wrongly taken as revealing reality. In some of the applications of the term in Aristotle the translation 'imagination' seems appropriate, while in others something like 'representation' or 'impression' is called for, either in a neutral sense or with a problematic cast akin to the Platonic and Sceptic versions. In the Hellenistic schools '*phantasia*' (often in the plural) designates not a faculty but particular mental events. It is usually taken to mean 'impression' or 'mental presentation'. This is apt for the Sceptics, for whom a further act would be needed to add belief to what is present to the mind and affirm it as real. But 'perception' is the translation called for by Stoic usage. To translate it as 'presentation' in Stoic arguments would be to concede a damaging point of contention to their Sceptic critics by eliding its intrinsic reality claim, its propositional character. To understand what the Stoics are doing to and with the idea of *phantasia*, we must see it in relation to the different

purpose and character given the term first in Plato, then in Aristotle, and in those contemporary antagonists of the Stoics, the Sceptics and Epicureans. The starting point is Plato's origination of the notion *phantasia*, taken together with his analysis of predication or what constitutes 'statement', in the *Theaetetus* and *Sophist*. Building on the connection of *phantasia* and statement, the Stoics reverse the tendency which Plato embodies in his coinage in that they try to establish confidence in what *phantasia* reveals, whereas Plato took such confidence to be necessarily misplaced.

Indeed, the purpose of his coinage (derived from '*phainesthai*', 'to appear', meaning appearance in contrast to reality or being) was to embody the confusion of 'it seems to me' and 'it is' and so to show up the fundamental error of those who rely on the senses as revealing reality. To trust the senses as a basis of knowledge opens one to distortion from perspective and the illusory character of objects that never are the same." pp. 1-2.

5. Bundy Murray Wright. *The Theory of Imagination in Classical and Medieval Thought*. Urbana: University of Illinois, 1927.
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"As the Stoics (particularly through the status they grant to apprehensive representation) work out the relationship between perception and discourse, their definition of representation as alteration rather than impression may be understood as an effort to uphold perceptive multiplicity. I endeavour to find out how the multiplicity which perception implies is to be transcribed into discourse, and why such a transcription requires us to distinguish between two ways of partitioning discursive language, which are hinted at by the two expressions *mère tou logou* and *stoicheia tou logou*."
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"(1) During the creative period of Stoicism grammar was still in its infancy as a determinate field of study. I mention this fact because, as is well known, the Stoics were enormously influential on the Graeco-Roman grammatical tradition, which extends from the later Hellenistic epoch into the Christian period of the Roman Empire. Recourse to the Stoic influence on that tradition, excellently facilitated now by Karlheinz Hülser's collection (1987), can give the impression that these philosophers were merely pioneers in starting what the grammarians carried forward more fully and systematically. I want to suggest that such an impression may be seriously misleading in two respects.(2) First, it implies, incorrectly I believe, that the Stoics approached language as a phenomenon calling *primarily* for the kind of grammatical and syntactical description later grammarians developed. Secondly, it fails to identify the philosophical considerations that underpin the Stoics' principal interests in language. The Stoics had some splendid intuitions about the phonetic, grammatical and semantic levels of linguistic structure. Although these bear directly on the development of traditional grammar, they also seem to have clear affinities with what contemporary experts in linguistics call universal grammar.

The material I have chosen in order to make this point will be drawn primarily from sections of Diogenes Laertius' doxography of Stoicism (7.41-83). This is our only comprehensive account of "the logical part" of Stoic philosophy. I shall be dealing mainly with Diogenes' section "on utterance" (*peri phonés*) or "on signifiers" (*peri semainonton*), which forms the first part of the subdivision of "dialectic" (D.L. 7.55-62). The second part of that subdivision (D.L. 7.63-82) is "on significations" (*peri*

semainomenon). This division of dialectic into signifiers and significations has a clear rationale, as we shall see, but it too can yield misleading impressions, especially if it is taken to imply that the subdivisions are independent of one another or that there are no superordinate concepts that unite them. I shall argue that there are two such concepts, (*phantasia* and *logos*, and that these together provide the foundations of the Stoic theory of language and logic.(3) There is a third general point that I want to address. Scholars have become accustomed to making a sharp distinction between the Stoic concept of linguistic signs (words and sentences) and their concept of *semeion*.(4) They applied the latter term (as distinct from the term *semainon*) to a pattern of sign-inference from a fact or proposition that is evident to a fact or proposition that is non-evident. It so happens that nothing is said about sign-inference in Diogenes Laertius' doxography of Stoic logic.(5) Whatever the explanation for this omission may be, it cannot be doubted that the Stoics classified sign-inferences under the "significations" heading of the division of dialectic. As such, they are not linguistic signs but a class of propositions *signified by* linguistic signs. The antecedent or "if" clause of a sign inference is a meaning or sayable (*lekton*), not the sentence by which this meaning is expressed, and what the "if" clause is the sign for is the truth value of its consequent and the connexion of that truth value to itself. However, what we should conclude from this is not that sign-inference is a function of logic *as distinct from* language, but that it is a normative function of language, i.e., language in its epistemic and truth-signifying capacity. Not only do sign-inferences require language for their expression; they are also tied to language as *lekta*, or sentence content. Correspondingly, language is tied to *lekton* (including sign inferences) for its semantic content. The Stoics applied the term *logos* both to significant utterances (linguistic signifiers) and to sign-inferences of

the form: if *p*, then *q*. The presence of *logos* on both sides of the division of dialectic is hardly inadvertent. I take it as an indication that what the Stoics were seeking to elucidate was a unitary science of discourse, which would comprehend both linguistic signs and sign-inferences without reducing one to the other." pp. 109-110

(1) (...) I have deliberately focused upon a limited range of texts, and I say virtually nothing about the antecedents of Stoic doctrines or their reception by later philosophers and grammarians. That is due in part to reasons of time and space, and also to the excellent studies covering these matters by Ax (1986), Frede (1977, 1978) and others.

However, given the extremely fragmentary nature of our evidence, it also seemed to me important to focus rather narrowly on texts which have at least the appearance of being systematically Stoic and uncontaminated by other material. Hence my concentration on the "logical" doxography of Diogenes Laertius 7.

(2) The three studies from which I have learned most about the complex relation between Stoicism and the work of grammarians are Lloyd (1971) and Frede (1977, 1978).

(3) There is no novelty about this claim. Its implications are explored by Imbert (1978) and Manetti (1988), and I dealt with them at some length in Long (1971b). My main point here is to elucidate the primacy attached to *phantasia* in Stoic logic.

(4) See for instance Long (1971b: 84-88).

(5) This is noted and explored by Ebert (1991: 54 ff.).

22. Manetti Giovanni. "Perception, Encyclopaedia, and Language among the Stoics." *Versus. Quaderni di Studi Semiotici* 50%1 (1988): 123-144.

23. ———. *Theories of the Sign in Classical Antiquity*.

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25. Panaccio Claude. *Le Discours Intérieur. De Platon À Guillaume D'ockham*. Paris: Editions du Seuil, 1999.
Sur ce livre voir: *Laval Théologique et Philosophique*, vol. 57 n. 2 (June 2001).
Sur les Stoiciens, voir le Chapitre 2. *Logos endiathetos* 53-93.
26. Pinborg Jan. "Das Sprachdenken Der Stoa Und Augustins Dialektik." *Classica et Medievalia* 23 (1962): 148-177.
27. Pohlenz Max. "Die Begründung Der Abendländischen Sprachlehre Durch Die Stoa." *Nachrichten der Gesellschaft der Wissenschaften zu Göttingen, philosophische-historische Klasse* 1, 3.6 (1939): 151-198.
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28. Sandbach Francis Henry. "Phantasia Kataleptike." In *Problems in Stoicism*. 9-21. London: Athlone Press, 1971.
29. Schubert Andreas. *Untersuchungen Zur Stoischen Bedeutungslehre*. Göttingen: Vandenhoeck & Ruprecht, 1994.
Inhalt: Vorwort 7; Einleitung 9; I. Kapitel: Die Identität des Lektos 15; II. Die Identität der unvollständigen Lekta und die stoischen "Fälle" 57; III. Die Unkörperlichkeit der Lekta 110; IV. Das Konzept des Lektos in seiner Genese und in der philosophischen Diskussion 131; V. "hyparchein" und "hyphistasthai" bei den Stoikern 149; VI. "Bedeutungslehre" bei Aristoteles und Augustinus und ihr Verhältnis zur stoischen Semantik 175; VII. Die stoische "Kategorienlehre" 199; Appendix: Bemerkungen zu "hyparchein" und "hyphistasthai" im philosophischen Schrifttum und im Corpus Hippocraticum 246; Abkürzungsverzeichnis 261;

- Bibliographie 263; Index nominum 275; Index locorum 278-284.
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 31. Sluiter Ineke. "Language and Thought in Stoic Philosophy." In *History of Language Sciences / Geschichte Der Sprachwissenschaften / Histoire Des Sciences Du Langage I.1*, edited by Aurox, Sylvain, Koerner, Konrad, Niederehe, Hans-Josef and Versteegh, Cornelis H.M., 375-384. Berlin: de Gruyter, 2011.
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Two volumes: I (1890); II (1891).
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 34. Watson Gerard. "Discovering the Imagination. Platonists and Stoics on *Phantasia*." In *The Question of "Eclecticism". Studies in Later Greek Philosophy*, edited by Dillon, John M. and Long, Anthony Arthur. 208-233. Berkeley: University of California Press, 1988.
 35. ———. *Phantasia in Classical Thought*. Galway: Galway University Press, 1988.
Contents: Acknowledgements VII; Preface IX-XIII; 1. *Phantasia* in Plato 1; 2 *Phantasia* in Aristotle and Theophrastus 14; 3. The Epicureans and Stoics 38; 4. The transformation of *phantasia* 59; 5. The Neoplatonists 96; 6. The transition to *imaginatio* 134; Bibliography 163; General Index 170; Index of Names 174-176.
On the Stoics see pp. 44-59.

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"James Allen shows that this assumption explains the Stoics' preoccupation with etymology as part of their concern with a time 'when language was still young' and the product of a primordial wisdom. Since they held a naturalist rather than a conventionalist view the Stoics assumed that there had been a primary stock of words that somehow 'imitate' the nature of the objects in question and could therefore be used as a natural standard of correctness. Since they assumed that there had been a high level of rationality among humans at a primordial stage, the Stoics saw nothing unnatural in proposing the notion of an original 'name-giver' as a hypothetical construct. Such a construct escapes the sceptic's ridicule because it merely assumes that the human need and the ability to converse rationally with each other, which manifests itself in every individual at a certain age, must also have been part of the nature of the (assumed) first generation of human beings. The 'naturalness' of names consists, then, in their suitability for communication with others; though it presupposes a mimetic relation between words and certain kinds of objects, it is not confined to onomatopoeics; instead it makes use of other means to augment language by associations and rational derivations of further expressions that are gradually added to the original stock of words. This explanation, as Allen points out, may make the etymologies less interesting and relevant in our eyes; but though the Stoics did not assume

mechanical laws of derivation that would allow them to recover the 'cradle of words', attempts at rational reconstruction of the relation between different expressions provided them with a means to discover and to correct later corruptions of thought and so to play a crucial role in philosophical progress. Despite certain similarities of concern with the naturalist position in the *Cratylus*, the Stoic position therefore differs in more significant ways from the Platonic position than is usually acknowledged." From the *Introduction* by Dorothea Frede and Brad Inwood, pp. 4-5

2. Amsler Mark. *Etymology and Grammatical Discourse in Late Antiquity and the Early Middle Ages*. Philadelphia: John Benjamins, 1989.

See Chapter 1. *Etymology and Discourse in Late Antiquity*, pp. 15-56.

3. Atherton Catherine. *The Stoics on Ambiguity*. Cambridge: Cambridge University Press, 1993.

"The subject of this book is some of the most impressive and original work on ambiguity to survive the wreck of western antiquity: that of the Stoa.

At some point in the long history of their school Stoics constructed at least one definition of ambiguity, the earliest to survive in the western philosophical tradition, and remarkable in any case for its complexity, subtlety, and precision. It shows that its authors saw themselves as defining a linguistic phenomenon, *amphibolia*, which can easily be recognised today as familiar to users of most, if not all, natural languages: that one and the same linguistic item can mean or signify two or more different things. (This rough-and-ready characterisation will serve for the moment.) Two Stoic classifications of types of ambiguity, neither explicitly associated with the definition, are also extant; as these seem to differ from each other in small but important ways, they make it probable that at least one other definition was also arrived at, and this too may have

survived, albeit in a mutilated form, and not explicitly attributed to the Stoa.

Three chapters of this book will be devoted to close analysis of these three main pieces of evidence. They will reveal that Stoic philosophers had identified a range of linguistic and semantic concepts and categories with which ambiguity is intimately connected, and which serve to delimit or define it. Brief as they are, the texts to be examined will repay detailed study not only by students of ancient philosophy, at whom this book is primarily aimed, but also by workers in a variety of modern disciplines, above all by philosophers of language, theoretical and comparative linguists, and philosophical logicians: although they may all need to be convinced of the fact.

What these texts do not reveal, in a general, explicit way, is what originally prompted Stoic interest in ambiguity. No ancient authority says in so many words why Stoics, as self-professed philosophers, found it worth while to define and classify ambiguity. If their motivations and anxieties are to be comprehensible, their conceptions of the purpose, structure, and contents of philosophy, of its internal and external boundaries, of the goal of human existence, and of the right way to achieve that goal, must all be determined. Stoic interest in ambiguity was the inevitable consequence of the basic doctrines about human nature, language, and rationality on which the whole Stoic system was based. Once ambiguity's place in the Stoic scheme of things is clear, it will be possible to trace the ways in which the form and content of Stoic work on ambiguity were shaped and constrained by its origins; and judgement by the school's own lights can be passed on its success in the projects it set itself.

This interpretative and evaluative task is one of the two chief purposes of this book. It prepares the way for its companion, which is to assess, as far as possible, the merits and defects of Stoic work from other appropriate

perspectives, including those of relevant modern concerns and interests, both inside and outside philosophy. To do so it will be necessary to abandon the special viewpoints of both the Stoics' own philosophical teachings and their philosophical and intellectual milieu. One result of this shift will be a questioning of the lines of division which moderns (philosophers, logicians, linguists, and others) and ancients (Stoics and rival philosophers, as well as non-philosophical professionals such as grammarians and rhetoricians) alike draw between what they conceive of as different disciplines or sciences, including philosophy itself.

Given that part of the purpose of this book will be to try to analyse and explain some of the differences, in conception and method, between a range of modern and ancient perspectives on ambiguity, then restricting our inquiry to the particular contributions, however rich, which Stoics made to what are now called grammar, semantics, and epistemology, and to the other ancient disciplines or theories comparable with modern endeavours, would be a false economy even were the details of the Stoic enterprise not hopelessly distorted or understanding of them severely curtailed in the process. For the exegetical need for these larger contexts also reflects the fact that Stoic ideas of what philosophy was like, and what it was for, are vastly different from those which dominate the field today. The Stoic motivation for studying ambiguity might be called pragmatic, but not in the sense that it contributed to some narrowly practical goal, whether writing good Greek or understanding the classics, arguing in court or doing grammar -- or even doing logic, if that is conceived of as just another intellectual discipline, or as a tool of philosophy or of the sciences. The point was that seeing or missing an ambiguity could make a difference to one's general success as a human being." pp. 1-3

4. Auroux Sylvain, ed. *La Naissance Des Metalangages En Orient Et En Occident*. Liège: Mardaga, 1989.

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Chapitre III. *La naissance de la réflexion linguistique occidentale*: Marc Baratin: Section 3. *La constitution de la grammaire et de la dialectique* 186; Section 4: *La maturation des analyses grammaticales et dialectiques* p. 207; Section 45. *Les difficultés de l'analyse syntaxique* pp. 228-242.

5. Ax Wolfram. *Laut, Stimme Und Sprache. Studien Zu Drei Grundbegriffen Der Antiken Sprachtheorie*. Göttingen: Vandenhoeck & Ruprecht, 1986.
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7. ———. "L'identité De La Pensée Et De La Parole Dans L'ancien Stoïcisme." *Langages* 16 (1982): 9-21.
8. ———. "La Constitution De La Grammaire Et De La Dialectique." In *Histoire Des Idées Linguistiques. I. La Naissance Des Métalangages En Orient Et En Occident*, edited by Auroux, Sylvain. 186-206. Liège: Mardaga, 1989.
9. ———. "Aperçu De La Linguistique Stoïcienne." In *Sprachtheorien Der Abendländischen Antike*, edited by Schmitter, Peter. 193-217. Tübingen: Gunter Narr Verlag, 1991.
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Avec la participation de Philippe Hoffman et Alain Pierrot.
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12. ———. "Further Remarks on the Stoic Theory of Tenses." *Rivista di Linguistica* 1 (1989): 251-275.
13. ———. "La Formazione Di Un Paradigma Stoico-Alessandrino Nella Teoria Dei Tempi Verbali." *Quaderni*

dell'Istituto di Glottologia dell'Università di Chieti 8 (1997): 5-28.

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15. ———. "Remarks on Nicator, the Stoics and the Ancient Theory of Punctuation." *Glotta* 61 (1983): 48-67.
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18. Caujolle-Zaslowsky Françoise. "La Scholie De Stéphanos. Quelques Remarques Sur La Théorie Des Temps Du Verbe Attribuée Aux Stoiciens." *Histoire Épistémologie Langage* 7 (1985): 3-19.

"Although this testimony is isolated, the historians of ancient grammar, who are aware of the part played by the Stoics in the formation of an independent grammatical field, unreluctantly take for granted the indications of a scholium by Stephanos -- the commentator on Dionysios Thrax -- which imply the existence of stoic theory of verbal tenses; yet none of the reconstructions of this theory as the basis of the scholium can be taken as conclusive, for want of complementary documents. This paper offers neither a new reconstruction nor a critical survey of former ones, but tries to follow another path; it investigates whether elements which, in the scholium, are undoubtedly of stoic origin, did

not stand up to the scholiast's skill in his attempt to integrate them within a framework which may be foreign to them."

19. Dinneen Francis P. "On Stoic Grammatical Theory." *Historiographia Linguistica* 12 (1985): 149-164.
20. Egli Urs. "The Stoic Concept of Anaphora." In *Semantics from Different Points of View*, edited by Bäuerle, Rainer, Egli, Urs and Stechow, Arnim von. 266-283. New York: Springer, 1979.
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Also published in: *Historiographia Linguistica*, 13, 1986 and in J. Brunschwig (ed.), *Les Stoiciens et leur logique*, Paris, Vrin, 1986, pp. 135-147 (2nd edition 2006, pp. 131-148).

"Let me now summarize the main points of my exposition of Stoic syntax:

1. Stoic *loquia* (*lekta*) are designated by expressions of a normalized Greek. They have the same structure as these Greek expressions. Thus in most technical uses they serve approximately the same purpose as "semantic structures" or "semantic representations" in modern linguistics and philosophy of language.
2. There is an infinity of *loquia* derived by a finite number of recursive rules of four types, lexical, inclusion, combination and transformation rules. Semantic categories like statement, predicate and subject are used in the formulation of these rules which enable us to build complex *loquia* of the various categories from atomic ones (*asuntheta*). The structure of a compound *loquium* may be revealed by using Chomsky or Montague analysis trees.
3. This infinity of *loquia* is related with real things by an analogue of modern model theory. General terms are said to denote individuals according to a variant of multiple denotation theory. Deictic subjects are assigned values, like

their modern analogues: individual variables by an assignment (*deixis*). Statements are either true or false. Complex expressions are valued in function of their syntactic composition and the values of their parts.

4. Denotations of Greek expressions are determined indirectly. *E.g.* appellatives signify appellative subjects, which refer to individuals. Thus appellatives indirectly denote these individuals too.

5. All this would have to be refined by taking into account tense.

6. By neglecting tense, plural and subjectivization, Stoic *loquium* theory becomes an analogue of modern first order predicate logic by

a) the introduction of n place predicates with arbitrary n ,

b) the introduction of a means to handle relative clauses

Stoic syntax and related model theory thus proves interesting and comparable to modern treatments." *Les Stoiciens et leur logique*, 2nd edition 2006, pp. 144-145.

22. ———. "Anaphora from Athens to Amsterdam." In *Reference and Anaphoric Relations*, edited by Heusinger, Klaus von and Egli, Urs. 17-29. Dordrecht: Kluwer, 2000.
- "Excavating the prehistory of dynamic predicate logic in the Stoic theory of methodical arguments makes us aware of an interrupted tradition, in a way that is possible only by philological reconstruction and the use of similar facts independently invented in modern times. That such interrupted traditions can become important has been shown by the use of ancient temporal logic and its resurrection in Kripke's (1963) semantics of modal logic. Kripke combined Prior's reconstruction of the Diodorean system of time-logical modality with ideas from Carnap on modal logic in order to get his semantic characterization of the Lewis systems of modal logic. Modern developments offer scholars of classical logic a modern foil that can help them to understand ancient texts

and to see interesting developments in them which otherwise would be incomprehensible.

The modern representatives of this tradition also gain an advantage from such research, in that they can build on a tradition which helps to strengthen confidence in the new methods.

The adherents of Stoicism gave their logic high priority, saying that if the Greek gods had a logic, then it must be that of Chrysippus. As we have seen, this logic was a form of dynamic predicate logic. It is equivalent to classical predicate logic and contains it as the static part. Classical predicate logic is according to Hilbert's thesis a privileged form of logic, and according to Quine it is the right regimentation of language. Perhaps the Stoic saying was not so false after all. But we can also learn something about our own form of predicate logic, classical and dynamic, because the Stoic developments can be considered as a finalized whole. Even if the Stoic version of dynamic predicate logic is no logic of the gods, it still is an important logic for human beings." p. 28

23. Frede Michael. "Some Remarks on the Origin of Traditional Grammar." In *Historical and Philosophical Dimensions of Logic, Methodology, and Philosophy of Science*, edited by Butts, Robert E. and Hintikka, Jaakko. 51-79. Dordrecht: Reidel, 1977.

Reprinted with the title: *The Origins of Traditional Grammar* in: M. Frede, *Essays in Ancient Philosophy*, Oxford, Clarendon Press, 1987, pp. 338-359.

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Reprinted in: M. Frede, *Essays in Ancient Philosophy*, Oxford, Clarendon Press, 1987, pp. 301-337.

"Historians of grammar have usually proceeded as if their subject had a continuous history starting in the fifth century B.C., with the Sophists. But even if one is willing to credit

Sophists like Protagoras and Prodicus, and later philosophers like Plato and Aristotle, with a theory of language, It is obvious that their theories were not grammatical theories: they were not interested in finding out how a particular language, Greek, actually works in such detail as to be in a position even to attempt to start formulating the canons for correct Greek. Hence to treat them as part of one continuous tradition along with the later grammarians is to invite neglect of important questions. We may, for example, assume that those who actually started grammar had certain notions concerning the nature of language, and that these and other philosophical views influenced the way they set up their subject and thus also its later development. We may also assume that they had certain reasons for starting this enterprise and that these reasons influenced the way they went about it and hence, indirectly, the outlines of later grammar. For reasons of this sort it is important that we should have a better notion of the actual origins of the grammatical tradition.

Now our question concerning the Stoics is important, since it has been claimed that it was the Stoics themselves who first formulated traditional grammar, To substantiate this claim it will not be sufficient to show that traditional grammar is Influenced in many respects by Stoic notions. For such a state of affairs would be completely compatible with the assumption that the Stoics still formed part of the earlier philosophical tradition, though they contributed more to this tradition than their predecessors, but that grammar itself only began among the classical scholars of Alexandria, who exploited the available philosophical tradition and the Stoic contributions to it. To substantiate the claim that grammar originated with the philosophers we have to show that it formed a definite part of Stoic philosophy (the evidence seems to rule out the other schools of philosophy as plausible candidates). But the origin of traditional grammar is not the concern of this paper. Even if

grammar originated with the Alexandrians, it would be important to know whether in matters of language the Stoics still formed part of the earlier philosophical tradition or whether they were already engaged in doing grammar. For the evidence on the Stoic theory of language is so fragmentary that the context of the fragments and testimonies makes an enormous difference to their interpretation and evaluation."

25. ———. "The Stoic Doctrine of the Tenses of the Verb." In *Dialektiker Und Stoiker. Zur Logik Der Stoa Und Ihrer Vorläufer*, edited by Döring, Klaus and Ebert, Theodor. 141-154. Stuttgart: Franz Steiner, 1993.
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28. ———. "Épistémologie, Rhétorique Et Grammaire." In *Lire Les Stoïciens*, edited by Gourinat, Jean-Baptiste and Barnes, Jonathan. 23-39. Paris: Presses Universitaires de France, 2009.
29. Hadot Pierre. "La Notion De "Cas" Dans La Logique Stoïcienne." In *Le Langage. Actes Du Xiii Congrès Des Sociétés De Philosophie De Langue Française. Genève, 2-6 Août 1966*. 109-112. Neuchâtel: La Baconnière, 1966.
30. Hagius Hugh. "The Stoic Theory of the Parts of Speech." 1979.
Ph. D. Dissertation, Columbia University available at:
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Contents: Preliminary remarks IV--IX; Chapter I. Chrysippus 1; Chapter II. The *Techne concerning sounds* of Diogenes of Babylon 101; Chapter III. Aristarchus and the Aristarcheans 171; Chapter IV. The *Dialectica* of Augustine 249; Concluding remarks 260; Appendix I 265; Appendix II 280; Bibliography 283-290.

Abstract: "This dissertation relates the history of the theory of the parts of speech from its origin in the Stoic school of dialectics through its passage into the Alexandrian school of literary criticism in the second century B.C.

It pays especial attention to the way in which the theory was transformed in that passage. The Stoics had used it as part of their general system of dialectics, intended to give an account of the truth of true sentences and the validity of valid deductions. The Alexandrians, whose main activity was textual criticism, used the parts of speech as a system of naming and classifying the forms of Greek. The dissertation argues that for each of these purposes a different theory is required, and that in the Alexandrian grammarians' application of the theory two different ways of analyzing language were confused.

The chief figures in this history are the Stoics, Chrysippus of Soloi (c. 281 to 208 B.C.) and his student, Diogenes of Babylon (c. 238 to 150 B.C.), and the Alexandrian, Aristarchus of Samothrace (c. 216 to 144 B.C.). One chapter is devoted to each of them.

The first chapter is a reconstruction of Chrysippus's version of the theory of the parts of speech. It discusses the terminology which he inherited, such as "element of logos," the forerunner of our phrase "part of speech," as well as the notions of noun, verb, conjunction and article. It examines Chrysippus's theory of the significate (alternatively called the *lekton*), which was described as being what "the barbarians, although hearing the sound, do not understand," and also as being "just what is true or false." The several parts of speech were distinguished according to their association with significates.

The second chapter is a reconstruction of a lost work of Diogenes of Babylon, his *Techne Concerning Sound*. This was a handbook which treated language as a single topic, beginning with acoustics and proceeding to the parts of

speech. Diogenes's *Techne* probably was the vehicle by which the theory of the parts of speech reached Alexandria. The third chapter discusses Aristarchus's adaptation of the parts of speech to the purposes of textual criticism, and some of the ways in which he used it in his own edition of the *Iliad*. It also considers the difficulty which the confusion within the theory caused for Aristarchus's successors.

Finally it compares the grammatical theory of the Alexandrians with that of the great Indian grammarian Panini and his commentators.

The fourth and final chapter is devoted to a post-classical Latin text which has come down to us as the *De Dialectica* of Augustine. Its sources are obscure, but it appears to represent a development of Stoic theory later than Diogenes. It considers questions of metalanguage, and draws a distinction between use and mention very like the one made by Panini. This stage of Stoic theory did not pass into the grammatical tradition, but the *De Dialectica* was read during the medieval and Renaissance periods in Europe.

The dissertation contains two appendices. The first is a collection of fragments upon which the reconstruction of Diogenes's *Techne Concerning Sound* was based. The second discusses Aristarchus's pupil Dionysius Thrax, and the grammar attributed to him."

31. Hennigfeld Jochem. *Geschichte Der Sprachphilosophie. Antike Und Mittelalter*. Berlin: Walter de Gruyter, 1994. Chapter V. *Die Stoa. Laut und Bedeutung* pp. 104-124.
32. Householder Fred Walter. *The Syntax of Apollonius Dyscolus*. Amsterdam: John Benjamins, 1981. Translated and with Commentary.
33. Ildefonse Frédérique. *La Naissance De La Grammaire Dans L'antiquité Grecque*. Paris: Vrin, 1997. Chapitre II: *Les Stoïciens* - pp. 119-251.
34. ———. "Petite Histoire De La Metabasis." *Histoire Épistémologie Langage* 20 (1998): 63-80.

"I will try to illustrate the dynamics of the passage as described by metabasis in a few stoic texts and several grammatical analysis of Apollonius Dyscolus. I believe the concept of « décrochement », which I borrow from Claude Lévi-Strauss, helps to clarify it. The adjective metabatikos qualifies the type of human representation, logical representation, which, in as much as it is « transitive », allows an information to open into another, as well as their mutual articulation, therefore founding the conception of the sign « if this, then this » and the possibility of the conditional « if it is day, there is light ». According to the grammarian Apollonius Dyscolus, metabasis intervenes in the analysis of the transitive diathesis and in the definition of the person. I will proceed to show the part played by metabasis in the grammatical treatment of conjunction and how it allows to throw some light upon the obscure part of the definition of conjunction in the *Technè Grammatikè* attributed to Dionysus the Trhax."

35. Lallot Jean. "Origines Et Développement De La Théorie Des Parties Du Discours En Grèce." *Langages* 23 (1988): 11-23.
36. Lohmann Johannes. "Über Die Stoische Sprachphilosophie." *Studium Generale* 21 (1968): 250-257. Summarizes in particular the important unpublished Dissertation by Hans-Erich Müller (1943).
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"Anthony Long also elaborates on the influence of Plato's *Cratylus* on Stoic theory. But he goes much further than Allen with his hypothesis that the Stoics not only made use of Plato's dialogue, but did so in a way that justifies his presentation of many central features of their linguistic theory as being the result of a revisionary reading of the

Cratylus. It is a reading that makes Socrates' suggestions about the 'natural' relation of names to things much more coherent than they are in the dialogue itself. This also applies to their etymological explanation of the names of the gods that they suggested as a revision of a corrupted tradition and a return to the original name-givers' comprehension of the true nature of the universe. Given their 'synaesthetic' reconstruction of the relation between phonetics and semantics, the Stoics could avoid the *Cratylus*' more absurd features of onomatopoeics, as Long shows by analysing different forms of 'naturalism', including 'formal and phonetic naturalism', and their application by the Stoics that not only hides names but also the famous *lekta* or 'sayables'. Long contends that the Stoics not only found a better balance between the phonetic and the formal constituents of meaningful discourse than emerges from Plato's dialogue itself, but restricted their use of etymology as a back-up to their theology, i.e. the naturalistic reconstruction of the names of the gods. As an additional witness to the sophistication of the Stoic linguistic theory Long adds an appendix on the four-fold semantic distinction (between *dicibile*, *res*, *verbum*, and *dictio*) in St Augustine's *De dialectica*, which he takes to be largely of Stoic origin.

The Epicureans also held that language is part of the natural emergence of human culture. But here the similarity between the Stoic and the Epicurean theory of language ends. For instead of an early stage of rationality and inspired 'name-givers', the Epicureans proposed a quite different account of the evolution of language as part of their mechanical reconstruction of the order in nature, which includes an animal-like primitive stage of human beings. Unfortunately the information on this early stage in the development of humans as cultural beings in Epicurean theory is extremely meagre; attempts to reconstruct it have to rely on a few lines in Epicurus' *Letter to Herodotus* and

in Lucretius' poem." From the *Introduction* by Dorothea Frede and Brad Inwood, pp. 5-6

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"This study examines the dialectical origin of syntactical description in our traditional grammar. Two famous texts take pride of place in containing the first descriptions of a 'clause' in Greek literature, namely Plato's *Sophist* and Aristotle's *Peri hermeneias*. These descriptions arose in the context of a more general inquiry into the nature of truth and language which gave rise to the first speculations on the form of the logical proposition in Greek Antiquity. By establishing as the unit of propositional analysis a combination of two linguistic items, *Onoma* ('name', 'noun') and *rhema* ('verb', 'predicate') these philosophers laid the foundation for the doctrine of the parts of speech which later constituted the core of ancient grammar. Their concern was to establish the two functional constituents of the proposition, roughly the subject and the predicate, by means of which true and false statements could be made. The object of their concern -- the minimal statement consisting of a noun and a verb -- came to figure as the point of departure for syntactical analysis when it began to be pursued in independent grammatical treatises. In the grammar of Apollonius Dyscolus (2nd century A.D.), which is our first extant grammatical treatise on syntax, syntactical description proceeds from the minimal self-sufficiency (*autoteleia*) of the linguistic expression. But the description of the minimal sentence by Apollonius bears witness to the distinctly Stoic origin of the notion of self-sufficiency." p. 11

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"The difficulties one meets in studying Stoic grammatical theory may well be illustrated by the verbal system, whose reconstruction has been undertaken in various ways. It is our aim in this paper to study first the data provided by the Greek grammarians, and to determine the influence of Stoic theories on this corpus with the help of the direct quotation in the scholia (scholia Dyonisios Thrax 250, 26 - 251, 25). Then we will analyse the data from Varro (*De Lingua Latina* VIII - X) and from the Latin *Corpus Grammaticorum*, in connection with the direct quotation by Priscianus (*Inst.* 414, 21 sqq.). Finally, we will compare the various reconstructions which have been proposed, and give our own proposal." p. 338

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"Students of Stoic philosophy, especially of Stoic ethics, have a lot to swallow. Virtues and emotions are bodies; virtue is the only good, and constitutes happiness, while vice is the only evil; emotions are judgements (in Chrysippus' Stoa); all sins are equal; and everyone bar the sage is mad, bad and dangerous to know. Non-Stoics in antiquity seem for the most part to find these doctrines as bizarre as we do. Their own philosophical or ideological perspectives, and the criticisms of the Stoa to which these gave rise, are no less open to criticism than are the paradoxes and puzzles under attack -- but they may be, often are, better documented, less provocatively attention-begging, or simply more familiar. Even disputes within the Stoa can be obscured or distorted by modern prejudices. Posidonius rejected Chrysippus' theory of a unitary soul, one rational through and through, on the grounds that such a theory could not satisfactorily account for the genesis of bad -- excessive and irrational - emotions, the *páthe* (Galen, *PHP* [*De placitis Hippocratis et Platonis*] 2.246.36ff., 314. 15ff. De Lacy). Posidonius' own Platonising, tripartite soul feels more familiar to us because the Republic tends to be a set text rather more often than do the fragments of Chrysippus' *de anima*; and the balance in Plato's favour is unlikely to change. When Posidonius wrote, on the other hand, the Chrysippean soul was school orthodoxy, and Platonism the latest thing in radical chic." (p. 392).

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Deklinationslehre der Stoa 34; IV. Die Etymologie der Stoa 58; V. Platons *Kratylos* und die stoische Sprachschöpfungslehre und Etymologie 70; VI. Die Stellung der Stoa zu dem Problem der sprachlichen Neuschöpfung 80; 1. Die stoische Auffassung von der sprachlichen Neuschöpfung bei Varro und Quintilian 80; 2. Das Problem der sprachlichen Neuschöpfung bei Cicero, Quintilian und anderen Rhetoren 83; 3. Horaz und das Problem der sprachlichen Neuschöpfung 85; VII. Die stoische Tropen- und Figurenlehre und ihr Verhältnis zu der der zünftigen Rhetorik 88; 1. Die stoische Tropenlehre 88; 2. Die stoische Figurenlehre 97; 3. Entstehungszeit der stoischen Tropen- und Figurenlehre 110-111.

Vorwort: "Die vorstehenden Untersuchungen verfolgen das Ziel, einige Gebiete der stoischen Sprachlehre und Rhetorik aufzuhellen. Bei dem Stand unserer Überlieferung ist das eine schwierige und entsagungsvolle Aufgabe: aber, wie ich glaube, eine Aufgabe, die sich lohnt; denn nur auf dem Weg über die Stoa läßt sich ein tieferer Einblick gewinnen in die Geschichte der antiken Sprachtheorien und, bis zu einem gewissen Grad, auch der antiken Rhetorik. Leider ist auch die Arbeit des nachprüfenden Lesers nicht immer bequem. Ich war daher bemüht, sie ihm nach Möglichkeit zu erleichtern und weitgehend die Quellen selber sprechen zu lassen.

Der Stoff ist in sieben Kapitel gegliedert. Sie behandeln Themen verschiedener Art, die aber innerlich eng zusammenhängen. Kapitel I will durch seine Analysen eine stoische Quelle erschließen, die von Wichtigkeit ist für die folgenden Untersuchungen. Kapitel II und III versuchen die stoische Auffassung von der Entstehung der Sprache klarzulegen, wobei das erstere mehr die verschiedene Bedeutung der Worte, das letztere ihre verschiedenen Formen ins Auge faßt. Mit Kapitel II und III steht Kapitel IV in engem Zusammenhang: Über die in ihm behandelte Etymologie der Stoa läßt sich nur von ihrer Ansicht über die

Entstehung der Sprache her ein tieferes Verständnis gewinnen. Da die stoischen Lehren über die Sprachentstehung und Etymologie sich nahe berühren mit denen des platonischen Kratylos, waren in Kapitel V die beiderseitigen Beziehungen zu untersuchen und festzustellen, wie weit etwa die Stoiker von Platon abhängig sind und wie weit sie ihre eigenen Wege gehen. Kapitel VI und VII untersuchen die stoischen Anschauungen über das sprachschöpferische Verfahren der Gegenwart; beide gehören mehr in das Gebiet der Rhetorik. Während Kapitel VI die verschiedenen Arten der Neubildung von Worten behandelt, beschäftigt sich Kapitel VII mit den Tropen und Figuren; sie können ebenfalls, wenn auch in anderem Sinn als die Bildung neuer Worte, als ein Akt sprachlicher Neuschöpfung bezeichnet werden. Die Formen moderner Sprachschöpfung gehen, jedenfalls zum Teil, parallel mit dem sprachschöpferischen Verfahren, wie es von den Stoikern für die Urzeit angenommen und in Kapitel II und III beschrieben wurde. Kapitel VI und VII setzen also zu ihrem tieferen Verständnis Kapitel II und III voraus. Es sei noch bemerkt, daß Kapitel VII ursprünglich als selbständige Abhandlung geplant und bereits 1922 geschrieben war, als mein Buch über "Remmius Palaemon und die römische ars grammatica" gedruckt wurde, wo S. 99, 1 auf sie verwiesen wird. Die Veröffentlichung ist damals aus verschiedenen Gründen unterblieben und erfolgt jetzt im Rahmen dieser Untersuchungen in erweiterter und z. T. veränderter Form."

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"The formula "the elements of *logos*" in the Zeno quotation by Epictetus at Arrian, *Diss.* 4.8.12 need not, pace e.g. von Arnim, pertain to the parts of speech, but more probably means the elements, i.e. primary theorems of philosophical theory, or doctrine. Theory moreover should become internalized to the soul and "lived": philosophy is also the so-called "art of life". These theorems are to be distinguished but should reciprocally entail each other. Philosophy according to Zeno is both tripartite and one, and tripartite especially in that its parts (and subparts) cannot be transferred simultaneously: of necessity these have to be taught and learned one after the other."

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"I have attempted to sketch what Zeno left behind for Chrysippus to develop (63). Cleanthes has been mentioned in passing, and his contributions are, so far as we can see, largely limited to additional work of the same general sort as his master. He too took an interest in the work of Diodorus

Cronus, and as we have seen, is the first recorded Stoic to have discussed the notorious Master Argument and its theory about the possible and the necessary. Probably some form of a theory of *lekta* may be ascribed to him, as Clement of Alexandria tells us. But how much he said on the topic is beyond our ken; probably not very much. For I am personally even Inclined to think that it is more likely to have been Chrysippus who formally added *lekta* to the list of incorporeals, though such an addition might be implicit in the thought of anyone who postulated that there are "non-existents": subjects of *meaningful* discourse which cannot be put in category One, the category of what exists. For it is hard to see how that which does not exist can be corporeal. Perhaps it was from some such considerations that the notion of "meaning" itself arose, as well as the thesis that words may have a sense but no reference." p. 27

"Résumé. Avant le développement systématique que Chrysippe donna à la logique stoïcienne, peut-on préciser l'œuvre de Zénon dans ce domaine? Souhaitant donner à l'idée de nature un contenu plus positif que ne le faisait la morale cynique, il devait rencontrer l'hypothèque éléatique; il fut l'élève et le condisciple de plusieurs dialecticiens mégariques (bien qu'on ne lui attribue pas de position dans le problème du Dominateur et des possibles). Il a dû s'intéresser aussi à la théorie des signes et au problème du critère de validité du conditionnel, sur lequel il adopte la position de Philon (que Chrysippe abandonnera sous la pression des critiques de Diodore). Ce problème est lié à celui de la nature du sage; en reconnaissant dans l'aptitude à inférer un aspect fondamental de la nature humaine, Zénon accélérerait sa rupture avec le cynisme. Des Mégariques, Zénon a hérité certaines divergences de vocabulaire et de fond avec la logique aristotélicienne; de Stilpon, notamment, il peut avoir reçu l'idée du primat de l'individuel, contre les Formes platoniciennes et peut-être aussi contre les universaux aristotéliciens. Parmi les

domaines que Zénon n'a apparemment pas touchés, on peut compter: la théorie des signifiants et des signifiés; peut-être, la notion même du *lekton* (qui aurait été rajouté, après Zénon, aux trois incorporels primitifs, nés en terrain physique), et du même coup la classification systématique des *lekta*; enfin, la théorie des indémontrables. En matière de théorie de la connaissance, c'est en revanche Zénon qui a jeté les bases de la doctrine stoïcienne; le problème était urgent, après le platonisme et le pyrrhonisme, comme le démontre l'attitude contemporaine d'Épicure.

Le Professeur Rist n'a pas souhaité rédiger de compléments pour la deuxième édition. (Note de l'éditeur)" pp. 27-28.

(63) *Ibid.* p. 153-154.

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Table des matières.
Tome I: Remerciements IX; Avant-propos XI; Introduction XV; Avertissement LIII; Sur la vie de Chrysippe et témoignages sur ses écrits, n. 1-31 p. 1; Prolégomènes à la philosophie, n. 32-42 p. 43;
PREMIÈRE PARTIE. LA LOGIQUE (n. 43-51) p. 57.
Chapitre I. La doctrine de la connaissance (n. 52-112) p. 69;
Chapitre II. La dialectique (n. 113-295) p. 141; Chapitre III. La Rhétorique (n. 296-306) p. 391;
DEUXIÈME PARTIE: LA PHYSIQUE p. 401.
Chapitre I. Les doctrines fondamentales de la physique (n. 307-535) p. 403;

Liste des ouvrages de Chrysippe 661; Glossaire 665; Chronologie des écoles philosophiques 673; Bibliographie 675-685.

Tome II: Chapitre II. sur le monde (n. 536-647) p. 9; Chapitre III. Des corps célestes et des phénomènes atmosphériques (n. 648-707) p. 109; Chapitre IV: Des animaux et des plantes (n. 708-772) p. 157; Chapitre V. De l'âme humaine (n. 773-913) p. 206; Chapitre VI. Sur le destin (n. 914-1014) p. 355; Chapitre VII. Sur la nature des dieux (n. 1015-1110) p. 485; Chapitre VIII. Sur la providence et la nature artiste (n. 1111-1166) p. 567; Chapitre IX. Sur la divination (n. 1167-1195) p. 621; Repères chronologiques des citateurs 649; Bibliographie des citateurs 651; Index des notions 671; Index des passages cités 679; Index des personnages 705; Concordances: ce recueil-Long & Sedley 717; Concordances: ce recueil-SVF 719; Concordances: Long & Sedley-ce recueil 729; Concordances: SVF-ce recueil 733-743.

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After surveying the many solutions currently on offer, and noting their drawbacks, this article presents a new solution, one that affirms the long- ignored position of Chrysippus, although not the reasoning by which he arrived at it. The solution employs (and assumes) the recently resurgent doctrine of Aristotelian Essentialism, which provides a hitherto unexploited resource for dealing with the full range of putative exceptions to the principle that different objects cannot simultaneously occupy the same place."

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"One of the most intriguing claims of Stoic logic is Chrysippus's denial of the modal principle that the impossible does not follow from the possible. Chrysippus's argument against this principle involves the idea that some propositions are 'destroyed' or 'perish'. According to the standard interpretation of Chrysippus's argument, propositions cease to exist when they are destroyed. Ide has presented an alternative interpretation according to which destroyed propositions persist after destruction and are false. I argue that Ide's alternative interpretation as well as some versions of the standard interpretation conflict with Stoic doctrines about the nature of propositions. I propose another version of the standard interpretation based on Frede's account of the Stoic theory of the proposition. I hold that this version of the standard interpretation both escapes Ide's objections and is consistent with Stoic logic and philosophy of language."
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Logic and Rhetoric in the Philosophical Works of Cicero

INTRODUCTION

This page is dedicated to the following aspects of the philosophy of Marcus Tullius Cicero:

The creation of the Latin philosophical vocabulary;

His testimony on Stoic logic;

His book *Topica*, who in the Middle Ages become one of the texts of the *Logica Vetus*.

Attention will also be given to the *De Inventione* and *De Oratore*, who exerted a great influence on medieval thinkers.

AN OVERVIEW OF CICERO AS PHILOSOPHER

"Philosophy meant Greek. Rome had nothing to offer except a stern traditional moralism exemplified by Cato, which found the

rigid Semitic ethic of the Stoics congenial, and a reaction away from this, which expressed itself in a loose Epicureanism, such as Epicurus himself and his sincere exponents would have utterly disowned. 'And so it is not Epicurus who has driven them to debauchery. They have already given themselves over to immorality, and now try to hide their debauchery in the lap of philosophy; they congregate in the place where they hope to hear the praise of pleasure' (1). The words date from the next century, but they are applicable to the age of Cicero. Cicero is at some pains to explain away the apparent Roman incapacity for philosophy. He suggests that there is no real inability : rather their energies have been diverted into other channels. Be that as it may, philosophy meant Greek, and Greek philosophy of the age of Cicero was represented predominantly by four schools.

a) The oldest of these was the Academy. Under Plato this had been a training-ground for politicians, with a course designed to lift the mind from the relativities of our normal life to the eternal verities, and a pioneering interest in logical analysis. For seventy years after his death the heads of the Academy were dogmatists whose interests were predominantly ethical. Then in the mid-third century Arcesilas transformed the whole direction of Academic thought, by retaining the dialectic but abandoning the dogmatic, so that every question was treated as an open question, certainty was abjured and probability left as a guide. This was a polemic against Stoic claims of infallibility; it was affected by the scepticism of Pyrrho and the logical acumen of Diodorus, so that the satirist Timon described Arcesilas as a kind of Homeric chimaera 'Plato the head of him, Pyrrho the tail, in between Diodorus' Arcesilas' work was taken up in the next century by Carneades, unquestionably the greatest thinker between Aristotle and Plotinus, and suspension of judgment remained a tenet of the school, though there may have been some esoteric dogmatism. According to Cicero the Academics of his day were few in number (2).

b) The Peripatetics originated with Plato's pupil Aristotle. Of all the ancient schools the Peripatetics were the most insistent that theory should be grounded in fact, and they specialized in amassing large quantities of fact on which a critical judgment could be based. Their judgments were generally free from extremism and marked by a sturdy common sense. Their special contribution lay in scientific research.

c) Stoicism emerged at the beginning of the third century to meet the demand for education occasioned by limiting the period of military training and transferring it to Athens. The philosophy was designed to meet a mood of despair in an age of 'the failure of nerve'. Its religion was a pantheistic determinism; its chief virtue resignation. Its early exponents preached a rigid moralism in which virtue was the only good, vice the only evil, and all else matters of indifference, and which divided mankind into saints and sinners without any No Man's Land between. Later this rigidity was modified, though the quest for perfect virtue was never abandoned.

d) Epicureanism met the same needs, opportunities and mood as Stoicism. Epicurus regarded the end of life as 'pleasure', not crudely interpreted but understood as freedom from disturbance. To this end we must be rid of fear and control desire. Fear is dispelled by understanding; hence the Epicureans adopted Democritus' atomic theory as the most reasonable account of the world, and this enabled them to dismiss the fear of death, death being the painless dissolution of our atomic structure. The greatest external adjunct to the tranquil life is friendship, and the emphasis upon friendship is one of the most attractive features of the school. Finally, gods exist, but they are remote and not to be feared, spending their time in philosophic conversation.

This picture must be modified by a general tendency to eclecticism. Among the Peripatetics this is open and unashamed, and the *De mundo* contains much that is Stoic, and *De virtutibus*

et vitiis is an attempt to reconcile the Academy and the Peripatos. The Platonists had, at least publicly, given up their distinctive insight in the interests of scepticism, and turned increasingly towards the Stoics, and in the age of Cicero Antiochus of Ascalon, who had at first opposed the Stoics, later capitulated and, in R.D. Hicks' words, 'taught Stoic logic, Stoic physics and an ethical theory which was only not orthodox Stoicism because it was fatally wanting in the unity, coherence and consistency which even opponents admired in the Stoics'. But the Stoics also, as we have seen, shifted -- the attacks of Carneades could not be ignored -- and in the first century Posidonius abandoned the orthodox psychology and went back to Plato. Only the Epicureans never changed an atom, and the agreement of Lucretius and even Diogenes of Oenoanda with Epicurus is a tribute to the conservatism of the school.

It is not always realized how thoroughly Cicero was grounded in philosophy. He was born in the country near Arpinum, but from the age of ten Rome was his centre. His philosophical training began before he was sixteen when in conjunction with his friend Titus Pomponius Atticus he attended the lectures of the Epicurean Phaedrus, who was teaching in Rome at the time (3). Both students were impressed. With Atticus it lasted a life-time; with Cicero the enthusiasm for the tenets of Epicurus soon wore off, but he continued to speak of Phaedrus with respect and to enjoy his friendship. Thereafter he had little official contact with the Epicureans, and publicly disavows acquaintance with their formless writings, but it is clear that he had read more than he makes out (4). Later legend associated him with Lucretius' poem; Jerome says that he amended it and Borgius quotes some alleged corrections. The indefatigable Merrill assures us that there is no phrase in Cicero which is assuredly borrowed from Lucretius. But we know from the letters that Cicero was familiar with the poem (5), and Lucretius may have read extracts to the distinguished *littérateur*.

After leaving Phaedrus, Cicero went to study dialectic with Diodotus the Stoic. This art, which Cicero calls 'abbreviated eloquence', was at the time the monopoly of the Stoics. Cicero absorbed, but was not attracted by, the general philosophy. But Diodotus became an inmate of Cicero's house until his death some thirty years later (6).

Then, in 88 Philo of Larissa, the head of the Academy came as a refugee to Rome. He was a versatile genius, attractive to Cicero not least for his mastery of the theory and practice of oratory. But these were troubled times politically. It seemed that a public career was closed, though he took further training from Molo, the Rhodian ambassador, who linked for him rhetoric and ethics. Meantime he threw himself whole-heartedly into the study of philosophy, and his commitment to the Academy lasted a lifetime (7). Later he likes to recollect his early enthusiasm for philosophy (8), but, even allowing for exaggeration, it is clear that he worked very hard. Throughout the years 88-1 the training continued, and his translations from Greek into Latin included Xenophon's *Oeconomicus* and Plato's *Protagoras*.

Even now he was not done. In 81 he made his first public speech; in the following year he made a public attack upon one of the minions of the dictator Sulla, and shortly afterwards we find him leaving Rome 'for the good of his health'. He spent six months in Athens. There were, it seems, no eminent Stoics or Peripatetics in the city at the time. The Epicureans were under the leadership of Zeno of Sidon, a man of mordant sarcasm but an unrivalled expositor, endowed with more clarity than charity. Cicero's old friend Phaedrus was however there also, and Cicero accompanied Atticus to some of his lectures (9). He also made the acquaintance of the Stoicizing Academic Antiochus of Ascalon, for whom he conceived a great admiration, 'pre-eminent among contemporary philosophers in ability and scholarship' (10), 'a writer of extraordinary shrewdness' (11), 'the shrewdest and most cultured of the philosophers of my time' (12). In theory, however, he sided with the more orthodox Philo (13).

From the mainland of Greece Cicero went on to Rhodes to continue his study of rhetoric with Molo. Here he met Posidonius; they struck up a friendship, and through this contact Stoicism entered his thinking for the first time as a vital influence. Cicero calls him the greatest of the Stoics, a thorough investigator and the most celebrated of all contemporary philosophers, and says that he read his works more than those of any other philosophical writer. He certainly quotes them more often (14).

From his return to Rome in 77 Cicero was fully engaged in his public career, though he never forgot that he was a scholar and was proud, for example, that as an administrative officer in Sicily he had rescued the tomb of Archimedes from oblivion. But his formative period was over. It had been long and thorough; he had been trained in three of the principal schools, and had emerged with an Academic theory of knowledge, an immense admiration for Plato, and some inclination to the Stoics without their dogmatism. (pp. 99-103).

(...)

It is important to realize what Cicero was trying to do. He never claims originality, except in the last book *De officiis*. He admits that his works are derivative -- 'I merely provide words, and I've plenty of those'. He is however no slavish translator (15); he always brings a critical and interpretative faculty to bear, as he himself claims (16). His aim is the introduction of philosophy to Rome. War and dictatorship alike limited the scope of public oratory. Philosophy was to Cicero only a second-best, but it was that, and with the decline of oratory he was prepared to give an impulse to Roman philosophy. They needed to be able to philosophize without resort to the Greeks, and to this end he sought to provide them with a kind of philosophic encyclopaedia. He hoped to make every department of philosophy accessible in Latin; 'what greater or better service, could I offer my country than teaching and instructing the young' (17).

He chose as his form the dialogue, and his models Aristotle, and, occasionally, Heraclides Ponticus (18). This is especially marked

in the *Tusculans* where the dialogue is a dialogue with a tendency to monologue, though we cannot help feeling that Cicero, who never suffered from an excess of modesty, is consciously or unconsciously casting himself for the role of Socrates. He is himself aware of this tendency (19). In general, as in *De finibus* or *De natura deorum*, he likes first to present and then criticize the tenets of each of the leading schools in the field under discussion. His presentation is generally fair, though an unconscious bias asserts itself in that he puts the Stoic case at much greater length than the Epicurean. His criticisms are sometimes self-contradictory, but never merely silly. The whole is a fascinating and, we must believe, generally reliable introduction to the climate of Greek thought in the time of Cicero.

It is not needful here to essay any summary of these expositions, since, it is Cicero whom we are considering rather than his sources.

(...)

But we may properly ask whether we can see what Cicero regarded as the function of philosophy. Unfortunately the work in which he must have presented this systematically, *Hortensius*, is lost. However, we can recover something of its theme. We know, for example, that it was based on Aristotle's *Protrepticus*. This also is lost, but the work of Jaeger and others has enabled us to see something of its content. The book was addressed to a prince of Cyprus named Themison. It was written in Aristotle's Platonic period, and there is no doubt that its ultimate aim was practical. Themison says Jaeger 'is to help to realize the political philosophy of the Academy. He is to be a philosopher-king. But although the aim was practical it was not utilitarian, and Aristotle argued against the proposition that philosophy is to be judged by its immediate expediency; this, as Jaeger has shown, is a defence of the Academic training against Isocrates. On the contrary, we should not be too engrossed in mortal affairs; the life of pure contemplation offers something they can never offer; it accords with man's peculiar gifts and function; in the isles of the blest there will be no place for the ethical virtues; our aim must be to

devote ourselves to truth as the fulfilment of our true personalities.

Cicero followed this, but not slavishly. He used the dialogue form, as Aristotle probably did not. Our knowledge of Cicero's text is principally from Augustine, for whom it was a seminal work. A long and famous extract contains the passage which shows that in the legendary islands after death there will be no place for virtue where there is no room for vice nor even for eloquence where there are no law-courts, but contemplation alone belongs to the highest happiness. Similarly the final conclusion of *Hortensius* directed the reader away from frail mortality to eternity.

Cicero was however by no means always so divorced from practicality. The last book of the *Tusculans* begins with an eloquent panegyric of philosophy, including a summary of the course of Greek thought which omits all mention of the natural philosophers and praises Socrates for having first brought philosophy down from the sky (that is from astronomy and cosmology) and planted her in the town and in the home; to compel men to give thought to ethical principles and their general way of life (20). 'O philosophy' he cries 'life's supreme commander, tracking virtue to its lair and banishing vice, what would have happened to us, what could have happened to man's life at all without you? You brought towns into being. When men were separate from one another you summoned them to community, drew them together first in families, then in marriage, then in the use of a common language. You devised the rule of law; you were our schoolmistress in learning and behaviour. You are our refuge, our source of help. In the past we have given ourselves to you only with reservations; now we give ourselves utterly and completely' (21). Again in the second book we read 'Philosophy has to her credit the cure of souls, the removal of idle worries, redemption from lust and the banishment of fear' (22). So in a letter to Varro he speaks of his return to his books as to old friends whose advice he has neglected in his dubious political alliances. They have forgiven him, and with their help he hopes to face more steadfastly present

and future distress (23). Cicero in these passages is writing without a model open before him; he is writing from the heart, and there is adequate indication that he is really preoccupied with ethical and practical issues.

In fact when we examine the theme and contents of his surviving work this assertion is amply borne out. They all deal with problems of politics (as in the rather earlier *De Republica and De legibus*), religion or ethics. The *Tusculans*, a collection of five miscellaneous discourses, deals successively with the propositions 'I think death is an evil' 'I reckon pain the worst of all evils' 'I think the wise man is liable to present distress' 'I think the wise man cannot get rid of all mental disturbances'. 'I think that virtue is not sufficient to produce ultimate happiness'. These themes (all the propositions are confuted) show well enough the general tenour of his thought. In some moods he was doubtful whether philosophy had all the answers, and Lactantius quotes a letter he wrote to his son 'We ought to know what philosophy teaches, but we ought to live by our national traditions' (24). He is not interested in the physical sciences, though in *De natura deorum* he followed with keen interest the beauties of the Stoic natural theology against the Academic Carneades. He recognized the Peripatetic virtues in the field of science, and corrected some of the extravagances of the Stoics by reference to Aristotle. His theory of knowledge is Academic. As an orator he was trained to see both sides of a case, as a historian of philosophy he saw the conflicts of philosophers, as a person he was inclined to charity and saw something unworthy in arrogant dogmatism. Opinion, he insists, is free, and each man is free to defend his own position. (25) Disagreement is legitimate and understandable, but not bitterness (26). After all, *quot homines, tot sententiae* (27) Not for him the pernicious autocracy of Pythagoras with *hipse dixit* (28) or the apron-strings of Chrysippus shackling the Stoic. The Academic, abjuring certainty, guided by probability roams free. Cicero anticipated Mill in his belief that freedom of discussion leads to intellectual progress. Sometimes, it must be admitted, he uses the doctrine as an excuse for mental laziness. He has the

inconsistency which is the besetting sin of those who borrow eclectically from their predecessors. The view of divination in *De legibus* is radically different from the scepticism of *De divinatione*, and the attempted explanations of this are not really satisfactory. The last book of the *Tusculans* and the fourth of *De finibus* are in flat contradiction with one another. Cicero is quite cheerful about such contradictions. 'At different times different views seem more probable' he comments (29); like Dr. Johnson, he refuses to be bound by his previous utterances. He lives, from day to day (30). He is not, however, always free from dogmatism. Indeed there is an amusing passage in the *Tusculans*. Cicero has in the very previous paragraph been commending suspension of judgment. His interlocutor puts the proposition, 'I think that virtue is not sufficient to produce ultimate happiness', and Cicero's demur is almost violent in its emphasis. This is generally true of his ethics which incline to the absolute and dogmatic position of the Stoics. One of Cicero's aims was to undermine Epicurean influence by a combination of Academic scepticism and Stoic ethics.

So far he might seem another of the hack-writers of philosophical text-books who diligently and meticulously perpetuate the errors of past generations. When we turn to his methodology however he appears much more modern.

In the first place he insists on definitions. So he writes to his son in *De officiis* 'Every systematic philosophical development of a subject must begin with a definition to provide a clear explanation of the subject under discussion' (7). Throughout this work his treatment is carefully analytical, as we may note in the discussion of the cardinal virtues. In *De finibus* the first substantial point which Cicero makes against Epicurus arises out of the latter's failure to define: he does not make clear what he means by 'pleasure' (32). Again in the fourth book of the *Tusculans*, where the theme is mental disturbance in general, Cicero points out that the Stoics have spent some time in classification and definition, a thorny subject which the

Peripatetics by-pass. He will therefore start with the Stoics, and gives Zeno's definition of mental disturbance as an 'unnatural spiritual upheaval uncontrolled by philosophy'. It is easy to pick holes in the definition; the point is that a definition has been given; he himself suggests an alternative 'an excessively violent appetite' (33). He then takes up an analysis from the previous book (34) according to which the irrational emotions are four in number -- pleasure, which is reaction to a present good, desire, which is an outreaching to a future good, fear, which is an outreaching to a future evil, and distress, which is reaction to a present evil. Finally he subdivides these four sections, differentiating in each between apparent synonyms in a passage which should be compulsory reading for developing the precise use of words in Latin Prose Composition. Nowell-Smith's *Ethics* (*) is described in its blurb as 'A study of the words and concepts that we use for answering practical questions, making decisions, advising, warning, and appraising conduct '. No doubt Nowell-Smith starts with very different presuppositions and with a superior logical equipment, but in essence he is doing no more than Cicero, and Cicero's insistence on definition and analysis ought to commend him to contemporary thought.

Secondly, Cicero insists on the method of dialectic. So in the *Tusculans*, 'I have always approved the Academic and Peripatetic practice of presenting every subject in the form of a debate, partly because it is the only way of reaching the most probable conclusion on any particular topic, partly because it is good rhetorical practice' (35). 'The sole object of our discussions' he says in the *Academica* 'is by arguing on both sides to draw out and give shape to some conclusion which may be either true or the nearest possible approximation to the truth' (36). It is significant that in adopting Aristotle's *Protrepticus*, which seems not to have been in dialogue form, for his *Horensius* he recast it as a dialogue. *De finibus* is here typical of his methods. The theme is the *summum bonum*. Book I presents the Epicurean view. Book II subjects this to a criticism which is overtly Academic,

though its content include, a large admixture of Stoicism. Book III presents the Stoic case, and to Book IV this in turn is attacked, though more sympathetically, from an Academic standpoint. Book V presents a synthetic Academic-Peripatetic view. In *De divinatione* the Epicurean view is omitted as it was a flat negation. Book I presents the Stoic position, Book II the Academic assault upon it. The treatment in *De natura deorum* is closely similar. The Epicurean view is stated and criticized; then the Stoic view is stated and criticized. There is some disparity of space between these treatments. To some extent this reflects the greater importance that theology held for the Stoics; it also reflects a bias in Cicero. Wilamowitz once made a curiously wrong-headed remark that there were no real debates in Cicero. Cicero is not always objective in his presentation, but the principles underlying it are remarkably Hegelian.

Thirdly, his concept of his function as a philosopher (though not of the function of philosophy itself) was plainly the examination and criticism of what philosophers have actually said. This, so far as it goes, is a modern approach. Some of the detailed criticisms have a modern ring about them also. The Epicureans argued for the existence of gods on the grounds of universality of belief. Cotta's question 'How do you know what all the nations of mankind believe?' (37) might almost have been asked by Ayer or Findlay, and the assertion is brought to the empirical test of actual atheism. In fact, Cicero is always quoting actual Roman experience to illustrate or to test his theme.

Fourthly, and most important, Cicero gave to Rome, and hence to modern Europe, her philosophical vocabulary, and so inescapably moulded our patterns of thought. This was his greatest achievement; Pease called it an 'incomparable service'. Plutarch says of him (38): 'He made it his business further to compose and translate dialogues on philosophy, and to express in Latin the vocabulary of science and logic. It is said that he was the original or principal person to supply the Romans with words for

phantasia, *synkatathesos*, *epoche*, *catalepsis*, as well as *atomon*, *ameres*, and *kenon* he produced familiar and acceptable terms by the use of transference of language and other devices'. We must remember that Lucretius, who was ten years younger than Cicero, but writing before him, spoke bitterly and repeatedly of the poverty of his native language (39). He found himself continually forced to use Greek formations, of which *homoeomereiae* is merely the most notorious. Some significant Epicurean concepts, such as that which Cicero terms the *intermundia*, the spaces between the universes, Lucretius does not express at all. Cicero refuses to allow that Greek is a richer tongue than Latin; in a long passage at the beginning of *De finibus* he asserts the contrary (40), a claim repeated in the *Tusculans* (41). His age is to see the birth of philosophy in Latin literature and he is to be the midwife (42). He tells Atticus not to be alarmed about the Latin language (43). In the *Academica*, one of the works in which he is forming his style, he examines some of the difficulties of translating technical terms and admits that he has to 'manufacture' words (44). This he does with marked success. We in fact owe to Cicero the words quality, individual, vacuum, moral, property, induction, element, definition, difference, notion, comprehension, infinity, appetite, instance, science, image and species. It is interesting that in two instances we have adopted the original Greek as well, as a doublet with a different shade of meaning; we use 'atom' as well as 'individual', and 'ethical' as well as 'moral'. Some of these words were coined by Cicero. *Poiotes* was a curious invention of Plato (45). Cicero puts *qualitas* in the mouth of the encyclopedist Varro, who was working at the time on his treatise *De lingua Latina*. The whole passage is worth quoting (46).

'They called the product of force and matter body and what I may call quality. You will allow me, I am sure, to use unexampled words in dealing with unfamiliar topics. The Greeks do it, and they 've been handling these subjects for a good while now'. 'Of course we will' said Atticus, 'but if you want you can use Greek too

if Latin lets you down'. 'Thank you, but I 'll do my best to talk Latin except with words like philosophy, rhetoric, physics and dialectic which are habitually used as Latin together with many others. I 've given the name qualities to the things the Greeks call *poiotetes*. That's a technical term of Greek philosophy like many others, and not in general use. As a matter of fact the logical analysts have their own vocabulary, quite different from that of the man in the street. In fact almost all the sciences do it; they either have to invent new words for new things or extend the usage of old ones. The Greeks have been engaged in these studies for centuries, and they still do it; we 're now trying to handle them for the first time, and may perhaps be excused'. 'Varro', I said, 'you 've already added to our factual knowledge; if in addition you add to our vocabulary you 'll certainly have done well by our country'.

Cicero there speaks of inventing some words and adapting others. Examples of such adaptation are his application of *definire* to words, the logical use of *differre*, which has previously meant to 'put off' or 'delay' the extension of *elementa* from Lucretius' atoms to Aristotle's *stoicheia*, the use of *imago* (a statue) for the mental images of Stoic psychology, and above all the extension of species from outward shape (in late Latin *virgo speciosa* means 'a pretty girl') to the Platonic form or universal (47).

There is no need to press the point further. But Cicero's linguistic preoccupations make one wish for a reassessment of his work and influence by one of our contemporary linguistic analysts." (pp. 104-111).

Notes

(1) Seneca, *Dial.* 7, 12, 4.

(2) *Nat. deor.* 1, 6; 1,11.

(3) *Fam.* 13,1.

(4) *ib.* 15, 16; 15, 19.

(5) *Ad Q. fr.* 2, 9, 4.

(6) *Brut.* 90, 309; *Att.* 2, 20, 6.

- (7) *Brut.* 89, 306.
- (8) *rep.* I, 4, 7; *Tusc.* 5, 2, 5; *Off.* 2, 1, 4; *Fat.* 1, 2.
- (9) *Fin.* 1, 5, 16.
- (10) *Ac.* 2, 2, 4.
- (11) 2, 22, 69.
- (12) 2, 35, 113.
- (13) *Brut.* 91, 314 ff.
- (14) *Hort.* fr. 18, *Div.* 1, 57, 130; *Tusc.* 2, 25, 61.
- (15) *Off.* 2, 17, 60.
- (16) *Fin.* 1, 2, 6.
- (17) *Div.* 2, 2, 4.
- (18) *Att.* 13, 19, 4; *Fam.* 1, 9, 23.
- (19) *Att.* 13, 19, 4. *Fat.* 1.
- (20) 5, 4, 11.
- (21) 5, 2, 5.
- (22) 2, 4, 11.
- (23) *Fam.* 9, 1, 2.
- (24) *Inst.* 3, 14, 17.
- (25) *Tusc.* 4, 4, 7.
- (26) *Fin.* 1, 8. 27.
- (27) *Ib.* 1, 5, 15.
- (28) *Nat. deor.* 1, 5, 10.
- (29) *Ac.* 2, 38, 121.
- (30) *tusc.* 3, 11, 33; cfr. 2, 2, 5.
- (31) 1, 2, 7.
- (32) 2, 5, 15.
- (33) 4, 6, 11.
- (34) 3, 11, 24.
- (35) 2, 3, 9.
- (36) 2, 3, 7.
- (37) *Nat. deor.* 1, 23, 62.
- (38) *Cic.* 881.
- (39) I, 139; 1, 832; 3, 260.
- (40) 1, 3, 10.
- (41) 3, 5, 10.
- (42) 2, 2, 5.

(43) *Att.* 12, 52, 3.

(44) 2, 6, 17.

(45) *Theatet.* 182 A.

(46) *Ac.* 1, 6, 24.

(47) *Ac.* 1, 8, 30.

(*) [Patrick-Horace Nowell-Smith, *Ethics*, London, Penguin Books, 1954]

From: John Ferguson, "Cicero's Contribution to Philosophy", in: J. Ferguson (ed.), *Studies in Cicero*, Roma, Centro di Studi Ciceroniani Editore 1962, pp. 99-111.

CICERO: THE CREATOR OF LATIN PHILOSOPHICAL VOCABULARY

"Philosophy, the genre in which Greek, in Rome as elsewhere, must be granted the position of the dominant language, poses a special problem for a study of the language choice in that literary expression in Antiquity was not necessarily resorted to by the philosophers. Many famous philosophers never wrote anything themselves, although their pupils may have spread their doctrines in written form using their names to do so. It is not always possible to discern the original language use behind this written form, and, in general, it may be difficult to compare the phenomenon of philosophy with such genres as, for instance, history, with which literary expression was indissolubly connected.

This problem already affects the very beginning of the philosophical tradition in Rome. We find eastern philosophers in second century Rome teaching and also writing philosophical treatises in Greek: Panaetius and Hecaton from Rhodes, Philon from Larissa and Boethus from Sidon. Many Romans were in contact with them, and listened to and spread their doctrines,

probably in a Greek form and in the Greek language, although they did not use literature to do this. (p. 239)

(...)

Cicero considered himself a pioneer of Latin philosophy, and together with M. Terentius Varro and M. Junius Brutus he represents the only significant period of philosophical literature in Latin before late Antiquity. But these writers, too, had to defend their use of Latin, and their influence on contemporary society remained small.⁽¹⁾ As the works of Varro and Brutus are lost, we know only the apologies of Cicero, but interestingly, one of these occurs in a conversation with Varro (*ac. post.* 1.4-8), while another is addressed to Brutus (*de fin.* 1.1-5).

The *editio posterior* of Cicero's *Academica*, written in 45 B.C., opens with a conversation between Cicero and Varro, in which the former begs Varro to write on philosophy in Latin. Varro's attitude is negative, and he uses two main arguments to support this:

nam cum philosophiam viderem diligentissime Graecis litteris explicatam, existimavi si qui de nostris eius studiis tenerentur, si essent Graecis studiis eruditi, Graeca potius quam nostra lecturos; sin a Graecorum artibus et disciplinis abhorrerent, ne haec quidem curaturos, quae sine eruditione Graeca intellegi non possunt; itaque ea nolui scribere, quae nec indocti intellegere possent nec docti legere curarent (*ac. post.* 1.4).

[As I have seen that philosophy has been very carefully expounded in Greek, I have come to the following view about people from our country who are seriously interested in it. If they have had the benefit of an education in Greek learning, they will read works in Greek rather than in our own language. But if they have taken against Greek arts or disciplines, they won't care for Latin works, either, since the latter can't be understood without knowledge from the Greeks. As a result I have been unwilling to write works that would neither be intelligible to the unlearned nor something the learned cared to read. (On *Academic Scepticism*, translated, with introduction and notes, by Charles Brittain, Indianapolis, Hackett, 2006, p. 88)]

Varro goes on to tell us that there are philosophical works in Latin by Amafinius and Rabirius, but both their style (*vulgari sermone disputant*) and the way in which the doctrines are presented are below his own standard. (pp. 240-241)

(...)

This brings us to the best known and documented Roman translator, M. Tullius Cicero. We shall first look at what he translated -- in addition to the *Aratea* discussed above -- and then examine his opinions on the reasons for translating from Greek. The prose translations of Cicero can be divided into philosophical treatises and the speeches of Greek orators. Earliest in the former group is Xenophon's *Oeconomicus*, translated when Cicero was little more than twenty (*de off.* 2.87). (p. 286)

(...)

Cicero himself promises in *de fin.* 1.7, to translate -- sometime in the future -- passages from Plato and Aristotle.(2) We have four fragments by Roman grammarians from a work of Cicero's called *Protagoras*, which seems to be a rather accurate translation of Plato's *Protagoras*.(3) In addition, we have in the manuscript tradition a large fragment from a translation of Plato's *Timaeus*, which is also mentioned and identified by Hieronymus as a translation (*in Esaiam XII prol., in Amos lib. II, V, 3*). But the MSS have preserved part of a preface, which seems to indicate that the translation was part of a dialogue; how Cicero himself indicated the translation, how it was incorporated into the dialogue and whether the treatise of Plato was translated completely, cannot be known. If we disregard the gaps in the manuscript tradition, the translation seems to be rather faithful. Of Aristotle, nothing is known except *Topica*. This represents a very curious case: Cicero has promised to translate or at least explain(4) the *Topics* of Aristotle to Trebatius; he finds no time to do this before embarking on a voyage, in which, however, he has no books to refer to. But nevertheless he completes the task and sends the work, which he calls *Topica Aristotelea*, from Rhegium on July 28th, 44 B.C. to Trebatius (*ad fam.* 7.19). The problem is that the work has almost nothing to do with the *Topics* of

Aristotle; evidently Cicero never read the work in question.(5) Thus, we can be certain that this work of Cicero had nothing to do with translation.

I have elsewhere discussed the discrepancy between the indication in the preface and the contents, and suggested that Cicero's doctrine as regards the topics was based on an otherwise unknown Pseudo-Aristotelian treatise, and that in this sense the indication of the preface was true; but clearly, Cicero was very free in his treatment of his theme and source.(6) (pp. 286-287) If we can discern the reason why Cicero translated the speeches of Demosthenes and Aeschines, sufficient evidence for his philosophical translations can also be adduced, although this is mainly connected with the treatises, whose dependence on Greek original is less clear (see also above, pp. 240-243). In addition to the above-mentioned educational aspect, the nationalistic idea seems to supply the principal motivation for translating into Latin.(7) An extreme case is *Tusc.* 2.6, where Cicero anticipates a time when all Greek philosophical literature will be translated or transferred into Latin and Greek libraries can close down.(8) This passage belongs to a powerful exhortation to transfer the achievements of Greek philosophy to Rome.(9) One could maintain that the pioneer work of Cicero in the field of Latin philosophy consisted entirely of the adapting or translating of Greek philosophical works into Latin. He compares in *de fin.* 1.4-5 his work to that of Roman dramatists, and considers that a good Roman ought to prefer Latinized philosophy in the same way as he prefers to read the dramas of Terence and Ennius.

The fact that Cicero considers the Greek libraries worthless when the bulk of Greek literature is adapted or translated into Latin, shows that, not unlike many other Romans, he emphasized the independence of the translation or adaptation from the original. Cicero also wished to make translations very free. He had not translated Demosthenes or Aeschines as an interpreter, but as an orator (*opt. gen.* 14; 23).(10) In *de fin.* 1.6, he emphasizes that only the contents of his philosophical works are derived from the Greeks, the form is his own; he does not want to be a mere

translator.(11) Cicero distinguishes sharply between *interpretatio* and *imitatio*, an independent transferring, with an artistic purpose, of the ideas of the original.(12)

Consequently, it is clear that Cicero's translations are, or intend to be, creative and ambitious with definite artistic aims and a clear nationalistic coloring. One further question remains to be answered: does Cicero have in mind those Roman readers who are incapable of reading the Greek originals due to a defective knowledge of Greek, i.e. does the modern reason for translating apply in any way? The question is discussed in *ac. post.* 1.3-4, where Varro gives as one reason why he does not deal with philosophy in Latin, his opinion that those readers with a Greek education would prefer reading in Greek and those without such an education -- we can take this to mean, unable to read Greek -- would not be interested in philosophy anyway (see also above, p. 240). Cicero duly protests, but everything points to the fact that in the sphere of which Cicero's literary activity formed a part the reader was generally considered bilingual and that translations were therefore not necessary. (pp. 288-289)

It is time to return to Cicero, whose views on Latinity and purism have already been discussed. We have seen in the previous section that as with Livius Andronicus and his successors, the general language choice of Cicero, i.e. the choice of Latin for philosophical and rhetorical literature, rested to a large extent on a nationalistic basis. Cicero's general attitude to the Latinizing of Greek words also closely resembled that of the early poets. Again, I would not see in this a negative attitude towards the Greek language so much as a perception of the necessity of creating an indigenous vocabulary for these branches of learning.

The nationalism of Cicero's attitude shows up clearly in that his discussion of the use of Greek words is mostly connected with passages comparing the lexical resources of Latin with those of Greek, or emphasizing the needs of Latin philosophical literature: *quare bonitate potius nostrorum verborum utamur quam splendore Graecorum* (*or.* 164). This is also the starting point in *de fin.* 3.5: because the Latin vocabulary is richer than the Greek,

elaborandum est, ut hoc non in nostris solis artibus, sed etiam in illorum ipsorum adsequamur. When in this context Cicero accepts words like *philosophia* and *rhetorica*, because as *usu recepta* they have become Roman, he states that even these could easily be replaced by purely Latin terms. Central to the whole passage is the fact that all special languages use *verba inusitata*, either Greek or Latin, and as a branch of learning philosophy cannot take its vocabulary from the streets (3.4). The same idea is continued in *de fin.* 3.15: preferably one should translate Greek terms by Latin ones; if one Latin word is not enough, several may be used. But: *tamen puto concedi nobis oportere, ut Graeco verbo utamur, si quando minus occurret Latinum.*

The theory of establishing new Latin terms for hitherto unknown concepts is discussed by Cicero several times, and almost always in a defensive tone,(67) thus anticipating criticism. The alternatives at Cicero's disposal for the expressing of Greek terms in Latin are classified, mainly on the basis of Cicero's own theories, by Hartung as follows:(13) (a) to use the Greek term as such; (b) to use a Greek loan word in a Latinized form and with Latin characters; (c) to use Latin words which were exact counterparts of the Greek terms and well-known in this sense (*verba propria et usitata*); (d) to use Latin words which are transferred from another area of meaning (*verba similitudine translata*); (e) to form new Latin words. As has been noted, Cicero does not entirely ignore methods (a) and (b), either in theory or, especially, in practice; but he clearly prefers even (e) to (a) and (b). This reveals the mentality of the pioneer of Latin literature; Cicero regards himself as the founder of the terminological tradition in Roman philosophy and rhetoric, and his view is that in so far as solutions have not already been made by adopting Greek terms into Latin, the preferable solution is contained in (c), (d) or (e).

None of this can be judged against a background of purism, since from the purist point of view, the use of *verba inusitata* is to be condemned independently of the Latin or Greek origin. Neither does Cicero's view reveal a negative attitude towards the Greek

language. In addition to the nationalistic aspect discussed above, I think that a certain language theoretical view of Cicero is also applicable here, a view which emphasizes the significance of the origin of the persons, both ethnic and social, for the language which he uses. The clearest expression of this view, together with a special reference to Greek loan words, can be found in *de off.*

1.111:

ut enim sermone eo debemus uti, qui innatus est nobis, ne, ut quidam, Graeca verba inculcantes iure optimo rideamur, sic in actiones omnemque vitam nullam discrepantiam conferre debemus.

[For as we ought to employ our mother-tongue, lest, like certain people who are continually dragging in Greek words, we draw well-deserved ridicule upon ourselves, so we ought not to introduce anything foreign into our actions or our life in general. (English translation by Walter Miller, Cambridge:Harvard University Press, 1913)]

The above-mentioned passages, in which Cicero distinguishes several special languages within the Latin language, represent another expression of this view. And in a sense, we can relate to this the famous passage *Tusc.* 1.15, in which Cicero claims that he does not use more Greek in Latin than Latin in Greek: *scis enim me Graece loqui in Latino sermone non plus solere quam in Graeca Latine*. This occurs in a passage which is concerned with the quotation of a verse of Epicharmus, a quotation which Cicero makes, as his normal practice is, in Latin translation.

In the comparison of Cicero's theoretical attitude with his practice of writing, his letters must be discussed as a special group. The Greek loan words in these occur approximately as often as in Cicero's other work, if only frequency and occurrence is taken into account; but the words are more often such which only rarely appear elsewhere and can hardly be considered *verba usitata*. The main difference, however, lies in the fact that in his letters Cicero is fond of inserting Greek phrases and words with Greek spellings,(14) a licence Cicero has allowed himself in his other work only in special cases.(15) This phenomenon certainly

reflects the style used in the normal communication of the two correspondents in question; the number of Greek phrases depends not only on the theme of the letter, but also on the person to whom the letter is written; they are commonest by far in the letters to Atticus.(16) The interpretation of the phenomenon for our purposes is clear and agrees with other sources: on the one hand, the insertion of Greek phrases and words was obviously a favourite practice in civilized conversation and communication between Romans -- it even lent some kind of intimacy to the letters; (17) Greek had retained its position as the cultural language, and the attitude towards it, in this social class at least, was favourable. Sometimes Cicero and his correspondents even boast of their knowledge of Greek -- certain words are not found in the extant Greek literature -- , but at other times it is only deficiencies in the Latin which are rectified.(73) On the other hand, the rare occurrence of Greek quotations and words in Cicero's treatises and speeches was based on a deliberate avoidance of them. One could think that this avoidance or rather the stylistic ideal to which it belongs was due either to a negative attitude to the Greek language or to a nationalistic emphasis on Latinized literature; the first alternative being excluded on grounds given above, we might perhaps state a preference for the second one.

In the speeches very rare, slightly more common in the rhetorical and philosophical treatises, in which terms with Greek spellings also occur: this is the general picture of Greek loan words in Cicero.(74) Greek sources are cited outside the letters in Latin translation.(75) Cicero's theoretical principles on the avoidance and inclusion of Greek loan words accord rather well with his practice; perhaps there are a few more Greek words than one would expect, but this is probably due to the fact that our conception of what a Greek loan word is and Cicero's conception may differ greatly." (pp. 309-310)

Notes

Notes are renumbered for clarity.

(1) See E. Norden, *Die römische literatur*, (6 ed.) Leipzig 1961, 55.

(2) *locos quidem quondam, si videbitur, transferam, et maxime ab its quos modo nominavi (sc. Plato et Aristoteles), cum inciderit ut id apte fieri possit.* [If I think fit, I will translate certain passages, particularly from those authors (Plato and Aristotle) I just mentioned, when it happens to be appropriate].

(3) K. Büchner, *RE* VII A, 1150.

(4) *ut tibi illa traderem* are the words used by Cicero in *top.* 1.2; in the following Trebatius is urged to acquire the contents from a teacher of oratory, and this rather refers to explaining, but then Cicero again speaks of the charming and rich style which ought to have attracted philosophers to the work. Cassiodorus (*de art. ac discipl. lib. art.* 583 Garet) says: *Topica Aristotelis ... Cicero transtulit in Latinum.*

(5) However, B. Riposati has in his long monograph *Studi sui 'Topica' di Cicerone*, Ed. dell'Univ. Catt. del S. Cuore, Ser. Pubbl. 22, Milano 1947, attempted again to show that the principal themes and ideas of Cicero can be traced back to Aristotle.

(6) J. Kaimio, *Cicero's Topica: the Preface and Sources*, Ann. Univ. Turkuensis Ser. B Tom. 141, Turku 1976.

(7) See also A. Reiff, *Interpretatio, imitatio, aemulatio*, Diss. Köln, 1959, 25.

(8) *quodsi haec studia traducta erunt ad nostros, ne bibliothecis quidem Graecis egebimus, in quibus multitudo infinita librorum propter eorum est multitudinem, qui scripserunt.* [Besides, if these studies are ever brought home to us, we shall not want even Greek libraries, in which there is an infinite number of books, by reason of the multitude of authors among them.]

(9) *Tusc.* 2.5: *quam ob rem hortor omnis, qui facere id possunt, ut humus quoque generic laudem iam languenti Graeciae eripiant et transferant in hanc urbem . . . philosophia nascatur Latinis quidem litteris ex his temporibus.* [and therefore I recommend all men who have abilities to follow my advice to snatch this art also from declining Greece, and to transport it to

this city . . . Let philosophy, then, derive its birth in Latin language from this time.]

(10) Cf. *de fin.* 3.15: *nec tamen exprimi verbum e verbo necesse exit, at interpretes indiserti solent*. See Reiff, 40. Cf. *Hor. ars* p. 133-134: *nec verbo verbum curabis reddere fidus / interpres*, and Cicero *de off.* 1.6, 2.60.

(11) *quid, si nos non interpretum fungimur munere, sed tuemur ea, quae dicta sunt ab iis, quos probamus, eisque nostrum indicium at nostrum scribendi ordinem adiungimus, quid habent, cur Graeca anteponant iis, quae et splendide dicta sunt neque sunt conversa de Graecis?* [What of it, if I do not perform the task of a translator, but preserve the views of those whom I consider sound while contributing my own judgement and order of composition? What reason does anyone have for preferring Greek to that which is written with brilliance and is not a translation from Greek? (Translation by Raphael Woolf, Cambridge: Cambridge University Press, 2001] See also the analysis of the passage by Reiff, 26-28.

(12) See Reiff, 22-51. For Cicero's technique in his philosophical translations, see R. Poncelet, *Cicéron, traducteur de Platon. L'expression de la pensée complexe en latin classique*, Diss. Paris 1953; Jones, 'Cicero as a Translator', *Bulletin of the Institute of Classical Studies*, 6, 1959, 26-28; H. Müller, *Ciceros Prosaübersetzungen. Beiträge zur Kenntnis der ciceronischen Sprache*, Diss. Marburg 1964.

(13) H.-J. Hartung, *Ciceros Methode bei der Übersetzung griechischer philosophischer Termini*, Diss. Hamburg 1970, 20-23; cf. also Poncelet's thesis; D. M. Jones, 'Cicero as a Translator', 26.

(14) See P. Oksala, *Die griechischen Lehnwörter in den Prosaschriften Ciceros*, *Annales Academiae Scientiarum Fennicae*, ser. B, 80.1, Helsinki 1953, 91-109, 153, especially the statistics in 104 and 153; R. B. Steele, 'The Greek in Cicero's Epistles', *American Journal of Philology*, 21/1900, 387-410.

(15) See Hartung, 20-21.

(16) Cf., however, also *ad fam.* 13.15, redolent with Greek quotations, and see R. B. Steele, 'The Greek in Cicero's Epistles', 309.

(17) J. M. Pabón, 'El Griego, lengua de la intimidad entre los romanos', *Emerita* 7/1939, 126-131, 127.

From: Jorma Kaimio, *The Romans and the Greek Language*, Helsinki, Societas Scientiarum Fennica, 1979.

CICERO'S TESTIMONY OF STOIC LOGIC

The main texts of Cicero on Stoic logic can be found in:

Lucullus 91-98;

De fato 11-21

Topica 26-34, 47-49, 53-59.

(under construction)

LOGIC AND RHETORIC IN ROME AT THE TIMES OF CICERO

Rhetoric was intensely practised in ancient Greece by a series of orators whose names are still well-known. It seems to have appeared in Sicily as a special science with its own laws, whence it was taken over to Greece by Gorgias. Later, rhetoric was greatly improved by the Sophists, both from the point of view of the art of adorned speech and of the art of persuading by argument.

The first great orator is Isocrates (born about 436 B.C.) who studied under Prodicus and Gorgias. Aristotle (...) established rhetoric as a branch of dialectics and codified its rules, and Demosthenes brought that art to perfection.

The disciples of Isocrates and those of Aristotle, respectively, formed two rhetorical schools: the first was concerned rather with polishing and improving the oratorical form and style, the second, as one should expect, was concerned with constructing the arsenal of the art of persuasion.

What is significant and testifies to the closer link between logic and rhetoric, and generally, between the latter and philosophy, is the fact that those who studied rhetoric most were the philosophers of the Peripatetic and Stoic schools.

Starting with the second century B.C. systematized treatises on rhetoric began to be written, such as that of Hermagoras of Temnos (about 120 B.C.).

As the general preoccupations acquired an ever growing practical character, especially under Roman rule (the Roman spirit being pre-eminently practical and formalistic), studies of rhetoric flourished in Greece, which explains why later, when logic reached Rome through the Greek rhetors, it was only a discipline to be learned in connection with rhetoric.

The conservative section of the Roman society was at first rather opposed to the Greek rhetoricians who, by their pro and contra arguments of the same thesis, shocked the Romans' commonsense. Thus, in 161 B.C. by a *senatus-consultus*, all the Greek rhetors were banished from the Eternal City. Afterwards, however, Latin rhetors appeared, who had studied in Greece, but neither were they favourably regarded by the authorities, and therefore were officially blamed by the Roman censors about the year 92 B. C. In Caesar's epoch, however, rhetoric became a free art, both in respect to learning and practising it. It came to be so highly valued, that emperor Vespasianus (7-79 A.D.) ordered public schools of rhetoric to be set up, with Greek and Latin masters, who were to be state stipendiaries.

On the other hand, we see logic, which for centuries had ranked first among the concerns of the Greek philosophers, come to Rome and be overshadowed by rhetoric, groping to acclimatize its terminology and devoid of any creative force.

We shall further examine these Latin orators and philosophers whose works bear witness to the way logic was introduced to Rome, to the way in which the logical terminology was established (no easy problem), and to the general conceptions of the Roman philosophers about logic. We shall briefly survey the most remarkable among them.

MARCUS TULLIUS CICERO (106-43 B.C.)

Dialectics was introduced by M. Terentius Varro (116-28 B.C.) through his encyclopedic work *De novem disciplinis* ("On the nine sciences").

Varro was a pupil of Antiochus of Ascalon. He wrote prolifically (he himself declared he would have written up to the age of 84 years, 490 books). Contemporary inquiries ascribe to him altogether 620 books (74 independent works). His writing which interests us especially is the above mentioned, *De novem disciplinis*, a synthesis of the whole science of his time. It is undoubtedly the origin of the seven liberal arts, which will be the basis of the Scholastic learning, and of which we will speak further. In this work, Varro, treated the following disciplines, divided into two groups:

- (1) grammar, dialectics and rhetoric;
- (2) geometry, arithmetic, astronomy, music, medicine and architecture.

Varro enjoyed a great prestige in his time, and a long time afterwards he was considered as an unquestionable authority in the "disciplines" he wrote about. For instance, Augustine named him *doctissimus Romanorum* ("the most learned Roman") in his work *De civitate Dei* (XIX, 22).

The fragments remaining from Varro were gathered, translated and published by F. Brunetti (Venice, 1874)(*). An interesting

study on the logic aspects of the work of Varro was published by Lucien Gerschel: *Varron logicien I. Etude sur une séquence du De lingua latina*

("Latomus", 1958, pp. 65-72).

The first one interested, however, in translating the Greek logical terminology into Latin is Marcus Tullius Cicero, the greatest Roman orator and one of the greatest in the world. His work is considerable. We shall only mention his writings dealing with logic or with the manner in which the Romans conceived it.

-- *De Inventione* ("On invention") is a treatise imitating *Rhetorica, ad M. Herennium*, a work ascribed to Q. Cornificius (tribune of the plebs in 69 B.C.).

-- *De Oratore* ("On the Orator") is a work in which Cicero displays the Ancients' concept of the value and means of the oratorical art; written in the form of a dialogue, the main roles are granted to two of the greatest orators of the previous generation, L. Crassus and M. Antonius.

-- *Brutus*, also written as a dialogue between Atticus and Brutus, represents a real history of Roman eloquence. He quotes over two hundred older orators but among his contemporaries, Cicero only mentions Caesar, Sulp. Rufus, and M. Marcellus.

-- *Orator* is a short writing, in which the author depicts the type of the ideal orator.

-- *Partitiones Oratoriae* ("The Oratorical divisions") is a manual written as questions and answers for his son's instruction.

-- *Topica* comprises a kind of commentary addressed to C. Trebatius, where Cicero reveals how the oratorical art can make use of the means offered by logic.

-- *De optime genere oratorum* ("On the best style of Orators") is an opusculum in which Cicero pleads for the Attic oratorical style (this booklet was written as a preface to the translation of the speeches made by Aeschines and Demosthenes in connection with the famous "Affair of the Crown").

Cicero's works, were published under the title *Opera Omni* by C. F. Miller and G. Friedrich in 15 vols. (Leipzig, beginning from 1878). A critical Latin edition, with Italian translation, published "Centro di Studi Ciceroniani" (Rome, beginning from 1964).

For the philosophical terminology of Cicero we have the writings of H. Merguet: *Lexikon zu den philosophischen Schriften Ciceros* (2 vols., 1905-1906), and *Lexikon zu den Reden des Ciceros* (4 vols., 1877-1884). Both were printed at Jena, and reproduced, after the original, at Hildesheim (1960-1962).

More information, concerning Cicero's philosophical terminology, can be found in A. Michel's *Rhétorique et philosophie chez Cicéron* (Paris, 1961).

Two things in Cicero's works are relevant to the history of logic, namely: the invention of a Latin terminology corresponding to the Greek one, and information on Stoic logic whence we become aware that the Romans practised those forms of logic. Cicero, like the other Roman rhetors and thinkers, made no original contribution.

Cicero's logical terminology is rather hesitating. Even the name of that discipline he rendered λογική, and sometimes by διαλεκτική, which he was unable to translate into Latin and he therefore kept generally the Greek terms in the Latin text. However, he sometimes translated those two Greek words by *ars disserendi* -- "the art of discussing" (De Oratore, II, 38) or *ars disceptatrix* -- "The art of deciding".

Here is an example of his use of the Greek term λογική -- logic, in a Latin text, namely in a fragment from *De finibus bonorum et malorum* ("On the Purpose of the Good and Bad Things", I, 7): *Jam in altera philosophiae parte, quae est quaerendi ac disserendi quae λογική dicitur, iste vester plane. . . inermis ac nudus est.* ("Also in the second part of philosophy, which deals with research and discourse, and is called λογική, that [master] of yours is unarmed and defenceless").

In *De Inventione* (XXVIII, 42) Cicero began to employ such Latin terms as: *adversum*, *contrarium*, *negans*, for ἀποφατικόν (negative), *oppositum* for ἐναντίον (opposite) and *repugnans* for

ἀντπατικόν (repelling). For the idea of sentence, Varro and Aelius mentioned in their texts the Greek term ἄξιωμα, which they would sometimes render by *proloquium*. Cicero's translation of "sentence" varies: *effatum*, *pronuntiatum*, *enunciatum* or *enuntiato*. (*De Inventione*, 1, 37). In the texts dealing with the classification of judgements according to their quality, Cicero started from the verb *aio* -- I affirm, and *nego* -- I deny, and translated καταφατικόν (affirmative) by *aientia*, and ἀποφατικόν (negative) by *negantia*.

In *Topica*, meant to be a rendering of the treatise bearing the same title by Aristotle, Cicero introduced terms which definitely remained in logic such as: *definitio*, *genus*, *species (forma)* etc. He hesitated in the translation of the word τόπος for which he used in turn the terms, *locus*, *sedes* and *nota*: *locum esse argumenti sedem* -- *locus is sedes* (the seat) of the argument. As regards the Stoic dialectics, it dissatisfied Cicero "because it only gives the art of argumentation, not that of inventing -- *invenire*, too". However, he translated and explained at the same time, the terms of the hypothetical reasoning (*De Divinatione*, II, 53). Lemma -- λεμμα -- is translated by *sumptio*, πρόσληψις by *assumptio*, and ἐπιφορά by *complexio*. Concerning the reasoning, Cicero introduced the term *inductio* for ἔπαγωγή and divided all arguments into two groups: induction; and deductive reasoning "as most of the Greeks do [who divide them] into παραδείγματα and ἐπιχειρήματα, interpreting παραδείγμα as oratorical induction (Quintilianus, *De Institutione Oratoria*, 11).

Although he was not too interested in the Stoics' modes of argumentation, Cicero enumerated the five undemonstrable Stoic arguments, from, which, he said "numerous others" can be derived (*Topica*, 54-57). He gives the following examples to this effect, which may represent the sixth and seventh arguments:

6) *Non et hoc et illud; hoc autem; non igitur illud.*

Not both this and that; but this; therefore not that.

7) *Non et hoc et illud; non autem hoc; illud igitur.*
Not both this and that; but not this; therefore that.

Related to Cicero's rhetorical logic, mention should be made of the Greek Epicurean Philodemus of Gadara (first century B.C.). He came to Rome, became acquainted with and then highly appreciated by Cicero, and Lucretius himself seems to have been among his disciples.

Several epigrams by him were known, but after the diggings at Herculaneum no less than 36 philosophical books by the same writer were found. Unfortunately, they were in rather bad state and could be only partially deciphered.

M.E. Gros published the fragments referring the oratorical art separately, under the title *Philodemi rhetorica* (Paris, 1840). In one of these newly found treatises, significantly entitled *On Signs and Significances* (**), Philodemus opposed the Stoic conception (called "dogmatic" at the time), set up an empirical theory of knowledge and examined the inductive methods of natural sciences." (pp. 273-276)

Notes

(*) [*Libri di M. Terenzio Varrone intorno alla lingua latina*, edited and translated in Italian by Pietro Canal (first edition 1846-1854), reprinted Venice: Giuseppe Antonelli, 1874, with the addition of the fragments with notes by Federico Brunetti. The *De novem disciplinis* is lost, but Friedrich Wilhelm Ritschl collected the extant fragments in: *De M. Terentii Varronis disciplinarum libris commentarius* (Bonn, 1845), reprinted in: F. Ritschl, *Opuscula philologica*, Vol. III, Leipzig 1877, 353-402. Note added by R. Corazzon]

(**) Philodemus, *On Methods of Inference. A Study in Ancient Empiricism*, edited, with translation and commentary, by Phillip Howard De Lacy and Estelle Allen De Lacy, Philadelphia, Pa., The American philological association 1941; new revised edition: Napoli: Bibliopolis, 1978. Note added by R. Corazzon]

From: Anton Dumitriu, *History of Logic*, Tunbridge Wells: Abacus Press 1977, Vol. I.

"For some centuries after Stoic logic had been formulated by Chrysippus we find discussion of the merits of his system and that of Aristotle, then a gradual fusion, or perhaps we should say confusion, which was completed at the end of classical antiquity in the work of Boethius. When the study of logic was resumed after the Dark Ages, the writings of Boethius were better known than those of Aristotle and his reputation as high. Some part of the Stoic contribution remained, therefore, in what we now call traditional logic, though weakened later by a revival of interest in Aristotle, which led sometimes to a kind of Aristotelian purism. In this section we shall try to trace the transmission from Greek antiquity to the Middle Ages giving names and dates where these are likely to be useful. But we shall not attempt to treat even the famous philosophers of this long period in detail, since our purpose is only to give perspective to our view of antiquity and the Middle Ages.

During the last two centuries B.C. and the first century A.D. the philosophical schools in Athens existed side by side, competing for pupils with doctrines which followed more or less closely those of their founders; but the Stoics and the Epicureans were the most influential. Plato's Academy became presently a home of scepticism with Carneades as its most famous member, and Aristotle's influence was not very strong. If we may judge from the writings of Cicero, the Stoic school was the dominant one in his day. No doubt there were developments in that school after the time of Chrysippus, but we cannot now separate them from his work, because the ancient tradition is not full enough. Later writers such as Galen, Alexander, and Boethius speak constantly of the Stoics or 'the moderns' (οἱ νεώτεροι) without troubling to distinguish individuals.

Cicero made no original contribution to the development of logic, but his writings preserve some scraps of information about the

teaching of the Stoics, and in this, as in other fields of philosophy, he did a useful service by inventing Latin equivalents for Greek technical terms. *Propositio*, for example, was introduced by him, but not with exactly the same sense as that it commonly has in later Latin. In his terminology it means the leading premiss of an argument (το ἡγεμονικὸν λη + ῥημα), and is used to make a contrast with *assumptio*, which means the additional premiss (ἡ πρόσληψις). (1) This special sense is to be found later in the logical writings attributed to Apuleius and Martianus Capella, but already before the end of the first century A.D. the word was used by Quintilian, the rhetorician, in the more general sense of 'statement' or 'indicative sentence' which it retained throughout the Middle Ages.

Cicero's word for a conclusion in the passage we have just noticed is *complexio*, which means literally 'a knitting together', but it is interesting to notice that the same word occurs elsewhere in the book with the sense of 'dilemma': '*Complexio est in qua, utrum concesseris, reprehenditur ad hunc modum: Si improbus est, cur uteris? Si probus, cur accusas?*' (2) No doubt such reasoning was popular with the Hellenistic rhetoricians from whom Cicero took his material, and it may have been cultivated by them rather than by the Stoic logicians, who first studied conditional and disjunctive arguments. The 'theorem with two complex premisses' which we noticed in our section on the system of Chrysippus is, of course, a special case of the kind of argument called by later logicians a simple constructive dilemma (i.e. in Stoic terminology 'If the first, then the third; if the second, then the third; but either the first or the second; therefore in any case the third'), and the paradox of the crocodile and the baby, which Lucian attributes to Chrysippus, (3) involves an argument of similar pattern. So there can be no doubt that the Stoics were familiar with this development of their logic. On the other hand, according to Chrysippus all good arguments are διλήμματα in the original sense of 'arguments with two premisses'; and there is no evidence of the use of the word διλήμματον in the modern sense of 'dilemma' before the second century A.D., when it occurs in the

work of the rhetorician Hermogenes with an explanation like that given by Cicero for *complexio*, namely by reference to two questions, both equally awkward to answer. (4)

Among Cicero's philosophical works there is a small treatise called *Topica* which has had considerable influence on the teaching of logic because it was highly regarded in late antiquity, when logic was associated with rhetoric in the way he thought proper. This book professes to be an adaptation of Aristotle's *Topics* for the use of a friend called Trebatius, but it shows little trace of direct borrowing from Aristotle's work. It is conceived as a manual for the training of Roman orators and is therefore furnished with illustrations from Roman jurisprudence. Probably the plan, such as it is, was derived from some Hellenistic manual; for the topics discussed here are mentioned in the same order in the *De Oratore*, (5) as though they were in fact commonplaces of that age. Some topics, it is said, are connected intrinsically with the subject to be discussed (*in eo ipso de quo agitur haerent*), e.g. those concerned with definition, genus, species (or in Cicero's terminology *forma generis*), while others are brought in from without (*assumuntur extrinsecus*), e.g. that which involves appeal to authority. With some elaborations this simple classification was retained as long as men thought there was anything to be learnt from the study of topics." (pp. 177-179)

Notes

(1) De Inventione, I.57 ff.

(2) Ibid. 45

(3) Vitarum Auctio, 22.

(4) Hermogenes, De Inventione, IV.6.

(5) De Oratore, II.162-73.

From: William and Martha Kneale, *The Development of Logic*, Oxford: Clarendon Press 1962.

CICERO'S TOPICA

"It is a commonplace to talk, in general terms, of the dependence of all European thought and learning on Greek philosophy, and more particularly on Greek logic. It is a commonplace, also, to analyse the structure of individual works of Latin literature in terms of the divisions and subdivisions in the treatment of the subject involved, with their frequent prefatory definitions. This is a method that may in many cases be taken from recent Greek models of various kinds, in particular works on rhetoric or grammar, but which for Cicero goes back to the dialectic of the philosophers, and which Fuhrmann has traced even beyond Socrates to the sophists.(1) It is perhaps less of a commonplace, though doubtless rash, to try to take a comprehensive view of the Romans' attempt, over a wide spectrum of subjects, to apply this method, to try to see how important they felt it to be, and how far they were successful in it. The extent to which they regarded it as the transformation of the subjects in question into τέχναι or *artes* must also be considered. I want to stress that we are not merely dealing with an expository method used in introductory handbooks of little intellectual originality, as Fuhrmann's useful *Das Systematische Lehrbuch* might suggest, but that it came to seem to the Romans simply the best way to think and write about a serious subject, to be applied both on a large scale, i.e. to works in a number of books, and on a small one, i.e. inside a single book. The Roman attempt to organize almost the whole body of their knowledge into a series of systematic and comprehensible wholes along these lines can be seen as a development in intellectual history of great importance for later times. This attempt probably began before the first century BC opened, and continued to make more measured progress after it closed. But the earlier and middle first century is that of its most enthusiastic, indeed sometimes over-enthusiastic, adoption. If we see this, it should help us also to understand certain aspects of two of the most important figures of the time, Cicero himself and

Varro, better than is always done, and to put into some sort of context the present lively argument as to what exactly was happening in Roman jurisprudence at this period.

In his *Topica*, which are aimed at persuading the lawyer Trebatius that rhetorico-philosophical ways of finding arguments may be useful to him, Cicero, possibly in the wake of Stoic dialectic, carefully distinguishes between *partitio*, μερισμῶς, listing the parts, or some of the parts, that go to make up a whole, and *divisio*, διαίρεσις, that operates with the concepts of *genus* and subordinate *species*, though because he does not like the forms *specierum* and *speciebus* he declares that he will use *forma* instead of *species* (the Greek terms are of course γένος and εἶδος). He also states that both *partitio* and *divisio* are forms of definition.(2) But in practice both he and other Romans are often far from precise: *genus*, *pars*, *species* and *forma* are used pretty indiscriminately,(3) and as we shall see definitions are actually often thought to be better if they are unphilosophically loose. But this does not make the adoption of the system less important, or alter the fact that it was felt to be derived from philosophy. Cicero at least was of course aware that there was much more to dialectic than the two procedures we have mentioned; but it is these that were most widely grasped and applied." (pp. 324-325 of the reprint)

Notes

(1) Manfred Fuhrmann: Das systematische Lehrbuch. Ein Beitrag zur Geschichte der Wissenschaften in der Antike Gottingen: Vandenhoeck & Ruprecht, 1960, chap. 1.

(2) Cicero, *Topica* 28 f.; cf. Dieter Nörr, *Divisio und Partitio. Bemerkungen zur römischen Rechtsquellenlehre und zur antiken Wissenschaftstheorie*, Berlin:Schweitzer, 1972. M. Talamanca, Lo schema "genus-species" nelle sistematiche dei giuristi romani' (*Problemi attuali di scienza e cultura: colloquio italo-francese: La filosofia greca e il diritto romano.*), Roma 14-17 aprile 1973,

Tomo II Accademia Nazionale dei Lincei, (1977) 103, 145, 156 argues that this is peculiar to Cicero.

(3) As their Greek equivalents are by Plato, probably Speusippus, and often Aristotle (in the biological as opposed to the logical works; also Theophrastus): D. M. Balme, 'Τέξος and εἶδος in Aristotle's Biology', *Classical Quarterly* XII (1962) 81. Diog. Laert. VII 39 reveals that some philosophers described as εἶδη of philosophical λόγος what others called γέννη; Strabo I 2 6 seems distinctly confused about the εἶδη of discourse, λόγος, which is γενιχός.

From: Elizabeth Rawson, "The Introduction of Logical Organisation in Roman Prose Literature," *Papers of the British School at Rome* 46: 12-34 (1978). Reprinted in: E. Rawson, *Roman Culture and Society: Collected Papers*, Oxford: Clarendon Press 1991, pp. 324-351.

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Editions and Translations of the Philosophical Works of Cicero

LIST OF THE PHILOSOPHICAL AND RHETORICAL WORKS OF CICERO

Cicero gives a list of his philosophical works in the preface to the second book of *his De divinatione*:

"After serious and long continued reflection as to how I might do good to as many people as possible and thereby prevent any interruption of my service to the State, no better plan occurred to me than to conduct my fellow-citizens in the ways of the noblest learning — and this, I believe, I have already accomplished through my numerous books. For example, in my work entitled *Hortensius*, I appealed as earnestly as I could for the study of philosophy. And in my *Academics*, in four volumes, I set forth the philosophic system which I thought least arrogant, and at the same time most consistent and refined. And, since the foundation of philosophy rests on the distinction between good and evil, I exhaustively treated that subject in five volumes and in such a way that the conflicting views of the different philosophers might be known. Next, and in the same number of volumes, came the *Tusculan Disputations*, which made plain the means most essential to a happy life. For the first volume treats of indifference to death, the second of enduring pain, the third of the alleviation

of sorrow, the fourth of other spiritual disturbances; and the fifth embraces a topic which sheds the brightest light on the entire field of philosophy since it teaches that virtue is sufficient of itself for the attainment of happiness. After publishing the works mentioned I finished three volumes *On the Nature of the Gods*, which contain a discussion of every question under that head. With a view of simplifying and extending the latter treatise I started to write the present volume *On Divination*, to which I plan to add a work on *Fate*; when that is done every phase of this particular branch of philosophy will be sufficiently discussed. To this list of works must be added the six volumes which I wrote while holding the helm of state, entitled *On the Republic* — a weighty subject, appropriate for philosophic discussion, and one which has been most elaborately treated by Plato, Aristotle, Theophrastus, and the entire peripatetic school. What need is there to say anything of my treatise *On Consolation*? For it is the source of very great comfort to me and will, I think, be of much help to others. I have also recently thrown in that book *On Old Age*, which I sent my friend Atticus; and, since it is by philosophy that a man is made virtuous and strong, my *Cato* is especially worthy of a place among the foregoing books. Inasmuch as Aristotle and Theophrastus, too, both of whom were celebrated for their keenness of intellect and particularly for their copiousness of speech, have joined rhetoric with philosophy, it seems proper also to put my rhetorical books in the same category; hence we shall include the three volumes *On Oratory*, the fourth entitled *Brutus*, and the fifth called *The Orator*."

(II, 1-4; English translation by W. A. Falconer, Loeb Classical Library, Harvard University Press, 1923).

Complete list of the works:

A) PHILOSOPHY:

1. *De Republica* (Books: Six; Date: 54-51; only Fragments are extant).

2. *De Legibus* (Books: Three; Date: Broken off and late aside in 51, taken up again in 46; unfinished).
3. *Paradoxa Stoicorum* (Six Paradoxes; Date: Early Spring 46).
4. *Consolatio* (Books: Two; Date: Spring 45; Only 16 Fragments are extant).
5. *Hortensius* (Books: One; Date: Spring 45; Only Fragments are extant).
6. *Academica* (Book 1 (*Varro*): The first quarter of the Second Edition; Book 2 (*Lucullus*): the second half of the First Edition; Date: May-July 45).
7. *De Finibus Bonorum et Malorum* (Books: Five; Date: May-July 45).
8. *Tusculanae Disputationes* (Books: Five; Date: June-August 45).
9. *De Natura Deorum* (Books: Three; Date: June-August 45).
10. *De Divinatione* (Books: Two; Date: Book 1 before the Ides of March 44; Book 2 after).
11. *De Fato* (Books: One (fragmentary); Date: March (after the Ides) - June 44).
12. *Cato Maior de Senectute* (Books: One; Date: Before the Ides of March; late 45 or early 44).
13. *De Amicitia* (Books: One; Date: Summer or early Autumn 44).
14. *De Officiis* (Books: Three; Date: Books 1 and 2 begun between 9 and 25 October 44; finished by 5 November; Book 3 finished by 9 December).

B) RHETORIC:

1. *De Inventione* (Books: Two; Date: between 87 and 81 BC).
2. *De Oratore* (Books: Three; Date: 55-52).
3. *Brutus* (Books: Two; Date: Early 46).

4. *Orator* (Books: One; Date: Summer 46).
5. *De Optimo Genere Oratorum* (Books: One; Date: 46).
6. *Partitiones Oratoriae* (Books: One; Date: 46).
7. *Topica* (Books: One; Date: July 44).(ca 88-89 BC)

The *Rhetorica ad Herennium*, (ca. 88-90 BC), was formerly attributed to Cicero, but is of unknown author (Critical edition: *Rhetorica ad Herennium*, Loeb Classical Library. Latin text and English translation by Harry Caplan, Cambridge: Harvard University Press 1954).

Cicero translated a part of Plato's *Timaeus* and the *Protagoras*, but only the translation of the *Timaeus*, with Cicero's own preface, survive (Critical edition: *De divinatione; De fato; Timaeus*; edidit Remo Giomini, Leipzig: Teubner, 1975).

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The Philosophical Works of Cicero. A Selected Bibliography

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"In many passages, Cicero analyzes Stoic language in a precise, though polemical, way. Since a syllogistic style coexists with a more abundant one in the same speech, he wholly discredits Stoic rhetoric and declares that the philosophers of the Porch only possess one way of expressing themselves, the dialectical one, whose validity he contests both in the practice of philosophy, which he thinks is ineffective, and in the field of oratory, because such a style is fundamentally inappropriate to every possible audience. In De Oratore, Crassus analyzes Stoic philosophical

expression from a rhetorical point of view, whereas he studies Academic and Peripatetic philosophical eloquence without examining if it would suit an orator. In *Brutus*, the eponymous character insists on the so-called unity and homogeneity of Stoic eloquence, both in Athens and in Rome, in philosophical conversations and in forensic, deliberative or encomiastic speeches. The description of Diogenes of Babylon's style by Antony confirms that Stoic language is restricted to dialectic, and thus unable to delight, to move or even to teach. It is also dry, obscure (because of a constant gap between *res* and *uerba*), useless as far as invention and topics are concerned, and above all, self-destructive. However, Stoic dialectic did have a heuristic function, and not only a defensive or an agonistic one."

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Cicero adds rhetoric to the usual tripartition of philosophy into ethics, physics, and dialectic.
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"Philosophy for Cicero implies not only a way of life taught orally in a school but also reading and writing. This foreshadows his influence on the later Latin tradition, which identified philosophy with the meaning and evaluation of texts, and ultimately replaced its conception as an autonomous way of life. I propose four factors in Cicero's

influence: initiating the tradition of Latin philosophical prose; developing its vocabulary; the choice of a rhetorical over a dialectical mode; and locating discussion in the context of libraries, reading and book production."

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"The two moments of Cicero's methodology are invention and judgment, the discovery of things or arguments or symbols and their consequent testing, criticism or verification. His dialogues provide both, not by moving dialectically from oppositions to an assimilation of lesser truths into the greater, but by the perspectival discrimination of scientific formulations into their diverse frames of reference and uniting them into irreducible controversy. Controversy constitutes the universal method, and its product is probabilities. The rhetorical is distinguished from the philosophic as this single method is brought to bear upon particular cases (*causae*) or universal questions (*quaestiones*). The four aristotelian questions of inquiry transpose into the four questions of controversy, queries about facts, symbols, kinds, and pragmatic consequences. An example of their structural usage is found in Cicero's treatment of the gods."
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"Studies the evolution from Cicero's probabilism, through its rejection by Lactantius, for whom only Christianity can supply the indubitable truths required by philosophy; to Augustine's *Academici*. The ignorance of ultimate truth which, for Cicero, is the end result of philosophy, is for Augustine only the starting-point. Truth, being divine, is superior to the human mind, and can be known to us only through divine self-revelation."
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"In *On Invention*, Cicero discusses both induction and deduction. In regard to the latter, Cicero presents a controversy between those who advocate a five-part analysis of deductive reasoning and those who prefer three parts. The issue is not practical or pedagogical, but conceptual in nature. Cicero himself prefers analysis into five parts, and rather confusingly he presents the argument of the advocates of five parts as if it were his own. The argument is striking in that it makes elaborate use of mixed hypothetical syllogisms in order to argue for five parts. Cicero claims that the five-part analysis has been preferred by all who take their start from Aristotle and Theophrastus. A survey of what Theophrastus is reported to have said concerning the hypothetical syllogism renders Cicero's claim intelligible. That is not to say that Theophrastus himself advocated a five-part analysis. Most likely the association with him derives from his known interest in hypothetical syllogistic. Later rhetoricians who identified themselves with the Peripatos made the connection with the founders of the school, thereby gaining authority for a controversial analysis."
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"This article is based on a general principle: the study of a fragmentary author should begin with a study of the sources. The particular subject is Cicero as a source for Theophrastus' rhetorical doctrine. The works *On Invention*,

On the Orator and *Orator* are considered one after the other. The reliability of Cicero is tested by comparing what is said about Aristotle with what we read in the existing *Rhetoric*. Grounds for caution will be found. In the case of Theophrastus, we shall discover that Cicero does have value as a source, but his value should not be overstated. The reports are often quite general and sometimes they involve Ciceronian additions."

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"Cicero is well acquainted with Peripatetic philosophers from Theophrastus up to his own time. But he does not approve of their philosophical tenets and quotes them but rarely. Some general conclusions may be drawn as to Cicero's reliability as a "source author": Wherever Cicero cites his authority he may be trusted. More often, however, his statements about Greek philosophers (given in vague and general terms) are thoroughly tinged with his own philosophical convictions. Verbatim quotations of Greek 'sources' are to be found only where Cicero says so, explicitly. All other passages are of his own wording and should not be regarded as 'fragments'."
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"Philo is the first to use the Greek expression *nomos tes phuseos* frequently, but the same idea occurs earlier in Cicero. Both Philo and Cicero drew on a Stoic tradition, which was part of a broad movement of social-political philosophy. Antiochus of Ascalon, head of the Academy in the early first century B.C., was the key figure and the thinker upon whom Cicero and, probably, Philo depend. The Christian idea of natural law and the philosophical rationalization of Roman law derive from the transcendent conception of the law of nature."
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"What is the origin of the list of Topics in Cicero's *Topics* and other works? Aristotle's primarily dialectical topics were transferred to rhetoric and law, and Cicero's inept treatment suggests a Greek original designed for different purposes. The fifth-century Martianus Capella has a similar list and, separately, some propositional logic identical with that embedded in Cicero's list. Both may have a post-Chrysippean Stoic original. Boethius claims to give a list of topics from Themistius, but that is confused. Cicero's account of what a topic is may come from Theophrastus, but his sources are many."
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"La création par Cicéron du vocabulaire philosophique latin a été un acte d'une grande audace intellectuelle, à l'égard duquel Atticus et Varron ont d'abord été très réservés, pour des raisons à la fois culturelles et philosophiques. C'est l'élaboration dans les *Académiques* d'une terminologie fort complexe, destinée à rendre les concepts gnoséologiques stoïciens et académiciens, qui a renforcé la confiance que Cicéron a toujours eue dans les possibilités philosophiques de la langue latine. L'étude de ce vocabulaire (*epoché*, *katalepton*, *sugkatathesis*, *ennoia*, *prolepsis*) montre que, si le principal souci de Cicéron était de concilier précision et *uarietas*, il a néanmoins exprimé, par son choix ou sa création de certains termes, une vision du monde qui ne coïncidait pas nécessairement avec celle des philosophes grecs. La construction du concept de "probable" à partir du *pithanon* et de l'*eulogon* confirme à quel point cette démarche aura été féconde."
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 "Cicero held a complex position towards Middle Platonism. His masters, Philo of Larissa and Antiochus of Ascalon, each in his own way, had used elements which were to influence the emergence of this kind of thought. As for him, who inherited both of these teachings, he defines himself as a rigorous New Academic, but his work includes most of the ingredients usually considered as the theoretical core of Middle Platonism. The invention of *qualitas* has much to do with this situation. Apparently, this word is the exact equivalent of Stoic *poiôtés* however, it is original insofar as it does not refer any more to the Stoic theory of principles, since the active power acting on matter is not identified with the *pneuma* any more. As he identifies *qualitas* with the qualified object, Cicero, through Antiochus-Varro, leaves room to the hypothesis that the world may not have a material origin."
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Philosophy and Philosophical Rhetoric 445; 16. George A. Kennedy: Cicero's Oratorical and Rhetorical Legacy 481; 17. Christopher P. Craig: A Survey of Selected Recent Work on Cicero's Rhetorica and Speeches 503; Christopher P. Craig: Bibliography 533; General Index 601; Index Locorum 622-632.

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- "La philosophie morale joue un rôle dominant dans la pensée de Cicéron. On a reproché à la langue qu'il emploie l'imprécision, l'équivoque et le manque de personnalité; on a souligné que le latin se prêtait mal à la transcription d'enseignements grecs. En réalité, la démarche de l'orateur est originale, fondée sur la mise en relation de la rhétorique, de la philosophie et de la romanité (dialogue et doxographie, langage et *mores*, esthétique et sagesse). Ainsi apparaissent, autour de la notion d'*humanitas*, un certain nombre de termes qui resteront fondamentaux jusqu'à notre temps."
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- "L'esame della terminologia filosofica di Cicerone non seguirà il più comune e più noto ordine della tripartizione stoica (logica - fisica - etica), bensì quello che Cicerone stesso si è dato nel proemio al secondo libro del *De divinatione*, e su cui si è opportunamente soffermato P.

Boyancé (1), e precisamente: problema della conoscenza (*Academica*), etica (*De finibus e Tusculanae*), fisica (*De natura deorum, De divinatione, De fato*); la logica, in particolare il suo aspetto di *quaestio per I dunaton*, si ricollega al *De fato*. Sarebbe, questo, un ordine che rispecchierebbe la successione di Antioco di Ascalona, secondo il quale l'etica precederebbe la fisica." p. 103.

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"An analysis is given of the 16 passages in Cicero's rhetorical and philosophical works where the names of Aristotle and Theophrastus are mentioned together. Cicero joins them together so often (1) because of his great interest in philosophical successions, and (2) because he regards the encyclopedic research carried out in the early Peripatos as an example to follow in his own attempt to present philosophy to a Roman audience."

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The Works of Boethius. Editions and English Translations

BIBLIOGRAPHICAL GUIDES ABOUT THE PHILOSOPHY OF BOETHIUS

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For more information see: John Magee and John Marenbon, *Appendix: Boethius' Works*, in: John Marenbon (ed.), *The Cambridge Companion to Boethius*, Cambridge: Cambridge University Press, 2009, pp. 303-310.

"This Appendix is designed as a user's guide to Boethius' works. It is divided according to the four main spheres of his activity - (A) mathematical subjects; (B) logic; (c) theology; (D) the *Consolation* - with additional sections on (E) lost works and (F) works sometimes misattributed to him. For each work, there is a very brief description, any questions over its authenticity and completeness are considered and a dating given, where possible; the best edition is cited (and any other useful ones) and details of translations and commentaries given, where applicable."

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The *editio princeps* was published at Venice in 1491-1492 and reprinted 1497-1499, 1523, 1536.
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The edition by Glareanus with the partial editions of Renatus Vallinus (London 1656) and Pierre Cally (Paris 1680) were reproduced in Jacques Paul Migne, *Patrologia Latina* vol. 63 and 64 (= PL).
Patrologia Latina vol. 63.
Contents:

N. of Columns:

555 - 562C Vita Operaque [Editor]

561 - 574D Vita Operaque. Testimonia Variorum De Boethio Et Ejus Scriptis

579 - 870A De Consolatione Philosophiae

1079 - 1167A De Arithmetica Libri Duo

1307 - 1352C Euclidis Megarensis Geometriae Libri Duo ab A. M. Severino Boethio Translati [opera spuria]

1352 - 1364D Liber De Geometria [opera spuria]

Patrologia Latina vol. 64.

Contents:

N. of Columns:

9A - 70D In Porphyrium Dialogi A Victorino Translati

71A - 158D Commentarii In Porphyrium A Se Translatum

159A - 294C In Categorias Aristotelis Libri Quatuor

294D - 639A In Librum Aristotelis De Interpretatione Libri Duo

639B - 712C Priorum Analyticorum Aristotelis Libri Duo

712D - 762B Posteriorum Analyticorum Aristotelis Libri Duo

762C - 832A De Syllogismo Categorico

832B - 876C De Syllogismo Hypothetico Libri Duo

876D - 892A De Divisione

892B - 910C Liber De Diffinitione [the author is Marius Victorinus, not Boethius]

910D - 1008C Topicorum Aristotelis Libri Octo Severino Boethio Interprete

1008D - 1040C Elencorum Sophisticorum Aristotelis Libro Duo Severino Boetio Interprete

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1217D - 1221C Speculatio De Rhethoricae Cognatione [opera spuria]

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 Theological tractates:
 1247A - 1256A Quomodo Trinitas Unus Deus Ac Non Tres
 Dii
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 "Contains the complete Latin works of Boethius in two
 volumes, with general prolegomena, notes, and
 commentaries in Latin and a life of Boethius in French;
 because of textual corruptions and authorial
 misattributions, text should be consulted only when a later,
 edited critical edition is unavailable." Philip Edward
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 Chronology and Selected Annotated Bibliography", in: *A
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Aristotele Latinus I. 6-7. "This volume constitutes a supplement to the Latin versions of the *Categories*. It contains Porphyry's famous *Introduction* to Aristotle's *Categories* in Boethius' translation (6) [pp. 5-31] and an extract of an anonymous 12th century Latin writing, which was widespread under the title *Liber sex principiorum* (7): it deals mainly with the last six categories, treated more briefly in Aristotle's work. The volume also contains the fragments quoted by Boethius from an older Latin version of Porphyry's *Introduction*, done by Marius Victorinus."

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Texte grec et latin, traduction par Alain de Libera et Alain-Philippe Segonds.

Introduction et notes per Alain de Libera.

Table des matières: Alain de Libera: Introduction VII; L' *Isagoge*: une introduction aux *Catégories* d'Aristote XIII; Sur les sources non aristotéliennes de Porphyre XXVII; Le paradoxe de l' *Isagoge* XXXIII; Le questionnaire de Porphyre XXXVI; Le σκοπός de l' *Isagoge* et la question des πέντε φωναί XXXVIII; Sur l'interprétation médiévale du questionnaire de Porphyre LXII; La solution néoplatonicienne du problème de Porphyre: la théorie des trois états de l'universel LXXV; Les sources aristotéliennes de Porphyre et la théorie des prédicables XCII; Porphyre et le vocabulaire de la prédication CVI; L'interprétation médiévale de l' *Isagoge* CXXVII-CXLII.

Introduction de Porphyre aux *Catégories* d'Aristote.

Texte grec, *Translatio Boethii*, traduction française 1; Notes de la traduction française 31; Notes de la *Translatio Boethii* 71; Bibliographie 73; Index verborum. Grec-latin 77; Latin-grec 88; Index nominum. Anciens et médiévaux 95; Modernes 98-100.

[Contient la traduction latine de Boèce, *Porphyrii Introductio in Aristotelis Categorias a Boethio translata*, en bas de page du texte grec.]

"Soucieux d'inscrire l' *Isagoge* dans la longue durée de son interprétation médiévale, nous proposons ici un texte qui s'écarte sur plusieurs points de l'édition critique de L. Minio-Paluello et B. G. Dod. Indépendamment de plusieurs variantes de détail, nous maintenons, notamment, « *differentibus specie* » au lieu de « *differentibus speciebus* » ou « *differentibus* » (I, § 9) et « *Priami* » au lieu de « *Primum* » (II, § 1), car, même manifestement fautives, ce sont les leçons qui ont réellement circulé au Moyen Age (comme en témoignent, entre bien d'autres, les commentaires embarrassés de Guillaume d'Occam reproduits dans notre apparat critique)" P. CXLII.

3. Minio-Paluello, Lorenzo, ed. 1961. *Categoriae vel Praedicamenta. Translatio Boethii, Editio Composite, Translatio Guillelmi de Moerbeka, Lemmata e Simplicii commentario decerpta, Pseudo-Augustini Paraphrasis Themistiana*. Bruges: Desclée De Brouwer.
Aristotele Latinus I. 1-5. "This volume contains five Latin versions of Aristotle's *Categories*. Numbers 1 (pp. 5-41) and 2 (pp. 47-79) both stem from Boethius, who is responsible for the Latin translations that were most widespread. One of them is more literal, the other more elegant. William of Moerbeke, on the other hand, was the author of a Latin version not only of Aristotle's work (3), but also of Simplicius' commentary, which contains the abbreviated lemmas of the Aristotelian text (4). Moreover, Aristotle's work was known by means of a Roman paraphrase attributed to Augustin and influenced by Themistius (5)."
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 Edidit Gerardus Verbeke, revisit L. Minio-Paluello.
Aristotele Latinus II. 1-2. "This volume contains the vulgate text of the *Perihermeneias*, which goes back to Boethius (1) [pp. 5-38], and the version composed with the lemmas of

the Aristotelian text in William of Moerbeke's translation of Ammonius' commentary (2)."

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Aristotele Latinus III. 1-4. "Boethius composed a double Latin version not only of the *Categories*, but of the *Prior Analytics* [pp. 5-191] as well (1-2). However, the two versions have not been edited separately except for certain parts, the second version having been displayed, for the other parts, in the critical apparatus. Apart from these widespread texts, a good, but not quite successful anonymous 12th century translation of Aristotle's logic has come down to us (3). Special attention is paid to a set of Latin scholia to the *Prior Analytics* (4), the origin of which is disputed. According to L. Minio-Paluello and J. Shiel, they were translated by Boethius along with the Aristotelian text; according to recent research, however, they might go back to a translation by James of Venice."
Reprint with a supplement composed by James Shiel, Leiden: Brill, 1998.
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Aristotele Latinus V. 1-3. "Boethius' rendering of the *Topics* [pp. 5-185] has been carried out, once more, in two versions (1-2), one of which has not been preserved but partly. Moreover, a 12th century version is extant: it stems from the anonymous translator of the *Prior analytics* (3)."
7. Dod, Bernard G., ed. 1975. *De sophisticis elenchis. Translatio Boethii, Fragmenta Translationis Iacobi et Recensio Guillelmi de Moerbeke*. Bruges: Desclée De Brouwer.
Aristotele Latinus VI. 1-3. "The vulgate text of the *De sophisticis elenchis* [pp. 5-60] stems from Boethius (1).

Fragments of another version have been attributed to James of Venice (2), and William of Moerbeke did a revision of Boethius' translation (3)."

MODERN EDITIONS OF THE COMMENTARIES ON CICERO'S TOPICA

1. Boethius. 1833. "In Ciceronis Topica." In *M. Tulli Ciceronis Opera Omnia. Vol. V. 1*, edited by Orelli, Johann Kaspar von and Baiter, Johann Georg, 269-388. Zurich.
The text of this edition is frequently (but not always) better than Migne.
2. ———. 1990. *Boethius' De topicis differentiis und die byzantinische Rezeption dieses Werkes*. Paris: Vrin.
De topicis differentiis kaì hoi byzantinès metaphráseis ton Manouèl Holobolou kaì Prochórou Kydóne: parartéma / Anhang: Eine Pachymeres-Weiterbearbeitung der Holobolos-Übersetzung eisagogé kaì kritiké ekdosé ton keimenon hypo Demetrio u Z. Niketa.
Introduction (in German) and critical edition by Dimitrios Z. Nikitas (Corpus philosophorum medii aevi. Philosophi Byzantini, vol. 5).

MODERN EDITIONS OF OTHER WORKS

1. Thörnqvist, Christina Thomsen. 2008. *Anicii Manlii Severini Boethii De syllogismo categorico*. Gothenburg: University of Gothenburg.
Critical edition with introduction, translation, notes, and indexes by Christina Thomsen Thörnqvist.
Contents: Preface X; Editions cited XIII; Introduction. I. The author, the work, and its sources. 1. The author XV; 2.

The work and its sources XVIII; 3. The interrelation and the titles of the two monographs on the categorical syllogism XXIX; II. Boethius' monographs on the categorical syllogism in the Middle Ages XLI; III. The edition. 1. The textual tradition LIII; 2. Editorial principles LXXIII; 3. The *apparatus fontium* and notes LXXIV; *De syllogismo categorico* 1; Translation 102; Notes 158; Appendix: Selected variant readings in the younger manuscripts 177; Bibliography 194; Word index 199; Index of passages 218; General index 226.

2. ———. 2008. *Anicii Manlii Severini Boethii Introductio ad syllogismos categoricos*. Gothenburg: University of Gothenburg.
Critical edition with introduction, commentary, and indexes by Christina Thomsen Thörnqvist.
Contents: Editions cited XIII; Introduction. I. The work and its sources XV; II. The edition. 1. The extant tradition XXIII; 2. The interrelation of the manuscripts XXXIII; 3. Editorial principles XLVI; *Introductio ad syllogismos categoricos* 5; Synopsis 85;
Commentary 88; Bibliography 169; Word index 173; Index of passages 192; General index 205.
Abstract: "The Roman statesman and philosopher Anicius Manlius Seuerinus Boethius (c. 480-c. 525) translated and wrote commentaries on most of Aristotle's logical works. In addition, he wrote several treatises on logic, including two monographs on the categorical syllogism, which are commonly known as *De syllogismo categorico* and *Introductio ad syllogismos categoricos*. The present study is the first critical edition of the latter.
The main purpose of both *De syllogismo categorico* and *Introductio ad syllogismos categoricos* is to serve as introductions to Aristotelian syllogistics by providing a pedagogical transition from the theory of the proposition to the doctrine of the categorical syllogism. In the case of *Introductio ad syllogismos categoricos*, however, the final

section (supposedly the second book of the work) has either been lost or was never written. Certain characteristics of the extant tradition seem to indicate that the work is an improved redaction of *De syllogismo categorico*, but that it never underwent final revision before publication. As in the case of *De syllogismo categorico*, Boethius' ultimate sources are Aristotle's *Peri hermeneias* and *Analytica priora*, but dispositional, terminological, and doctrinological features give evidence that the influence of the Greek commentators is all-pervasive.

The reconstitution of the text rests on collation of 21 manuscripts dating from the 10th to the 15th century. An analysis of the interrelation of the manuscripts leads to the conclusion that all extant manuscripts descend from a common archetype but that the tradition is severely contaminated and cannot be described by means of a stemma codicum. Hence, a formal hierarchy is established among the text witnesses. The Latin text is presented with a critical apparatus, an *apparatus fontium*, a commentary, and indexes."

3. Boezio, A. M. Severino. 1969. *De hypotheticis syllogismis*. Brescia: Paideia.
Latin text, Italian translation, introduction and commentary by Luca Obertello (in Italian).
4. Magee, John, ed. 1998. *Anicii Manlii Severini Boethii De divisione liber* Leiden: Brill.
Critical edition, translation, prolegomena and commentary by John Magee.
5. Friedlein, Gottfried, ed. 1867. *Anicii Manlii Torquati Severini Boetii: De Institutione Arithmetica libri duo; De institutione musica libri quinque. Accedit geometria quae fertur Boetii*. Lipsiae: B.G. Teubner.
Reprint: Frankfurt, Minerva, 1966.
De institutione arithmetica pp. 3-173; *De institutione musica* pp. 175-371.
The *Geometria* is not a work by Boethius.

6. Oosthout, Henri, and Schilling, Johannes, eds. 1999. *Anicii Manlii Severini Boethii De arithmetica*. Turnhout: Brepols. Corpus Christianorum. Serie Latina 94A.
Critical edition with introduction in Latin, index of mathematical concepts, definitions, and technical terms.
7. Guilaumin, Jea-Yves, ed. 1995. *Boèce. Institution arithmétique*. Paris: Les Belles Lettres.
Texte établi et traduit par Jean-Yves Guillaumin.
8. Humphrey, Illo, ed. 2007. *Boethius. De institutione arithmetica libri duo: édition proto-philologique intégrale princeps d'un manuscrit du IXe siècle (Paris, Bibliothèque nationale de France, latin 14064)*. Ottawa: Institute of Mediaeval Music.
Texte, gloses, notes tironiennes, signes de renvoi par Illo Humphrey.
Text of *De institutione arithmetica* in Latin; preliminary essay in English; introduction and concluding essay in French.
9. Folkerts, Menso, ed. 1970. *Boethius' Geometrie II. Ein mathematisches Lehrbuch des Mittelalters*. Wiesbaden: Franz Steiner.
This work, attributed to Boethius for nearly a millennium, was compiled by an unknown author in the XI century.
10. Santosuosso, Alma, ed. 1999. *MSS Avranches, Bibliothèque Municipale, 236, 237. Boethius' De institutione musica*. Ottawa: Institute of Mediaeval Music.
"Halftone of two 10th century. mss. once in the possession of the abbey of Mont Saint-Michel. Mss 236, compiled for teaching purposes, contains the complete text of Boethius' treatise on music and excerpts from Venerable Bede's treatises on the art of poetry, the reckoning of time and a few quotations from *De natura rerum*. Ms 237 comprises Boethius' *De institutione musica*, a short unpublished text on the modes, and six diagrams of the different species."
11. Meyer, Christian, ed. 2004. *Boèce. Traité de la Musique*. Tornhout: Brepols.

Edition (from Freidlein's Latin edition of 1867) and French translation by Christian Meyer.

12. Bieler, Ludwig, ed. 1957. *Anicii Manlii Severini Boethii Philosophiae consolatio*. Turnhout: Brepols. Corpus Christianorum. Serie Latina 94. Revised edition 1984.
13. Moreschini, Claudio, ed. 2005. *De consolatione philosophiae. Opuscula theologica*. Lipsia: K. G. Saur. Bibliotheca scriptorum Graecorum et Romanorum Teubneriana. Editio altera. First edition 2000; the second edition includes the *Opuscula theologica*. Praefatio [in Latin] V-XVIII; Conspectus siglorum XIX-XXI; Consolatio philosophiae 3-162; Opuscula theologica: I. De Sancta Trinitate 165-181; II. Utrum Pater et Filius et Spiritus Sanctus de divinitate substantialiter praedicentur 182-185; III. Quomodo substantiae in eo quod sint bonae sint cum non sint substantia bona 186-194; IV. [De fide catholica] 195-205; V. Contra Eutychen et Nestorium 206-241; Indices: Index fontium 242; Index nominum 243; Index rerum 245; Index metrorum 263.

N.B.: For the *De consolatione philosophiae* I give only the main editions and translations.

ENGLISH TRANSLATIONS

1. Boethius. 1957. "The Second Edition of the Commentaries on the *Isagoge* of Porphyry, (Book I)." In *Selections From Medieval Philosophers (I): Augustine to Albert the Great*, edited by McKeon, Richard 70-99. New York: Charles Scribner's Sons. Translation of *In Isagoge*, 1.1-12.

"The selection which follows, the First Book of the second *Commentaries* on the *Isagoge*, illustrates the temper and interest, no less than the importance, of Boethius. The entire Book is commentary on not more than a page of text from Porphyry, and a good two-thirds of it is devoted to developing and enforcing in full detail a remark of his concerning the utility of the study of logic. The remaining part is devoted to a penetrating -- and startlingly cautious -- discussion of the problem of the universal. As in the case of the defense of logic, the discussion grows out of a remark by Porphyry -- his refusal to discuss in an introductory work questions concerning the possible existence of genera and species outside our mind; concerning their nature, corporeal or incorporeal; and their relations to sensible objects. To answer such problems in any detail would be to develop an entire philosophy. Particularly, it would necessitate a choice between Plato and Aristotle as Boethius conceived and stated them. Boethius, none the less, with reservations and for reasons which he carefully states, undertakes the discussion of the basic notions of the problem. The later development of scholastic philosophy is based, significantly, upon these questions. It is needless of course to say, as has frequently been said, that Boethius introduced the question to the middle ages and set the twelfth century to discussing the universal: the problem is to be found in Augustine, and it would be difficult to proceed far in philosophy without encountering it. Yet it is striking that most usually the discussion was introduced in twelfth century writings by a reference to Boethius and to his translation of the questions of Porphyry."

(...)

"It was as a logician that the middle ages chiefly esteemed Boethius, sometimes to the extreme of preferring him to Aristotle in translation. Although that preference yielded to

others, at least Boethius was for centuries the principal source of aristotelianism in the west. This contribution alone must be estimated considerable, if one remember the despair of Cicero at the rendering of philosophy in the latin language; in the time of Boethius latin had already become a supple philosophic language, and for good or ill many of the terms of later philosophical discussions in it were originated by him." (Richard McKeon, pp. 67-69)

2. ———. 1994. "From His *Second Commentary to Porphyry's Isagoge*." In *Five Texts on the Mediaeval Problem of Universals. Porphyry, Boethius, Abelard, Duns Scotus, Ockham*, edited by Spade, Paul Vincent, 20-25.

Indianapolis: Hackett.

The passage from Boethius's *Second Commentary on Porphyry* is from Book I, Chs. 10-11, of the Brandt edition (159.3-167.20).

3. ———. 1984. "Second Commentary to *De interpretatione*." In *Aristotle's Theory of Language and Its Tradition. Texts from 500 to 1750*, edited by Arens, Hans, 159-204.

Amsterdam: Benjamins.

Selection, translation and commentary by Hans Arens.

Contents of the volume: Preface 1; 1. The extraordinary fate of *Peri hermeneias* 6; 2. Aristotle's text 16; 3. Commentary to Aristotle 24; 4. Ammonius: Commentary 58; 5.

Commentary to Ammonius 124; 6. Boethius: Commentary 159; 7. Commentary to Boethius 205; 8. Abaelard: *Glosses* 231; 9. Commentary to Abaelard 303; 10. Albertus Magnus: *Paraphrase* 339; 11. Commentary to Albert 376; 12. Thomas Aquinas: *Expositio* 397; 13. Commentary to Thomas 434; 14. Martinus de Dacia: *Quaestiones* 458; 15. Commentary to Martin 471; 16. Johannes a S.Thoma: *Ars logica* 484; 17. Commentary to John of St.Thomas 507; 18. James Harris, an Aristotelian of the 18th century 514; References 523; Concordance 527; Index of Persons 530.

The text translated is: *Commentaries to Aristotle's Perihermeneias Second edition Book I* (pp. 159-204); followed by a Commentary by Hans Arens, pp. 205-230.

4. ———. 2010. *Boethius: On Aristotle On Interpretation 1-3*. London: Duckworth.

Translated by Andrew Smith.

Contents: Conventions VII; Textual Emendations VIII; Introduction 1; Translator's Note 11; Translation. Book 1 15; Book 2 57; Book 3 115; Notes 151; Select Bibliography 157; English-Latin Glossary 159; Latin-English Index 160; Index of Names 162; Subject Index 164-166.

"Boethius' second and larger commentary on Aristotle's *On Interpretation* was written in Latin in the early sixth century AD in the style of Greek commentaries on Aristotle. Both commentaries were part of his project to bring to the Latin-speaking world knowledge of Plato and Aristotle. His project was for comprehensive translation of them and for adaptation of the Greek commentaries on them. The project was cruelly interrupted by his execution at the age of about 45 between 524 and 526 AD, leaving the Latin world under-informed about Greek Philosophy for 700 years, although his commentary on Aristotle's *On Interpretation* remained the standard introduction throughout the Latin Middle Ages.

Aristotle's *On Interpretation*.

In the first six chapters of his *On Interpretation* Aristotle defines name, verb, sentence, statement, affirmation and negation. This has standardly been seen as a progression beyond the subject of his *Categories*, which distinguishes single terms. For *On Interpretation* already studies the complexity of a statement, and it can be seen as pointing forward to the treatment in his *Analytics* of syllogistic arguments, which combine three statements, two of them premisses and one a conclusion. But C.W.A. Whitaker has argued that what turns out to interest Aristotle from Chapter 7 onwards is contradictory or contrary pairs of

statements, and that these contradictory or contrary pairs relate rather to the practice of dialectical refutation discussed in Aristotle's other logical works, the *Topics* and *Sophistici Elenchi*. (1)"

In Chapters 8 to 10, Aristotle examines exceptions to the rule that in contradictory or contrary pairs one statement will be false and the other true. Chapter 11 addresses some puzzles about complex assertions, Chapters 12 to 13 consider pairs of statements involving possibility and necessity, while the last chapter, 14, discusses beliefs that are contrary." (*Introduction* by Richard Sorabji, p. 1)

(1) C.W.A. Whitaker, *aristotle's De Intepretatione, Contradiction and Dialectic*, Oxford 1996.

5. ———. 2011. *Boethius: On Aristotle On Interpretation 4-6*. London: Bristol Classical Press.
Translated by Andrew Smith.
Contents: Conventions VII; Textual Emendations VIII; Introduction 1; Translator's Note 11; Translation. Book 4 15; Book 5 60; Book 6 100; Notes 141; Select Bibliography 145; English-Latin Glossary 147; Latin-English Index 148; Index of Names 150; Subject Index 151.
6. ———. 1998. *On Determinism. Ammonius On Aristotle On Interpretation 9 with Boethius On Aristotle On Interpretation 9 First and Second Commentaries*. London: Duckworth.
Ammonius translated by David Blank; Boethius translated by Norman Kretzmann.
With essays by Richard Sorabji, Norman Kretzmann and Mario Mignucci.
Contents: Richard Sorabji: Preface VII; Acknowledgements VIII; I. Introduction. 1. Richard Sorabji: The three deterministic argumenta opposed by Ammonius 3; 2. Richard Sorabji: Boethius, Ammonius and their different Greek backgrounds 16; 3. Norman Kretzmann: Boethius and the truth about tomorrow's sea battle 24; 4. Mario Mignucci: Ammonius' sea battle 53; II. Translations.

Textual Emendations 89; Ammonius *On Aristotle On Interpretation* 9 translated by David Blank 91; Notes 118; Boethius *On Aristotle On Interpretation* 9 (*first commentary*) 129; Boethius *On Aristotle On Interpretation* 9 (*second commentary*) translated by Norman Kretzmann 146; Notes 187; Bibliography 193; English-Greek Glossary 197; Greek~English Index 200; English-Latin Glossary 207; Latin-English Index 210; Subject Index 213-216.

"This is a volume on determinism. It contains the two most important commentaries on the determinist's sea battle argument, and on other deterministic arguments besides. It includes the earliest full exposition of the Reaper argument for determinism, and a discussion of whether there can be changeless knowledge of the passage of time. It contains the two fullest expositions of the idea that it is not truth, but only definite truth, that would imply determinism.

Ammonius and Boethius both wrote commentaries on Aristotle's *On Interpretation* and on its ninth chapter where Aristotle discusses the sea battle. Their comments are crucial, for Ammonius' commentary influenced the Islamic Middle Ages, while that of Boethius was of equal importance to medieval Latin-speaking philosophers.

It was once argued that Boethius was influenced by Ammonius, but these translations are published together in this volume to enable the reader to see clearly that this was not the case. Ammonius draws on the fourth- and fifth-century Neoplatonists Iamblichus, Syrianus and Proclus. He arranges his argument around three major deterministic arguments and is our main source for one of them, the Reaper argument, which has hitherto received insufficient attention. Boethius, on the other hand, draws on controversies from 300 years earlier between Stoics and Aristotelians as recorded by Alexander of Aphrodisias and Porphyry.

Ammonius' commentary on the first eight chapters of Aristotle's *On Interpretation* has appeared in a previously

published volume in this series, translated by David Blank." (*Preface* by Richard Sorabji)

7. Thörnqvist, Christina Thomsen. 2008. *Anicii Manlii Severini Boethii De syllogismo categorico*. Gothenburg: University of Gothenburg.
Critical edition with introduction, translation, notes, and indexes by Christina Thomsen Thörnqvist.
Contents: Preface X; Editions cited XIII; Introduction. I. The author, the work, and its sources. 1. The author XV; 2. The work and its sources XVIII; 3. The interrelation and the titles of the two monographs on the categorical syllogism XXIX; II. Boethius' monographs on the categorical syllogism in the Middle Ages XLI; III. The edition. 1. The textual tradition LIII; 2. Editorial principles LXXIII; 3. The apparatus fontium and notes LXXIV; *De syllogismo categorico* 1; Translation 102; Notes 158; Appendix: Selected variant readings in the younger manuscripts 177; Bibliography 194; Word index 199; Index of passages 218; General index 226.
Abstract. "The Roman statesman and philosopher Anicius Manlius Seuerinus Boethius (c. 480-c. 525) translated and wrote commentaries on most of Aristotle's logical works. In addition, he wrote several treatises on logic, including two monographs on the categorical syllogism, which are commonly known as *De syllogismo categorico* and *Introductio ad syllogismos categoricos*. The present study is the first critical edition of the former.
De syllogismo categorico divides into two books of which the first is an account of the categorical proposition and the second deals with the categorical syllogism. The ultimate sources are Aristotle's *Peri hermeneias* and *Analytica priora*, but certain dispositional, terminological, and doctrinological features show that the text is heavily influenced by the tradition of the Greek commentators. From the rediscovery of Boethius' logical writings in the 10th century until the mid-12th century, Aristotle's doctrine

of the categorical syllogism was known chiefly through Boethius' *De syllogismo categorico*. The influence by as well as on the work is discussed in the introduction to the present study.

The reconstitution of the text rests on collation of 47 manuscripts dating from the 10th to the 15th century. An analysis of the interrelation of the manuscripts leads to the conclusion that all extant manuscripts descend from a common archetype but that the tradition is severely contaminated and cannot be described by means of a *stemma codicum*. The text is primarily based on the sixteen earliest text witnesses, among which a formal hierarchy is established. The Latin text is presented with a critical apparatus, an apparatus fontium, an English translation, notes, and indexes. Selected variant readings in the later manuscripts are reported in an appendix."

8. Boethius. 1988. *In Ciceronis Topica*. Ithaca: Cornell University Press.

Translated, with notes and an introduction by Eleonore Stump.

Contents: Acknowledgments IX; Abbreviations XI; Introduction 1; *In Ciceronis Topica*: Book I 21; Introduction: The Purpose of Topics 22; The Nature of Logic 25; The Nature of Topics 29; The Division of Topics 36; Book II 49; Introduction: The Nature of Related Things 50; The Topic from related things 55; An Extrinsic Topic 72; Book III 75; Introduction: The Relationship of Topics to the Thing at Issue 75; Definition 84; Book IV 105; Partition 106; Designation 108; Related Things 110; Book V 132; Introduction: The Nature and Sorts of Conditional Propositions 133; The Seven Stoic Modes of Hypothetical Syllogism 135; Causes 154; Book VI 167; Introduction: Review of The Nature of Topics 168; Causes 169; Effects and Comparison 171; The Division of Topics 176; The Extrinsic Topic 179; Notes to the Translation. Book I 185; Book II 194; Book III 205; Book IV 214; Book V 224; Book VI 240;

Appendix: Categories and Predicables 244; Selected Bibliography 256; Indexes 265-277.

"Boethius's *In Ciceronis Topica* is one of two treatises Boethius wrote on the subject of the Topics or *loci*. The other treatise is *De top. diff.*, (11) one of the last philosophical works he composed.(12) Together these two treatises present Boethius's theory of the art of discovering arguments, a theory that was enormously influential in the history of medieval logic. (13) *De top. diff.* is a fairly short treatise, but it is Boethius's advanced book on the subject; it is written in a concise, even crabbed style, and it clearly presupposes acquaintance with the subject matter. In contrast, ICT is Boethius's elementary treatise on the Topics. It was written shortly before *De top. diff.* (14) and is a commentary on Cicero's *Topica*, though it is a much larger and more comprehensive work than the *Topica*; it is more than twice as long as the more tightly knit *De top. diff.*" (p. 4)
(...)

According to Boethius, who is dependent on both the Greek and Latin traditions, (22) two different sorts of things are Topics: a Topic is both a maximal proposition and the Differentia (23) of a maximal proposition. On Boethius's view, a maximal proposition is a self-evidently true, universal generalization, such as 'Things whose definitions are different are themselves also different.' Boethian Topics of this sort probably have as their ancestors the Aristotelian Topics that are principles. Their official function, on Boethius's account, is to aid in the discovery of arguments, but in practice Boethius tends to use them to confirm arguments. (24) Differentiae are theoretically the differentiae dividing the genus *maximal proposition* into its subaltern genera and species, and in that capacity they serve to classify maximal propositions into groups. Some maximal propositions have to do with definition, for example, and other with genus; so from definition and from genus are

Differentiae. Much more important, however, is the role Differentiae play in Boethius's method for the discovery of dialectical arguments. For the most part, Boethius thinks of dialectical arguments as having categorical rather than conditional conclusions, and he conceives of the discovery of an argument as the discovery of a middle term capable of linking the two terms of the desired conclusion. Boethian Differentiae are, for the most part, the genera of such middle terms. (In those cases where the arguments are hypothetical rather than categorical, Boethius generally but not invariably thinks of Topics as validating the conditional proposition in the argument.) To find an argument using Boethius's method, one first chooses an appropriate Differentia (criteria for appropriateness are left to the arguer's intuition). The genus of middle terms, determined by the Differentia chosen, and the two terms of the desired conclusion then indicate the specific middle term of the argument and so indicate a dialectical argument supporting the conclusion." (pp. 4-6)

(11) An edition of this text can be found in J.-P. Migne, *patrologia Latina (PL)*, vol. LXIV (Turnhout: Brepols: n.d.), 1174-1216. For a translation and notes, see Stump 1978.

(12) de Rijk, "On the Chronology of Boethius' Works on Logic. Part II", *Vivarium*, 2, 1964: 159-160.

(13) See Stump 1978, and idem, "Topics: Their Development and Absorption into Consequences," in Norman Kretmann et al. eds., *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press, 1982), pp. 273-299. See also Niels J. Green-Pedersen, *The Tradition of the Topics in the Middle Ages* (Munich: Philosophia Verlag, 1984).

(14) de Rijk 1964: 159-161.

(22) For a summary of the controversy over Boethius's sources, see Stump "Boethius Works on the Topics", *Boethius Works on the Topics* *Vivarium*, 12, 1974, 77-93.

(23) I am capitalizing 'Differentia' here to distinguish this technical use of the word from its more ordinary use designating one of the predicables.

(24) For a detailed analysis of Boethius's use and understanding of Topics, see Stump 1978, especially pp. 179-204.

[For a modern edition of Cicero's *Topica*, see: *Cicero's Topica*, Edited with an Introduction, Translation, and Commentary by Tobias Reinhardt, New York: Oxford University Press, 2006.]

9. ———. 1978. *De topicis differentiis*. Ithaca: Cornell University Press.

Translated, with notes and essays on the text, by Eleonore Stump.

Contents: Abbreviations 11; Introduction 13; Part One. *De topicis differentiis*. Book I 29; Book II 43; Book III 63; Book IV 79; Notes to the Translation. Book I 97; Book II 110; Book III 128; Book IV 141; Part Two. Dialectic in Ancient and Medieval Logic. Dialectic and Aristotle's Topics 159; Dialectic and Boethius's *De topicis differentiis* 179; Between Aristotle and Boethius 205; Peter of Spain on the Topics 215; Differentia and the Porphyrian Tree 237; Differentia 248; Bibliography 263; Indexes 275-287.

"This book is a philosophical study of Boethius's treatise *De topicis differentiis*. It includes the first English translation of this historically and philosophically important text, as well as copious notes designed to make the text accessible to philosophers and scholars interested in the medieval period. Detailed philosophical analyses of the text and of important technical concepts, such as the concept of the predicables, are worked out in the chapters of Part II. Chapters on Aristotle's *Topics* and the treatise on dialectic in Peter of Spain's *Tractatus* explain the work of these philosophers on the Topics and explore the relationship of their views to those of Boethius. My principal aim is to make Boethius's treatise available and comprehensible to scholars for whom

the technical Latin vocabulary and unfamiliar subject matter have made it inaccessible." (*Preface*, p. 7)

(...)

"Boethius's *De topicis differentiis* is concerned with the discovery of arguments. As there is a method for judging or evaluating arguments (what we call 'logic'), so, Boethius thinks, there is also a method for finding arguments. The method varies somewhat, depending on whether the arguments sought will be used in rhetoric for legal or political speeches or in dialectic for philosophical inquiry. Most of Boethius's attention is given to the method as used in dialectic, but the fourth and last Book of the treatise examines the method as used in rhetoric and compares it with that used in dialectic.

Whether the method for finding arguments is rhetorical or dialectical, its main instrument is something called a Topic (in Latin, 'locus'). 'Topic' is the standard English translation for the Greek 'τόπος' (the Aristotelian counterpart of 'locus'), which means, literally, a place or area. A certain sort of Topic that plays a role in the ancient methods for memorization antedates and is probably the source for the kind of Topic used in discovering arguments. In the art of memorizing, a Topic is a place, in the literal sense, which the memorizer pictures in his mind and from which he recalls what he wants to remember. He familiarizes himself with some large edifice in which a number of places are picked out as the τόποι to aid memory, and these places are fixed in the memory in their actual order of occurrence in the edifice. Then the speech, or whatever is being memorized, is divided into parts, and a vivid image is associated with each of the parts. The memorizer pictures these images put into the places of the edifice in their appropriate order. When he is delivering his speech, he imagines himself walking through the edifice, going from place to place, and finding in each place the image he put there. Each image reminds him of a certain part of his

speech; and in this way he uses the τόποι to recall the entire speech, part by part, in order. (7)" pp. 15-16)

(...)

" *De top. diff.* is Boethius's definitive work on the Topics. In it he considers two different sets of dialectical Topics, one of which he finds in Cicero's *Topica* and the other of which stems from the Greek commentator Themistius (ca. 320-390); and he attempts to reconcile the two sets of dialectical Topics. He also discusses rhetorical Topics, and he concludes the treatise by comparing rhetorical and dialectical Topics to make their similarities and differences clear. Because it is an advanced work with a broad scope of material, *De top. diff.* does not devote much attention to the way in which a Topic functions to find an argument. One is likelier to find such discussion in the more elementary *In Ciceronis Topica*. Instead, in *De top. diff.* Boethius contents himself with describing the various Topics and giving examples using each, with a minimum of explanation about the basic method. In the chapter on Boethius, I have explained what I think his technique for finding arguments is and how it works." (p. 17)

(7) Cf. Frances Yates, *The Art of Memory* (London, 1966); Frances Yates, "The Ciceronian Art of Memory," *Medioevo e rinascimento* (Florence, 1955), II, 871-903; Harry Caplan, tr., *Rhetorica ad Herennium* (Cambridge, Mass., 1954); and Richard Sorabji, *Aristotle on Memory* (London, 1972).

10. ———. 1988. "On Division." In *Logic and Philosophy of Language*, edited by Kretzmann, Norman and Stump, Eleonore, 11-38. Cambridge: Cambridge University Press. The Cambridge Translations of Medieval Philosophical Texts. Vol 1.

"De divisione was probably written sometime between 505 and 509. It is a study of different sorts of division - e.g., the division of a genus into its species or the division of a whole into its integral parts - an important part of the logical heritage on which the scholastic period built. Boethius

investigates the way in which these various divisions are distinguished from one another and the logical relations between whatever is being divided (or analyzed, or classified) and its dividing elements. For example, he points out that a genus is naturally prior to its species but a whole is naturally posterior to its integral parts; if a genus is destroyed, so are all its species, but if a whole is destroyed, some of its integral parts may remain. A large part of the treatise is devoted to the division of genus into species, in connection with which Boethius deals extensively with the predicables (genus, species, definition, differentia, proprium, and accident), their interrelationships, and the way they combine to form a Porphyrian tree." (pp. 11-12)

11. ———. 1998. *De Divisione Liber*. Leiden: Brill.

Critical edition, translation, prolegomena and commentary by John Magee.

Contents: Acknowledgements IX; Abbreviations XI; Boethian Editions Cited XIII; Prolegomena XV; Date of *De divisione* XVII; Boethius, Porphyry, and Andronicus XXXIV; Textual Tradition of *De divisione* LVIII; *De divisione* 1; Commentary 53; Appendix: Elenchus Lectionum Singularium Selectarum 171; Bibliography 177; Word Index 187; Index of Passages 200; General Index 222-224.

Date of composition: "All things considered, the period between 515 and 520 seems a safe surmise." (p. XXXIII)
 "Like all of Boethius' writings, *De divisione* looks both back to Antiquity and ahead to the Middle Ages. (1) It was copied with great frequency for use in the medieval schools, the MSS in which it is preserved being outnumbered only, among Boethius' works, by those of *De differentiis topicis* and the *Consolatio*. And in addition to the commentaries of Peter Abelard, Albert the Great, and Antonius Andreae, there is a wealth of glossed MSS, florilegia, and indirect evidence to suggest that *De divisione* proved of enduring interest to medieval students from the later tenth century

on. This would have pleased Boethius, who in the proem evinces particular concern for the utilitas of the treatise in the context of the Latin-speaking world. As for Antiquity, there is an important lost tradition underlying *De diuisione*. More precisely, in the proem and conclusion Boethius mentions two works which are otherwise completely unattested: a “book” on diaeresis by Andronicus of Rhodes (1st c. BC) (2) and a “commentary” on Plato’s *Sophist* by Porphyry (b. AD 232/3). (3) The lost ancient tradition is the concern of the present discussion, and I begin with the relevant passages. In the proem and conclusion Boethius indicates:

(1) that Andronicus published a book on diaeresis, in which he (Andronicus) remarked (a) that diaeresis is a method of great utility and (b) that the Peripatos (before Andronicus) had always held the method in high esteem: *Quam magnos studiosis afferat fructus scientia diuidendi quamque apud Peripateticam disciplinam semper haec fient in honore notitia, docet et Andronici diligentissimi senis De diuisione liber editus* (4,3ff.);

(2) that Plotinus approved of or recommended Andronicus’ book: *et hic idem a Plotino grauissimo philosopho comprobatus* (4,5f.);

(3) that Porphyry (consequently) adapted Andronicus’ book for his commentary on Plato’s *Sophist*: *et in Platonis librì qui Sophistes inscribitur commentariis a Porphyrio repetitus* (4,6f.);

(4) that the *later Peripatos* (a) distinguished between diaeresis in the essential and incidental senses and (b) made subdivisions of each: *Posterior quidem Peripateticae secta prudentiae differentias diuisionum diligentissima ratione perspexit et per se diuisionem ab ea quae est secundum accidens ipsasque inter se disiunxit atque distribui* (48,26ff.);

(5) that, by contrast, the *earlier Peripatetics* indiscriminately employed accidents in place of genera,

species, and differentiae: *antiquiores autem indifferenter et accidente pro genere et accidentibus pro speciebus aut differentiis utebantur* (50,1 f.); and

(6) that the promiscuous “earlier” usage drove Boethius to explain how the various kinds of division are (a) similar to and (b) different from one another: *unde nobis peropportuna utilitas uisa est et commumones harum diuisionum prodere et eas propriis differentiis disgregare* (50,2ff.).” (pp. XXXIV-XXXV)

(1) The following is based on my “Boethius ... and Andronicus;” points of detail are treated in the commentary.

(2) The complicated issues of Andronicus’ precise dates and scholarship I pass over here. One may consult, among others, Moraux, *Aristotelismus I* 45fF., with Tarân’s review, esp. 73 If., and Gottschalk, “Commentators” 55ff.

(3) A. Smith, (ed.) *Porphyry Philosophi Fragmenta* xf., and “Studies” 750, treats the “bulk” of *Dio.* as a Porphyrian fragment (169F). Although preferable to treating it as an Andronicean one, this entails complications of its own.

Ancient Commentaries on Boethius’ *De divisione*:

- Pietro Abelardo, *Scritti filosofici: Editio super Porphyrium - Glossae in Categorias - Super Aristotelem De Interpretatione - De diuisionibus - Super Topica glossae*. Edited by Mario Dal Pra. Rome-Milan 1954, pp. 155-203.

- B. Alberti Magni *Ord. Praed. commentarii in librum Boethii De divisione*: Editio princeps. Edited by Fr. P.M. von Loë, O.P. Bonn 1913.

- Robert Kilwardby’s *Writings on the Logica Vetus Studied with Regard to Their Teaching and Method*. Edited by P.O. Lewry, O.P. (unpublished Dissertation), Oxford 1978, pp. 408-12.

- Antonij Andree *super artem veterem. Scripts: seu Expositiones Antonij Andree super artem veterem: et super Boetium de diuisionibus: cum questionibus eiusdem*. Venice 1517. Fols. 89vb-103b.

12. ———. 1983. *Boethian Number Theory*. Amsterdam: Rodopi.

Translation, with introduction and notes, of the *De institutione arithmetica* by Michael Masi.

Contents: Preface 9; Boethian Number Theory 11; The Iconography of the Liberal Arts and the Boethian Arithmetic 13; Boethian Number Theory and Music 23; Arithmetic Proportion and the Medieval Cathedral 31; Medieval Literature and the Theory of Number 39; *De Institutione Arithmetica*: Commentaries and Derivative Works 49; Manuscripts Containing the *De Institutione Arithmetica* 58; A View of Boethius' Life and Works 64; Boethius, to Symmachus, his Lord, the Patrician 66; Boethius, *De Institutione Arithmetica* 71; Bibliography 189-197.

"The consistency, even into the Renaissance, of the Liberal Arts curriculum, (1) its essentially mathematical nature, its influence beyond the *quadrivium* on music theory and practice, and its bearing on the nature of aesthetics (2) are all relevant to the basic concepts outlined in Boethius' *De Institutione Arithmetica*. Not only does the name of Boethius appear repeatedly in discussions of proportions and harmony, but numerous manuscripts and publications of his works and commentaries on the *De Institutione Arithmetica* continued with undiminished, even increased, vigor into the sixteenth century.

Before I present an outline of this scope of influence, the distinction between practical and theoretical mathematics should be clarified in order to help avoid a common misunderstanding. The modern meaning of *arithmetic* conveys nothing of what it meant for Boethius. The difference between arithmetic (Αριθμητική) and logistics (Λογιστική) was the same for Boethius as it was for the Greeks who originally defined it. (3) Both disciplines deal with numbers, but arithmetic designates the theory or philosophy of number, only after the Middle Ages did the term designate an elementary discipline of counting and

calculation. The process whereby one undertook the solution of practical problems of computation was known to the Greeks and to Boethius as logistics and to the Middle Ages as algorism. (4)

The nature and scope of number theory is adequately explained in the first chapter of the *De Institutione Arithmetica* -- it is essentially a preparatory study for philosophy. As such, among the Neo-Pythagoreans, it had a fundamentally moral character and bespoke the order of the world in its most basic terms. The expression of this order was eventually, in the other disciplines of the *quadrivium*, expanded into musical terminology where it acquired the dimension of harmony; in the study of geometry, it was extended to plane surfaces and solid figures. In astronomy, the geometric measurements and the metaphor of harmony found their widest applications in the definition of the order of the universe and in the supreme model of concord, the music of the spheres.

To demonstrate within the limits of this introduction the pervasiveness of Boethius' treatise on the study of number theory, its importance as a preparatory study for music, and the bearing of number theory on architecture, literature, and moral philosophy, I have organized my discussion under five headings. With each I have provided adequate bibliography so that those interested in particular applications of this number theory may pursue and test the application of principles in the *De Institutione Arithmetica* to other disciplines. The five headings are: (I) The Iconography of the Liberal Arts; (II) the *De Institutione Arithmetica* and the *De Institutione Musica* in the theoretical writings of later musicologists; (III) Arithmetic proportion and architecture; (IV) Literary extensions of the Theory of Number; (V) Commentaries, derivative studies, and extant manuscripts." (pp. 11-12)

(1) *Trivium*: grammar, rhetoric, logic; *Quadrivium*: arithmetic, music, geometry, astronomy.

(2) See various chapters in E. de Bruyne *Études d'esthétique médiévale* (Bruges, De Tempel, 1946).

(3) See Sir Thomas Heath, *A History of Greek Mathematics* (Oxford, Clarendon Press, 1921), Vol. I, pp. 13-16.

(4) See Nicomachus of Gerasa, *Introduction to Arithmetic*, trans. Martin Luther D'ooze, intro. Frank E. Robbins and L.C. Karpinski (New York), Macmillan, 1926, pp. 3-4; Plato, *Gorgias* Sec. 451C; *Theatetus*, Sec. 145A, 198A. For the Middle Ages, see A.C. Crombie, *Medieval and Early Modern Science* (New York, Anchor Books, 1959), Vol. I, pp. 50-51.

13. Palisca, Claude, ed. 1989. *Boethius. Fundamentals of Music*. New Haven: Yale University Press.

Translated, with introduction and notes by Calvin M. Bower.

Contents: Preface by Series Editor Claude V. Palisca XIII; Translator's Preface XVII; Introductio XIX-XLIV; Book 1 1; Book 2 52; Book 3 88; Book 4 115; Book 5 162; Appendix 1: Chapters 20-30 of Book 5 181; Appendix 2: Notes on the Text of the Spartan Decree 185; Appendix 3: Notes on the Diagrams and their Sources 189; Index 197-205.

"Shortly after the turn of the sixth century a young Roman patrician began to record in Latin the sources and background of his exceptional Greek education. Although it is uncertain that he ever studied in Athens or Alexandria, those fifth-century centers of liberal learning and philosophy fundamentally shaped his thinking, even to the extent of determining his literary and pedagogical objectives. He would lay a scientific foundation by writing on four mathematical disciplines—the quadrivium as he collectively called them. Thereafter he would translate and comment on the *Organon* of Aristotle and, building on the mathematical disciplines and Aristotelian logic, would finally approach the philosophical writings of Plato and Aristotle and the world of metaphysics. (1)

In this context, Anicius Manlius Severinus Boethius (480-524) wrote the treatise entitled *De institutione musica*, one

of his earliest works, probably around the middle of the first decade of the sixth century. It was intended to be read along with the *De institutione arithmetica* and may have been one of four works setting out the foundations of Platonic scientific education: arithmetic, music, geometry, and astronomy. None of the mathematical works—or even the logical works—was considered original by Boethius or his contemporaries. Boethius's early works record in Latin what he was reading in Greek. Reading, translating, writing, and commenting formed an integrated process through which Boethius appropriated for his culture works that not only were unknown but that in most cases surpassed the superficial dabblings in science and logic from the golden and silver ages of Roman civilization. Scholars such as Marius Victorinus and Apuleius of Madaura had produced scientific translations for Latin readers of the fourth and fifth centuries, but Boethius carried the genre to new levels of rigor and thoroughness. Written for a cultural elite already initiated into philosophical literature, Boethius's mathematical and logical works represent one of the most notable projects in intellectual history of preserving and transmitting a corpus of knowledge from one culture to another. (2)

No evidence has been found that Boethius's mathematical works were read between his short lifetime and the ninth century. But when liberal learning saw a rebirth in the Carolingian era, Boethius's treatises on arithmetic and music reappeared as authoritative works on these disciplines, rivaled only by Martianus Capella's *De nuptiis Philologiae et Mercurii*. (3) When a tradition of independent musical treatises began in the ninth century, Boethius's treatise became the unique source for the thorough mathematical underpinning of Western musical theory. It is ironic that this work intended as an approach to logic and philosophy would essentially shape the most illiberal of the liberal arts. (4)" (pp. XIX-XX)

(...)

"An overview of the structure of the five extant books should assist the reader in placing the musical details of the treatise in perspective. Book 1 forms a self-contained introduction to the discipline, whereas books 2 and 3 present mathematical demonstrations of propositions introduced in book 1. Book 4 applies the mathematical principles developed in books 2 and 3 to the monochord and presents the theory of modes. Finally, book 5 introduces the reader to the mathematical and musical subtleties of Ptolemy." (p. XXIX)

(1) For a thorough study of Boethius's life, see Henry Chadwick, *Boethius: The Consolations of Music, Logic, Theology, and Philosophy* (Oxford, 1981), pp. 1-68. Also informative is John Matthews, "Anicius Manlius Severinus Boethius," in *Boethius: His Life, Thought and Influence*, ed. Margaret Gibson (Oxford, 1981), pp. 15-43.

(2) Concerning the complex question of Boethius's literary precursors and his audience, see Helen Kirkby, "The Scholar and his Public," in *Boethius: His Life, Thought and Influence*, pp. 44-69.

(3) See *Martianus Capella*, ed. Adolf Dick, with addenda by Jean Préaux (Stuttgart, 1969); also *Martianus Capella and the Seven Liberal Arts*, vol. 1, William Harris Stahl, *The Quadrivium of Martianus Capella, Latin Translations in the Mathematical Sciences, 50 B.C.-A.D. 1250*, and Richard Johnson with E. L. Burge, *A Study of the Allegory and the Verbal Disciplines* (New York and London, 1971); vol. 2, *The Marriage of Philology and Mercury*, trans. W. H. Stahl and R. Johnson with E. L. Burge (New York, 1977).

(4) For the tradition of Boethius's treatise in the early Middle Ages, see Calvin M. Bower, "The Role of Boethius' *De institutione musica* in the Speculative Tradition of Western Musical Thought," in *Boethius and the Liberal Arts: A Collection of Essays*, ed. Michael Masi, *Utah Studies in Literature and Linguistics* 18 (Bern, Frankfurt, and Las Vegas, 1981), pp. 157-74; and Alison White, "Boethius in the

Medieval Quadrivium,” in *Boethius: His Life, Thought and Influence*, pp. 162-205.

14. Boethius. 1973. *The Theological Tractates and the Consolation of Philosophy: Text and Translations*. London: Heinemann.

The Loeb Classical Library; new edition; Latin text and English translation.

The Theological Tractates translated by H. F. Stewart, E. K. Rand and S. J. Tester; *The Consolation of Philosophy* translated by S. J. Tester.

Contents: Note on the Text VII; Introduction IX; Bibliography XV; *The Theological Tractates* 2; *The Consolation of Philosophy* 128; *Symmachi versus* 412; Index 415-420.

"A seventeenth-century translation of the *Consolatio philosophiae* is here presented with such alterations as are demanded by a better text, and the requirements of modern scholarship. There was, indeed, not much to do, for the rendering is most exact. This in a translation of that date is not a little remarkable. We look for fine English and poetry in an Elizabethan; but we do not often get from him such loyalty to the original as is here displayed.

Of the author "I. T." nothing is known. He may have been John Thorie, a Fleming born in London in 1568, and a B.A. of Christ Church, 1586. Thorie "was a person well skilled in certain tongues, and a noted poet of his times" (Wood, *Athenae Oxon.* ed. Bliss, I. 624), but his known translations are apparently all from the Spanish. (a)

Our translator dedicates his "Five books of Philosophical Comfort" to the Dowager Countess of Dorset, widow of Thomas Sackville, who was part author of *A Mirror for Magistrates and Gorboduc*, and who, we learn from I. T.'s preface, meditated a similar work. I. T. does not unduly flatter his patroness, and he tells her plainly that she will not understand the philosophy of the book, though the theological and practical parts may be within her scope.

The *Opuscula Sacra* have never before, to our knowledge, been translated. In reading and rendering them we have been greatly helped by two mediaeval commentaries: one by John the Scot (edited by E. K. Rand in Traube's *Quellen und Untersuchungen*, vol. I. pt. 2, Munich, 1906); the other by Gilbert de la Porrée (printed in Migne, *P.L.* LXIV.)."

(a) Mr. G. Bayley Poison suggests with greater probability that I. T. was John Thorpe (fl. 1570-1610), architect to Thomas Sackville, Karl of Dorset. Cf. *American Journal of Philology*, vol. XIII. (1921), p. 266.

15. ———. 1991. "De hebdomadibus." In *Being and Goodness. The Concept of the Good in Metaphysics and Philosophical Theology*, edited by MacDonald, Scott, 299-304. Ithaca: Cornell University Press.

Translation by Scott MacDonald.

"The Latin texts are Boethius 1978a and Peiper 1871. The line numbers from Rand's text are given in angle brackets in the text of the translation. In preparing this translation, I have consulted the translations of Stewart, Rand, and Tester in Boethius 1978a, Boethius 1981, and de Rijk's suggestions for translating the axioms in de Rijk 1987." (p. 299)

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Cambridge, Mass.: Harvard University Press.

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Boethius 1871. *Anicii Manlii Severini Boetii Philosophiae Consolationis Atque Opuscula Sacra*. Ed. Rudolph Peiper. Leipzig: Teubner.

Rijk, L. M. de. 1987. "On Boethius' Notion of Being: A Chapter in Boethian Semantics." In *Meaning and Inference*

in Medieval Philosophy: Studies in Memory of Jan Pinborg, ed. Norman Kretzmann. Dordrecht: Kluwer.

16. ———. 1999. *The Consolation of Philosophy*. Oxford: Clarendon Press.

Translated with introduction and explanatory notes by Patrick Gerard Walsh.

"This is an appropriate time to launch a new translation of *The Consolation of Philosophy*. In the past few years there has been a significant revival of interest in Boethius; this has been marked by several studies which have partially restored him to the prominence which he enjoyed for over a millennium from the Carolingian age onwards. My rendering, with its accompanying Introduction and annotation, has sought to exploit these important researches.

The translation is based on Ludwig Bieler's admirable edition in the *Corpus Christianorum* series. The annotations have benefited conspicuously from the notable commentary of J. Gruber. Henry Chadwick's general study of Boethius, and the volume of essays edited by the late-lamented Margaret Gibson entitled *Boethius, his Life, Thought, and Influence*, have furnished much of the information on which the Introduction is based. My debts to Gerard O'Daly's *The Poetry of Boethius* for interpretation of the verses, and to R. W. Sharpies' edition of the taxing philosophical content of Books 4-5, will be obvious from the frequent citations in the notes. Details of these works are presented in the Select Bibliography." (from the *Preface*)

"Summary of the Treatise.

Book 1. As the prisoner grieves over his downfall and impending fate, Lady Philosophy appears before him. Initially he fails to recognize her, but once recognition dawns he pours out to her his resentment at the iniquity of Fortune. His devoted public service has ended in his condemnation; the order evident in the world of nature does not extend to the just treatment of humankind. Philosophy

diagnoses his ailment; blinded by vicious emotions, he has forgotten how the world is ordered. She promises initially a gentler cure.

Book 2. Lady Philosophy denounces the prisoner's bitter indictment of Fortune, against whom he has no real complaint. Fortune herself is invoked to justify her ways with men. Hitherto she has favoured him, and the inconstancy she now shows is at one with the similar pattern in nature. Philosophy insists that his present life has its material consolations, but true happiness is not to be sought in them. She reviews the worldly goods to which men aspire, and successively rejects wealth, ambition for high position, and the pursuit of fame as avenues to happiness. Fortune benefits man more when adverse than when favourable.

Book 3. Before explaining where true happiness is to be found, Lady Philosophy reiterates that the quests for riches, high position, and fame, and additionally physical pleasure, are defective ways of seeking the true good. The true avenue is reversion to our beginnings. The prisoner's former wealth, the tenure of public office, the kingship under which he has served, the desire for fame, the pursuit of bodily pleasure, the reliance on physical strength and beauty are all false goods which fail to attain sensation, imagination, reason, and understanding; these correspond with the four levels of existence, namely immobile life, that of the lower animals, the human, and the divine. The reconciliation between Providence and free will is achieved at the fourth level of divine understanding. God's knowledge is always in the present, not in the future or past. Though from the divine aspect all future events will be necessary, in their own nature some will be necessary but others freely chosen. In this sense the freedom of the will remains intact."

17. ———. 2001. *The Consolation of Philosophy*. Indianapolis: Hackett.

Translated, with introduction and notes, by Joel C. Relihan.

"Principles of translation.

Latin poetry does not rhyme; its rhythms, far more complex than those of English, are not related to the accents of the words themselves but to the succession of long and short syllables; that is to say, they depend upon the length of time that it takes to pronounce each syllable. The music of Latin poetry is accordingly quite polyphonic; sometimes word accent agrees with verse accent, and sometimes conflicts with it. Within this rhythmic environment is found a highly artificial poetic language: The great Latin poets (Vergil, Horace, Ovid) did not just write memorable works in verse but, for each writer who came after them, offered new solutions to the old problem of how to fit the Latin language into the shapes of Greek verse. Consequently, every Latin poem is a mosaic of phrases learned from earlier poems; the reading of any Latin poem is a complicated intertextual game, as even a lone word in a given place in a line of a certain rhythm may evoke associations with an earlier poem that then becomes part of the context in which the new poem is meant to be read.

There are thirty-nine poems in *Consolation*, written in a wide range of meters and combinations of meters. The poetic nature of the text cannot be ignored; only *Satyricon* and Martianus Capella's *Marriage* come close to the richness of its mixture of prose and verse. No English translation of a Latin poem can hope to mirror the music of these Latin originals, or the complexities of their associations with the whole of Latin literature. That is for specialists; students curious to see Boethius the poet in his workshop, adapting the themes and language of his originals, may be referred to the study of O'Daly, [*Poetry of Boethius*, Chapel Hill and London, The University of North Carolian Press] 1991. What I have done here, and what has not been done before in the long history of translation of *Consolation* into English, is reproduce through English accents the rhythms and meters of the original poems. I

have thought it important to do so in order to make the reader stop and take the poems seriously; there is a tendency to take the poems as mere metrical restatements of the arguments of the preceding prose sections. I would claim that in fact the poems often shift the focus of arguments, or redirect them in surprising ways; the reader needs to linger on them. The rhythms of the Latin will for the most part not be familiar; I have included accent marks to show where the stresses should fall, and have added in the notes to each poem a brief discussion of the meter and its associations. The reader needs to know only that the stress marks are intended to have their Latin force: That is, they show where the syllables should be dragged out a bit, pronounced more slowly, given more time. (1) It is possible for other English accents to be heard against this background, and I flatter myself in thinking that the resulting synthesis of these two competing rhythms, while not the equivalent of the Latin complexity, makes a worthy music of its own.

The language of poetry is not the language of prose. I have tried to represent the prose speeches of the participants in this dialogue with full respect for what may be called their pedanticisms and niceties: And so it is for this very reason that . . . ; it cannot in any way be doubted . . . ; I see that that is indeed the logical consequence. . . . *Consolation* tells of the worlds of God and of mortals, of timeless reality and physical things, and I have not tried to substitute, as would be the standard translation practice, more elegant English abstract nouns for these crucial "things". " (pp. XXVIII-XXIX)

(1) Stress marks fall on the second element of a diphthong (e.g., eách). When on the first element, they help suggest a polysyllabic pronunciation (e.g., concéaled is trisyllabic at IV.m.5.9.).

(2) For example, IV.6.9: "Should one look at the force of these two terms in one's own mind, it will appear quite

easily that they are different; for Providence is the divine reason itself, established in the highest ruler of all things, which arranges all things; Fate is the arrangement that inheres in the things that have motion, the arrangement through which Providence weaves all things together in their proper orders.” In the verse sections, necessities of meter at times force me to exploit a fuller range of translation options.

18. Sharples, Robert W., ed. 1991. *Cicero: On Fate (De fato): & Boethius: The Consolation of Philosophy (Philosophiae consolatio) IV. 5-7, V.* Warminster, England: Aris & Phillips.

Contents: Preface VI; Note on abbreviations IX;

Introduction. 1. Cicero and the Latin reception of Greek philosophy 1; 2. The place of *On fate* among Cicero's philosophical works 3; 3. The freewill problem before Cicero; 3.1 Causation 6; 3.2 Future truth and possibility 11; 4. Cicero's treatise *On Fate*: plan and sources; 4.1 The plan of the work 16; 4.2 Cicero's sources 20; 5. An evaluation of Cicero's treatise 23; 6. The influence of Cicero's treatise 24; 7. Divine foreknowledge from Cicero to Boethius 25; 8. Fate and providence 29; 9. The problem of evil 31; 10. Boethius' life and works 34; 11. The *Consolation of Philosophy* 37; 12. The sources and arguments of IV.5-7) and V 41; 13. The *Consolation* and Christianity 46; 14. The influence of the *Consolation of Philosophy* 48;

14. On the texts 49; Sigla 51; Text and translation: Cicero, *On fate* 52; Appendix: Parallel texts 92; Boethius, *Consolation of Philosophy* IV.5-7 and V 102; Commentary: Cicero, *On fate* 159; Appendix: Parallel texts 196; Excursus: Terminology for Causes 198; Boethius, *Consolation of Philosophy* IV.5-7 and V 202; Select Bibliography 233; Index 241-244.

"The two texts considered here are linked by more than one common feature. They are examples of the writings of the two men who did more to communicate Greek philosophy to

the Latin-speaking West than anyone else in antiquity, with the possible exceptions of Augustine and (in one particular field) Lucretius. They are works which reflect two very different branches of the tradition that goes back to Plato, or to Plato's Socrates. Cicero writes as a follower of the sceptical New Academy, which derived its readiness to challenge dogmatic positions from Socrates even if its belief that certainty is impossible was not one he would have shared; Boethius' *Consolation* is in the tradition of the revived dogmatic Platonism of the Imperial period, a Platonism that welcomed, and made use of, ideas from Aristotle as well as from Plato. They are works of philosophy written by two men each of whom played a part in the public life of their times - and paid with their own lives for doing so; though there is the difference that Boethius' *Consolation of Philosophy* was written when its author was already under sentence of death, while Cicero's *On Fate* was written in haste as its author was planning the return to the political arena that was ultimately to be his downfall. Above all, however - and this is the justification for uniting the two texts, or rather one fragmentary text and one partial extract, in this single volume - they represent two stages in a story, the story of man's attempt to understand whether he is or is not in control of his own destiny; this story in one guise or another pervades the literature of antiquity, and is not finished yet.

That said, there are also great differences between the two texts. Cicero's treatise *On Fate* survives in fragmentary form only; we may have about two-thirds of the whole text, but it lacks its beginning and its end, and there are major gaps which seriously affect our interpretation of the whole.

Questions concerning the literary form and structure of the treatise as originally composed, of Cicero's sources and of philosophical interpretation are here all closely intertwined with one another, giving this work a particular fascination over and above that of the subject-matter itself; but, while it

has been extensively quarried for technical discussions, and extensive extracts have been included in source-books, English readers have been poorly served until now as far as the availability in a single volume of a reliable continuous text and translation is concerned.

The situation with Boethius' *Consolation* could hardly be more different. It is one of the major works of world literature; the work that - along perhaps with Augustine's *City of God* - marks the boundary between ancient and medieval thought; a work which profoundly influenced the thought of the Middle Ages; a work translated into English by, among others, Alfred the Great, Chaucer, and Elizabeth the First. It is a daunting prospect to write about such a work, a work moreover that can be approached from many different perspectives: its relation to earlier Latin literature both in prose and in poetry, its relation to Boethius' philosophical interests on the one hand and his Christian beliefs on the other, its influence on later thought and literature. In a book of the present size it would scarcely be possible to do justice to all these perspectives; given the reason for including Cicero and Boethius together in this book in the first place, I hope that my comments may at least be helpful for those who wish to consider the part of the *Consolation* here included as a stage in a particular philosophical debate.

That, too, must be the justification for violating Boethius' design by including only a part of the whole, even though it is the final part and culmination. I can only hope that those who read the end of the work here will want to go on and read what precedes. Boethius does mark a new stage in the discussion by Philosophy's observation that "You summon me to a matter which involves the greatest enquiry of all"; the reason for including the end of book 4 as well as book 5 is that it introduces the question of how fortune and freedom are to be reconciled with the divine providence

which has formed the topic of the discussion since 3.12." (*Preface*, VI-VII).

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Boethius' Logic as a Discourse on Being

Introduction: An Overview of the Logical Works of Boethius

"According to Minio-Paluello, the editor of most of the translations, the medieval manuscript tradition shows traces of both a first and a second version of the Latin *Categories*, *Peri hermeneias*, *Prior Analytics* and *Topics*. (5) Boethius did not take his task as a translator lightly!

Only one commentary on the *Categories* is extant, but in it Boethius announces a plan to write a second one, and it seems likely that an anonymously transmitted text may be a small fragment of the second commentary (whether it was ever completed or not). (6) Of the two commentaries on *Peri hermeneias*, the second is considerably longer and generally more interesting than the first. There is no dedicated companion monograph, but parts of the lore of the *Peri hermeneias* are presented in the works on categorical syllogisms and the one about topical differences.

It seems possible that Boethius composed or prepared a commentary on the *Prior Analytics*. While preparing an edition of Boethius' translation of this Aristotelian text, Minio-Paluello discovered that a twelfth-century manuscript contains marginal scholia on that work which must be translations from the Greek

or adaptations of a Greek source, and the translator's habits seemed to indicate that he was no one other than Boethius. (7) Possibly, then, these scholia were raw materials intended for use in a commentary. Later I discovered traces of more translated Greek scholia in a twelfth-century commentary on the *Prior Analytics*. (8) This suggests that either (1) Boethius had left more extensive raw materials than the ones discovered by Minio-Paluello, or (2) he had actually left a whole commentary, of which we have only discovered little fragments, or (3) in spite of the agreement with Boethius' habits as a translator, what Minio-Paluello and myself discovered were in fact traces of a twelfth-century translation – complete or partial – of a Greek commentary. The matter is in need of further research. The monograph on categorical syllogisms may reasonably be seen as a handy summary of the subject treated at length and in depth in the *Prior Analytics*, while the one on hypothetical syllogisms is only linked to the Aristotelian work in the sense that it was customary in late antiquity to think that, by laying the foundations of categorical syllogistic in *Prior Analytics*, Aristotle had also laid the foundations of hypothetical syllogistic, and commentators seem routinely to have said something about the latter in connection with *Prior Analytics* I.23.

Boethius' treatment of hypothetical syllogisms is (to put it mildly) very strange; recently a Greek parallel to a little part of it was discovered, (9) but for the most part it is unparalleled in ancient literature, though, admittedly, we do not have much by which to gauge what may have been the standard approach to the matter in late antiquity. Boethius probably never translated or commented on the *Posterior Analytics*, though he obviously had some acquaintance with the work, and must be assumed to have intended to include it in his program. (10) He himself mentions that there was a book by Vettius Praetextatus (c.320–84) which claimed to be a Latin translation of both of Aristotle's *Analytics*, while in fact it contained translations of Themistius' fourth-century paraphrases, "as is obvious to anyone who knows both." (11) Nor does Boethius seem to have commented on the

Sophistical Refutations, although he did translate it. About Boethius' lost commentary on the *Topics* not much can be said except that it probably depended on a paraphrase-commentary by Themistius, which he also used in his *De topicis differentiis*, and from which he seems to have derived the idea that a topic (Greek *topos*, Latin *locus*) is not only a highly general notion such as "genus" or "form," but also an associated axiom (Greek *axioma*, Latin *maxima*), such as "A thing is capable of exactly as much as its natural form permits" and "Things that have different genera are also different from one another." (12)

In a way, *De topicis differentiis* might more properly be classified as a companion to Cicero's *Topics*, which was taught in Roman rhetoric schools, it seems, and on which first Marius Victorinus and then Boethius had composed commentaries. Boethius, however, in *On Topical Differences*, inserts so much material with a background in Aristotelian exegesis that the result is something that might well be taken to contain the essentials of the lore of Aristotle's *Topics* – and, indeed, that was how medieval schoolmen were to read the work." (pp. 37-38)

Notes

(5) See Minio-Paluello's introductions to volumes I, II, III and V of *Aristoteles Latinus* [= *AL*]. His arguments seem very strong, but I cannot quite suppress a fear that his similar results for each work may be due to some flaw in his methodology. Dod 1982: 54 cautiously says that "[t]he revisions may be Boethius' own, or they may be the work of an unknown editor, possibly working in Constantinople where Boethius' works are known to have been transcribed (and perhaps edited) already in the sixth century."

(6) See Hadot 1959.

(7) See Minio-Paluello 1957. Cf. Shiel 1982. Edition in *AL* III.4, supplements in Shiel 1984.

(8) See Ebbesen 1981b.

(9) See Bobzien 2002.

(10) A reference to a Boethian commentary on *Posterior Analytics* I is found in a thirteenth-century MS (Munich, clm 14246), but this is surely an error. The work referred to was really the translation of Philoponus' commentary that most schoolmen attributed to Alexander of Aphrodisias. I regret having called attention to the Munich MS in a small article of 1973 (CIMAGL 9: 68–73), and I beg my readers not to waste their time on looking up that article.

(11) Boethius 2IN [*Second Commentary on On Interpretation*] 3.

(12) For the history of the Boethian theory of topics see Ebbesen 1981a: 1. 106ff. The maxims cited occur at TD [*De topicis differentiis*] 2.7.26: p. 36 (1190A) (page references to TD are to Boethius 1990, with references to Boethius 1847 added in brackets) and 3.3.11: p. 52 (1197C).

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From: Sten Ebbesen, "The Aristotelian Commentator", in John Marenbon (ed.), *The Cambridge Companion to Boethius*, Cambridge: Cambridge University Press 2009, pp. 34-55.

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Boethius' Logic. An Annotated Bibliography

SELECTED BIBLIOGRAPHY ON BOETHIUS' LOGICAL WORKS AND COMMENTARIES

1. Ashworth, Earline Jennifer. 1989. "Boethius on Topics, Conditionals and Argument-Forms." *History and Philosophy of Logic* no. 10:213-225.
"Eleonore Stump's splendid translation of *Boethius's In Ciceronis Topica* (Ithaca and London: Cornell University Press, 1988) is a very welcome companion to her earlier translation of Boethius's *De topicis differentiis* (Ithaca and London: Cornell University Press, 1978). Together the two volumes provide us with a hitherto unequalled opportunity to come to grips with the logical work of an author whose influence on medieval and Renaissance developments in this field was surpassed only by Aristotle himself. Indeed, it was only because of Boethius, his translations and commentaries, that Aristotle was first transmitted to the Latin speaking West. The importance of Boethius's work on the Topics is not purely historical, for it offers us a valuable insight into a type of logic which is aimed not at the production of formal languages or the examination of valid inference forms, but at ways to produce belief in the context

of debate and against a background of straightforwardly metaphysical doctrines.

In this essay review I shall first make some general remarks about the nature of Topics-logic, with particular reference to *In Ciceronis Topica* . I shall then explore just one Topic, that of incompatibles, which is a particularly interesting Topic for several reasons. First, Boethius's attempt to define incompatibles shows the limitations of any formal approach to the material in hand. Second, Boethius's use of the Topic casts considerable light on his view of conditionals and their basis in metaphysical features of the world. Third, the examination of these issues helps explain Boethius's interpretation of certain key argument forms and their relation to Stoic logic. Finally, I shall make some remarks about Stump's translation and notes." (p. 213)

2. Asztalos, Monika. 1993. "Boethius as a Transmitter of Greek Logic to the Latin West: the *Categories* ." *Harvard Studies in Classical Philology* no. 95:367-407.

"...my purpose in this paper is to bring out what these commentaries, and especially the ones on the *Isagoge* and the *Categories* , reveal about Boethius' working methods in his earliest works on Greek logic. I intend to deal less with the end product than with the road to it, and to point to the stages of development and improvement exhibited within these early works." (p. 367)

(...)

"Boethius devoted his first effort in Greek philosophy to Porphyry's *Isagoge* , and later, in the year of his consulate (510), when he was in all likelihood in his late twenties, he spent all his spare time commenting for the first time on a work by Aristotle, the *Categories* . Ever since Samuel Brandt attempted a chronology of Boethius' works on the basis of their internal references, it has been commonly held that when Boethius began commenting on the *Categories* , he had already written both his expositions of Porphyry's *Isagoge* (hereafter *Isag. 1* and *Isag. 2*), the first one a

dialogue in two books based on Marius Victorinus' apparently incomplete Latin version, the second a five book commentary on his own, complete translation. (2) This is certainly not the place for a full discussion of the chronology of Boethius' works, but for the arguments of this paper it is necessary to establish the order between *Isag. 2* and the commentary on the *Categories* (CC)." (p. 368)

(..)

"... I am not in a position to judge whether or not Boethius displays real originality in his later, more mature works. But I think that it would be unfair to expect novel interpretations in commentaries like the *Isag. 1* and CC, which, if my assumptions in the first sections of this paper are correct, are not only the earliest of Boethius' works on Greek philosophy but also the context in which he first encountered Aristotle. He seems to have come quite unprepared to both the *Isagoge* and the *Categories*, unarmed with proper translations and unfamiliar with the work he was commenting on. Boethius is indeed an epitome of the expression *docendo discimus* ." (p. 407)

(2) 2 S. Brandt, "Entstehungszeit und zeitliche Folge der Werke von Boethius," *Philologus* 62 (1903), 141-154 and 234-275. See also pp. XXVI-XXIX of the *Prolegomena to Anicii Manlii Severini Boethii In Isagogen Porphyrii commenta*, rec. S. Brandt, *Corpus Scriptorum Ecclesiasticorum Latinorum* 48, Wien/Leipzig, 1906. In his "Stylistic Tests and the Chronology of the Works of Boethius," *Harvard Studies in Classical Philology* 18 (1907), 123-156, A. P. McKinley's conclusions concerning the chronology of *Isag. 7*,

Isag. 2, and the commentary on the *Categories* (hereafter CC) are the same as Brandt's.

McKinley studied the frequency of certain particles in these commentaries as well as in Boethius' translations of the *Isagoge* and *Categories*, assuming that Boethius' language was influenced by his translations of Porphyry and Aristotle.

Now, some of McKinley's data corroborate Brandt's chronology whereas others support the one I will suggest below. Furthermore, McKinley's tests were made before the appearance of L. MinioPaluella's critical editions of Boethius' translations in the *Aristoteles Latinus* and would therefore have to be remade. I also believe that a necessary preliminary stage in examining whether Boethius' translating activities influenced his choice of particles is to compare his Latin commentaries with the extant Greek sources. Since there is no adequate source apparatus in any of the editions of Boethius' commentaries, this would mean a great deal of work. Concerning the question whether Boethius wrote *Isag. 2* before or after CC, L. M. De Rijk follows Brandt's view on pp. 125-127 of "On the chronology of Boethius' works on logic," *Vivarium* 2 (1964), 1-9 and 125-162, on exactly the same grounds as the ones on which Brandt based his conclusions and without corroborating them further.

3. ———. 2003. "Boethius on the *Categories* ." In *Boèce ou la chaîne des savoirs* , edited by Galonnier, Alain, 195-205. Louvain-Paris: Éditions Peeters.
 "Among Boethius' commentaries on Greek works on logic (that is to say, on Porphyry's *Eisagoge* and on Aristotle's *Categories* and *Peri hermeneias*), only the one on the *Categories* has so far not been critically edited. At present I am editing the text and at the same time preparing an English translation of it to appear in *Ancient Commentators on Aristotle* . (1) So far only translations of Greek commentaries have appeared in this series, and consequently the fact that Boethius' work on the *Categories* will be included is a statement about his heavy dependence on Greek sources. It is of course a well-known fact that all Boethius' commentaries on Aristotle's works are heavily dependent on Greek Neoplatonic interpretations. However, the extent to which this is true has so far not been revealed in the form of a source apparatus accompanying the texts

edited. In the case of the commentaries on the *Peri hermeneias*, the two volumes of which appeared in 1877 and 1880 respectively, the editor did not have access to a modern edition of the extensive commentary by Ammonius which has since appeared in *Commentaria in Aristotelem Graeca*. (2) But for an editor of Boethius' commentary on the *Categories* the work is easier: first of all, there are a number of Greek commentaries on this work that have been edited in CAG. In addition, those by Porphyry, Dexippus, and Ammonius have appeared in commented translations in *Ancient Commentators on Aristotle*.

So, while in the process of editing Boethius' work on the *Categories*, I have provided the text with an apparatus indicating parallels in the Greek commentaries. A great deal of work has already been done in order to map out the nature and extent of Boethius' dependence on the Greeks in this particular work of his. There is Bidez' groundbreaking article "Boèce et Porphyre", where Porphyry's little commentary on the *Categories* in the form of questions and answers (3) is described as "la source unique, ou a peu près unique, du commentaire de Boèce" (p. 195); James Shier's provocative papers presenting Boethius as a translator of scholia that he allegedly found in the margins of his copy of Aristotle, some of them originating from the school of Proclus but the majority taken from *Q&A*; Sten Ebbesen's article on Boethius as an Aristotelian scholar, in which *Q&A* is described as Boethius' main source, a source from which he deviated when he wished to avoid introducing Neoplatonic entities such as the Eternal Mind into his own elementary work; a contribution of my own in which I claim that Boethius used *Q&A* but also a commentary on the *Categories* written by a follower and occasional critic of Iamblichus; and the valuable footnotes to Steven Strange's English translation of *Q&A* with their references to Boethius' commentary. (4) What all these different studies

have in common is that they consider Porphyry's Q&A to be Boethius' main source.

So, one may justifiably ask, is there anything really new to be said about Boethius' use of the Greek sources in his commentary on the *Categories* ? The purpose of this paper is to show that while putting together a source apparatus for Boethius' text I have come to the conclusion that our view of Boethius' dependence on Porphyry needs to be modified.

(5)" (pp. 195-196)

(...)

"To conclude: Boethius naturally used Porphyry's extant little dialogue on the *Categories* . But his main source is a later Greek commentary that makes use of Iamblichus' commentary but whose author takes an uncompromisingly Aristotelian stance. Since Iamblichus made ample use of Porphyry's no longer extant *Ad Gedalium* , the influence of Porphyry is quite heavy on Boethius' commentary. When the two sources (Q&A and the later commentary) expressed different views, for example on the scope of the *Categories* , Boethius did not bother to try to harmonize between the two. In that respect, he is not a full-fledged scholastic in his commentary on the *Categories* , which is an early work of his, at least not as full-fledged as he was to become later, when he wrote the *Consolation of philosophy* ." (pp. 204-205)

(1) General editor: Richard Sorabji.

(2) *Anicii Manlii Severini Boetii commentarii in librum Aristotelis PEPI EPMHNEIAS* , rec. Carolus Meiser, I-II, Leipzig, 1877, 1880. Ammonius, *In Aristotelis De interpretatione commentarius* , ed. A. Busse, *Commentaria in Aristotelem Graeca* (=CAG) IV:5, Berlin, 1897.

(3) *Porphyrii in Aristotelis Categorias expositio per interrogationem et responsionem* , ed. A. Busse, CAG IV: 1, Berlin, 1887. This work is henceforth referred to as Q&A .

(4) J. Bidez, "Boèce et Porphyre", *Revue belge de philologie et d'histoire* , 2, [1923] p. 189-201. J. Shiel, "Boethius'

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(5) I wish to thank Börje Bydén, Göteborg University, for his valuable comments on this paper.

4. ———. 2014. "Nomen and Vocabulum in Boethius's Theory of Predication." In *Boethius as a Paradigm of Late Ancient Thought* , edited by Kirchner, Andreas, Jürgasch, Thomas and Böhm, Thomas, 31-52. Berlin: Walter de Gruyter.
- "Anyone who tries to make sense of Boethius's commentary on Aristotle's *Categories* will be intrigued by his use of the terms *nomen* and *uocabulum* . Sometimes it is clear that he cannot be using the terms to refer to names (in our sense of the word) and words, but then how does he use them? They may appear to be interchangeable, (1) but there is a difference in how Boethius uses these terms, and it is important to establish what the difference is, given that they are essential in Boethius's theory of predication. Then there is a cluster of verbs — *uocare*, *nominare*, *nuncupare* — which are clearly connected with *uocabulum* and *nomen* , but how? The purpose of this paper is to present Boethius's thoughts on predication by exploring the way he uses these key terms.

I will be quoting extensively from my own forthcoming edition of Boethius's commentary on the *Categories* . I have not given references to the text printed in Migne's *Patrologia Latina* vol. 64 but have specified which lines in

Aristotle's text the passages quoted comment on. This will make it fairly easy for readers to find the appropriate places in the Migne edition. All translations are my own.

In Boethius's commentary on Aristotle's *Categories*, *nomina* and *uocabula* are couched in a theory involving also *res*, *uox*, *significare*, *significatio*, and *designare*.

These are main protagonists in Boethius's commentaries on the *De interpretatione*, a work in which *nomina* and *uocabula* take the back seat." (p. 31)

(...)

"Does Boethius's use of *uocabulum* and *nomen* make him a paradigm of Late Ancient thought? In the case of *nomen* as a term for a mental collection of things he could to a certain extent lean on tradition, given that the word is commonly used for a collection like a family or a people in classical Latin. Furthermore, it cannot be ruled out that Aristotle uses ὄνομα in the same way. But what about *uocabulum* and its connection with *uox* and *uocare*? Only a study of earlier Latin texts can confirm that Boethius has introduced a new tool in the theory of predication. And it remains to be investigated whether or not medieval philosophers appreciated the value of the tool and employed it in their own discussions of predication." (p. 50)

(1) In her recent book *Boethius on Mind, Grammar and Logic. A Study of Boethius' Commentaries on Perihermeneias*, (= *Philosophia antiqua*; 127), Leiden/Boston 2012, Taki Suto holds: "Even though there may be some difference in Boethius' usage of these two expressions, the difference is slight, and he may not differentiate between them." (p. 68, note 109).

5. Barnes, Jonathan. 1981. "Boethius and the Study of Logic." In *Boethius: His Life, Thought and Influence*, edited by Gibson, Margaret, 73-89. Oxford: Blackwell. Reprinted in J. Barnes, *Logical Matters. Essays in Ancient Philosophy II*, New York: Oxford University Press, Chapter 26, pp. 666-682.

"Boethius' logical oeuvre contains works of three types. First, and at the centre, there are the Latin translations of the Greek texts: Boethius put into Latin the *Categories*, the *de Interpretatione*, the *Prior* and *Posterior Analytics*, (5) the *Topics*, the *Sophistici Elenchi*; and he prefaced his Latin *Organon* with a version of Porphyry's *Isagoge*, the standard Greek introduction to Peripatetic philosophy. (6) Secondly, there are the commentaries: Boethius planned commentaries on the *Isagoge* and on each book of the *Organon*, and he added, as a supplement, a commentary on Cicero's *Topics*. (7) The commentaries on Aristotle's *Topics* and *Analytics* have not survived; and some scholars doubt if Boethius lived to complete his commentatorial task. (8) Thirdly, there are the treatises: *On Division* covered much of the ground tilled in the *Categories*; *On Categorical Syllogisms* and the unfinished *Introduction to Categorical Syllogisms* correspond in part to the *de Interpretatione* and the *Prior Analytics*; *On Hypothetical Syllogisms* has no counterpart in Aristotle's works, but answers to a fixed feature of later Peripatetic logic; *On Topical Differences* matches Aristotle's *Topics*. (9) Thus on three distinct levels Boethius translated Peripatetic logic from Greece to Rome. His achievement is remarkable by any reckoning; and his work in logic stands as a paradigm of sustained and systematic scholarship. The next three sections will discuss separately the translations, the commentaries, and the treatises; but it should not be forgotten that, for Boethius, those three types of scholarly production were complementary parts of a unitary whole." (pp. 74-75)

(...)

"What, then, was Boethius' contribution to the study of logic?

First, Boethius was not an original logician: he did not pretend to be. He saw himself as a translator, conveying Greek wisdom to a Greekless world; the insights which his

works contain are not his own, his knowledge is tralatitious. From time to time we can, I believe, hear Boethius' own voice; and some at least of the disposition and organisation of his material originated in his own head. But those touches of personality are relatively rare and relatively unimportant: the *summa logicae* which Boethius determined to present was traditional Peripatetic logic; and it is an error to speak of a Boethian logic.

Secondly, it must be admitted that today we owe little to Boethius' immense labours. He strove to transmit Aristotle to the West; but our present knowledge of Aristotle depends hardly at all on his strivings. Aristotle's texts, and the texts of his Greek commentators, have survived in their original Greek: we can study Peripatetic logic, as Boethius himself did, in the original sources. Had all Boethius' logical writings been lost, our modern student of logic would have little to bewail, apart perhaps from the treatment of hypothetical syllogistic.

It is rather within the context of his own dark times that Boethius' service to logic must be sought. Greek learning was increasingly inaccessible, and the Latin world was rude. By his sole efforts Boethius ensured that the study of Aristotle's *Organon*, and with it the discipline of logic, was not altogether eclipsed in the West. Boethius' labours gave logic half a millenium of life: what logician could say as much as that for his work? what logician could desire to say more?" (pp. 84-85)

(5) The translation of the *Posterior Analytics* has not survived; but see *AL* [*Aristoteles Latinus*], IV. 1-4, pp. XII-XV.

(6) For the status of the *Isagoge* see in *Isag* ed 1. 14-5. Boethius regarded the *Organon*, prefaced by the *Isagoge*, as a unitary — but not a fully comprehensive — treatment of logic.

(7) At first blush, the commentary on Cicero seems anomalous; but in fact Cicero presents his *Topics* as a

version indeed, a translation — of Aristotle's *Topics* , and Boethius regarded Cicero's work as forming an integral part of Peripatetic logic (*in Cic Top* 271-3).

(8) (i) *Topics* : Boethius states categorically that he has written a commentary (*Top diff* 1191 A, 1209 C, 1216 D). Nothing is known to have survived.

(ii) *Prior Analytics* : we possess only preliminary notes (published in *AL* , III. 1-4) ; at *Syll cat* 829D Boethius says that he will comment on the *Analytics* , but he nowhere asserts that he has composed such a commentary.

(iii) *Posterior Analytics* : a note to a thirteenth-century commentary on the *Sophistici Elenchi* quotes from 'Boethius' commentary on Book I of the *Posterior Analytics* ' : see S. Ebbesen, 'Manlius Boethius on Aristotle's *Analytica Posteriora* , CIMA GL IX (1973), 68-9. If we believe the note, then — contrary to orthodox opinion — Boethius did write such a commentary.

(9) The dating of Boethius' logical works is to some extent conjectural: see the long discussion of L. M. de Rijk, 'On the chronology of Boethius' works on logic', *Vivarium* II (1964), 1-49, 125-62. His first *opus* was in *Isag* ed 1, composed in 504/5; he was probably working on *Intr syll cat* and *in An Pr* in 523; *in Cat* is dated to 510. There is not much awry with the following ordering: *in Isag* ed 1; *Syll cat* ; *Div* ; *trans Isag* ; *in Isag* ed 2; *trans Cat* ; *in Cat* ; *trans de Int* ; *in Int* ed 1; *in Int* ed 2; *trans Top* ; *trans Soph El* , *Syll hyp* , *in Top* ; *in Cic Top* ; *trans An* ; *Top diff* ; *Intr syll cat* ; *in An Pr* .

6. Belli, Margherita. 2014. "Boethius, disciple of Aristotle and master of theological method: The term *indemonstrabilis* ." In *Boethius as a Paradigm of Late Ancient Thought* , edited by Kirchner, Andreas, Jürgasch, Thomas and Böhm, Thomas, 53-82. Berlin: Walter de Gruyter.
Indemonstrabilis . This term belongs to the Late Latin language and is a legacy of Aristotle's logic, especially of the *Analytica posteriora* . It can be considered, therefore, a

useful tool to focus on three aspects of the deep and wide knowledge of the Aristotelian logic, which contributes to making Boethius a unique figure among the Late Ancient authors of the Latin West and the leading guide of the so-called *boethiana aetas*. The three aspects entail:

a) the relationship between Boethius and the Author of the *Peri hermeneias*, as both committed themselves to transmitting the Aristotelian logic to the Latin West and to developing a suitable terminology;

b) the methodological meanings that Boethius conveyed to *indemonstrabilis*, in order to open it to rational theology, through the convergence between *maxima propositio* and *comunis animi conceptio*;

c) the way in which some 12th-century authors transformed the previous convergence into an identity, making it the starting point of a method that distinguishes theological knowledge from the other arts and places it above them all.

From a research conducted by using the *Library of Latin Texts A–B*, *Aristoteles Latinus Data-base*, *Patrologia Latina Data-base*, and *Repertorium edierter Texte des Mittelalters*, (1) it results that *indemonstrabilis* was rarely employed until the first half of the 12th century, when the *Analytica Posteriora* came back to the Latin West, along with Aristotle's other treatises. During the Late Antiquity *indemonstrabilis* was used only by the Author of the *Peri hermeneias* and by Boethius. It does not matter if the Author of the *Peri hermeneias* cannot be identified as Apuleius of Madaura, because in the worst hypothesis the *Peri hermeneias* must be dated no later than the 4th century, having been quoted by Martianus Capella in *De nuptiis Philologiae et Mercurii*. (2) Among the pages of the *Peri hermeneias* and Boethius's *De syllogismo categorico* (505–506), *In librum Aristotelis De interpretatione secunda editio* (513–516), and *De topicis differentiis* (522–523),³ there are 16 occurrences of *indemonstrabilis*, which signify (for the related passages see the appendix):

1.1.a. the first four moods in the first figure of categorical syllogism

1.2. the Stoic hypothetical indemonstrables

1.3.a. the maximal propositions of dialectic." (pp. 53-54)

(1) *Brepolis Latin* , www.brepolis.net (accessed 30/05/2014); *Patrologia Latina Database* , Alexandria/Cambridge 1995–2008; *Repertorium edierter Texte des Mittelalters aus dem Bereich der Philosophie und angrenzender Gebiete* , ed. by Rolf Schönberger et alii, Berlin 2011.

(2) The authorship of the *Peri hermeneias* is still questioned. Some scholars maintain Apuleius's paternity of the treatise and others reject it. Among the scholars in favour are Sandy, Sullivan, Londey, Johanson, and Sallmann, whilst Beaujeu, Lumpe, Moerschini, and Harrison are contrary. See Stephen J. Harrison: *Apuleius. A Latin Sophist* , Oxford/New York 2000, 11; Gerard Sandy: *The Greek World of Apuleius. Apuleius and the Second Sophistic* , (= Mnemosyne. Supplementum; 174), Leiden/New York/ öln 1997, 38–41; *Die Literatur des Umbruchs. Von der römischen zur christlichen Literatur, 117 bis 284 n. Chr.*, ed. by Klaus Sallmann, (= Handbuch der Altertumswissenschaft; 8,4), Munich 1997, 301; Claudio Moerschini: "Ricerche sulla tradizione manoscritta del *De interpretatione* pseudoapuleiano", in: *Pan* 10 (1990), 61–73; David Londey/Carmen Johanson: *The Logic of Apuleius. Including a Complete Latin Text and English Translation of the Peri Hermeneias of Apuleius of Madaura* , (= Philosophia antiqua; 47), Leiden/New York 1987, 8–15; Adolf Lumpe: *Die Logik des Pseudo-Apuleius: ein Beitrag zur Geschichte der Philosophie*, Augsburg 1982, 44–46; *Apulée: Opuscules philosophiques et fragments*, ed. J. Beaujeu, Paris 1973, vii–viii; Mark W. Sullivan: *Apuleian Logic. The Nature, Sources, and Influence of Apuleius's Peri Hermeneias*, (= Studies in logic and the foundations of mathematics; 37), Amsterdam 1967, 235–242.

(3) Apuleius: *Peri hermeneias* , in: Apuleius: *De Philosophia libri* , ed. C. Moreschini, (= Bibliotheca Teubneriana), Stuttgart/Leipzig 1991; Boethius: *De syllogismo categorico* , ed. C. Thomsen Thörnqvist, (= Studia Graeca et Latina Gothoburgensia; 68), Gothenburg 2008; Boethius: *Commentarii in librum Aristotelis Περὶ Ἑρμηνείας*, ed. C. Meiser, II, (= Bibliotheca Teubneriana), Leipzig 1880; Boethius: *De topicis differentiis und die Byzantinische Rezeption dieses Werkes* , ed. D.Z. Nikitas, (= Corpus Philosophorum Medii Aevi. Byzantinoi philosophoi; 5), Athens/Paris/Bruxelles 1990.

7. Bird, Otto. 1960. "The Formalizing of the Topics in Mediaeval Logic." *Notre Dame Journal of Formal Logic* no. 1:138-149.

"The Topical Difference, or more literally the Difference of the Maximal Proposition, is that by which one Topic differs from another (BDT. 1186A).

Thus the Topic of Definition, for instance, differs from that of Whole and Part in that the Maxim of the one warrants an inference among terms in which a Definition occurs, while the other warrants an inference among terms in which Whole and Part occur.

Topical Differences, according to Boethius, "are drawn forth from the terms constituting the question and then discoursed about" (BDT. 1186A).

Thus in our example, it is the question, whether trees are animals, that makes it possible to appeal to the Topic of Definition, since, knowing the definition of "animal" and that trees do not satisfy it, we are warranted by the Topical Maxim to conclude that trees are not animals.

The *De Differentiis Topicis* is little more than a listing of such Topical Differences with representative Maxims for each. Book II gives the compilation of Topics made by Themistius from Aristotle; Book III that of Cicero, followed by a comparison of the two. Book I is a general introduction dealing with the terms used for analysing an argument, and

Book IV, the final book, considers the Topics used by rhetoricians.

This work became the source for mediaeval Topical doctrine. It seems to be the only work Abelard used for his extensive treatise on the Topics.

Peter of Spain made a precis of it (primarily of the second book) and provided additional Maxims in the fifth tract of his *Summulae*. Since this became a standard elementary text in logic from the late 13th through the 15th centuries, Boethius thus remained indirectly the *auctoritas* for the Topics, and this seems to have remained true even after the recovery of the Aristotelian Topic a in the late 12th century." (pp. 140-141)

References

BDT = Boethius, *De Differentiis Topicis* , in Migne, *Patrologia Latina* , T. 64.

8. Bobzien, Susanne. 2002. "A Greek Parallel to Boethius *De hypotheticis syllogismis* ." *Mnemosyne* no. 55:285-300. "In this paper I discuss a longish anonymous scholium to Aristotle's *Analytics* which is a Greek parallel to Boethius' *De Hypotheticis Syllogismis* .

The scholium is available in print only in Theodor Waitz's edition of Aristotle's *Organon* (Leipzig 1844). It is Codex Laur. 72.5, ff. 210-2, appended at the end of a manuscript of the *Prior* and *Posterior Analytics* . Dieter Harlfinger has dated this part of the codex to the second half of the 10th century (7) this gives us a *terminus ante quem* .

The scholium has, I believe, so far not been recognized as a parallel to Boethius, nor has it been discussed in the literature on hypothetical syllogisms. (8) I am also not aware of any translation. The scholium is important for the history of hypothetical syllogistic, because it is the only extant Greek text that provides a close parallel to the particular theory Boethius presents in Latin. We can assume that the scholium was composed no later than the 10th century (see above). But it preserves elements of a theory

that was most probably developed before the 6th century. There are a number of idiosyncrasies in the terminology, a fact that sets the text apart from all other Greek sources on hypothetical syllogistic, and thus adds to its interest. In the following I present the text of the scholium, a translation, and a commentary, including some general remarks about the theory the scholium preserves." (p. 286) (...)

"In the commentary section it should have become increasingly apparent that the anonymous scholium on hypothetical syllogisms in Waitz is Peripatetic, and not Stoic, in its theoretical approach as well as its terminology. There are several elements of early Peripatetic hypothetical syllogistic preserved in it, although section (10) is likely to be witness to a later development of Peripatetic or Platonist hypothetical syllogisms. The most striking feature in the scholium is the large number of close parallels to Boethius' *De Hypotheticis Syllogismis*. Since it is rather unlikely that the scholium is based on a Latin source, we can assume that there must have been a Greek source from which both the scholium and large parts of Boethius' *De Hypotheticis Syllogismis* are ultimately derived." (p. 300)

(7) D. Harlfinger, in: Paul Moraux (ed.), *Aristoteles Graecus*, vol. 1 (Berlin 1976), Nachtrâge, 475-80, discusses Laur. 72.5.

(8) Except that Prantl, *Geschichte der Logik im Abendlande*, vol. I (Leipzig 1855), 656, quotes part of the scholium in footnote 167.

9. Cameron, Margaret. 2009. "Boethius on Utterances, Understanding and Reality." In *The Cambridge Companion to Boethius*, edited by Marenbon, John, 85-104. Cambridge: Cambridge University Press.

"In this chapter, we will look at the three elements that form the basis of the theory of signification for Boethius, namely expressions, understanding and reality, and their relation to one another. Boethius did not write separate treatises on the

philosophy of language, cognition or metaphysics. Instead, he wrote commentaries on Aristotelian logic. By the time he began to work on them around the start of the sixth century, the texts of Aristotelian logic were read in a fixed sequence: the first three were the *Isagoge* , *Categories* and *On Interpretation* , and Boethius treated topics as and when they are discussed in these texts by Porphyry and Aristotle. To grasp Boethius' theory of signification, we must therefore gather his views on utterances, understanding and reality from a variety of places in his commentaries and put them together. As evidenced by the sheer length of the treatment of Aristotle's brief comments on signification in his commentaries on *On Interpretation* , there is no question but that Boethius was aware of the importance of a theory of signification in explaining how the words we use are able to make sense to others and to refer to reality. We might expect, therefore, that Boethius' views on language broadly cohere with his theory of cognition and metaphysics given elsewhere in the commentaries on the *Isagoge* and *Categories*. (1)

The following sections aim to give a general overview of Boethius' theory of signification by considering in turn what he says about expressions, understanding and reality in his logical commentaries.

In the final section, we will consider the ways in which Boethius' views have been variously interpreted from medieval and contemporary perspectives." (p. 85)

(1) This is not to suggest that Boethius' views did not change over the course of writing his several commentaries. With the exception of Aristotle's *Categories* , Boethius wrote two commentaries per treatise. Here we are concerned to acquire a general overview of Boethius' theory of signification, and we will concentrate mainly on two commentaries by Boethius, 2IS [*Second Commentary on Isagoge*] and 2IN [*Second Commentary on On*

Interpretation], as well as CAT [*Commentary on Categories*].

10. Casey, John Patrick. 2012. "Boethius's Works on Logic in the Middle Ages." In *A Companion to Boethius in the Middle Ages* , edited by Kaylor Jr., Noel Harold and Phillips, Philip Edward, 193-219. Leiden: Brill.

"This chapter discusses important Boethian contributions to medieval logic, in particular his definition of the problem of universals and his translation of Aristotelian logical works. It provides a brief introduction to the basic features of ancient logic relevant to Boethius's most noteworthy contributions to medieval logic. The chapter also discusses the three primary avenues of Boethius's influence upon medieval logic: his translations, commentaries, and original logical treatises. In the late ancient world, the Aristotelian and the Stoic systems of logic were considered to be incompatible rivals. The form of Aristotelian logic survived and was translated into the Middle Ages in the work of Boethius. This meant that medieval logicians learned about categorical propositions, syllogisms, and the problem of universals, rather than propositions, disjunctions, and conditionals." (p. 193)

11. Chadwick, Henry. 1981. *Boethius. The Consolations of Music, Logic, Theology, and Philosophy* . Oxford: Clarendon Press.

Chapter III. Logic Part of Philosophy or a Tool of all Philosophy? 108; Logic and Rhetoric 111; Porphyry 120; Neoplatonists after Porphyry: Iamblichus, Syrianus, Proclus, Ammonius 127; Boethius' commentaries on the *Isagoge* 131; Translator of Aristotle 133; The Ten Categories 141; On Interpretation 152; Future Contingents 157; The Monographs on Logic 163; Propositional Logic and the Hypothetical Syllogism 166.

"The place of logic in the hierarchy of knowledge was one of the many matters long in dispute between the Aristotelians and the Stoics. To the Stoics 'logic' meant something wide,

an independent branch of philosophy, the other two contrasted branches being ethics and 'physics' (the scientific study of nature). The Stoics could point out that this threefold classification had a basis in the *Topics* (A, 14) of Aristotle himself. The Aristotelians, on the other hand, treated logic almost in our modern sense as a practical instrument for the discovery of fallacies in argument on any subject, an indispensable tool for every department of human inquiry. This Peripatetic attitude, from which the title *Organon* derives, presupposes a narrow understanding of the discipline as concerned with propositions and syllogisms and terms.

The Platonic tradition originally preferred to speak of 'dialectic', according to Boethius because it is a power of dividing (*In Cic. Top.* I, 1045B following Plato, *Sophist* 253d). Through its distinctions we learn to divide genera into species, and classify different things under their proper genus. But neither the Neoplatonists of Athens and Alexandria nor Boethius mark a significant difference in force between 'logical' and 'dialectical' reasoning. (1) Until the twelfth century, when an attempt was made to classify dialectic with grammar as two branches of *Logica*, the terms were to be used more or less interchangeably.

The Peripatetic case for their estimate of logic is most eloquently put by Alexander of Aphrodisias in his commentary on the *Prior Analytics* (CAG II, 1) in a way that makes minor concessions to the Platonic tradition. We have a number of late Platonist accounts of this dispute, e.g. the commentaries on the *Prior Analytics* by Ammonius (CAG IV, 6 pp. 811) and Philoponus (CAG XIII, 2 pp. 69). It is incautious to assume with Courcelle that Boethius had Ammonius before him when writing his second commentary on Porphyry in which the dispute is discussed. (2) One major element in Boethius' argument there, that logic is not confined by the limits and aims of other parts of philosophy, and is not restricted to a particular set of questions, stands

without parallel in Ammonius. It is difficult to affirm a literary relation when one is dealing with a convention of the schools which every Neoplatonic teacher will think it his duty to expound." (pp. 108-109)

(1) The contrary is asserted, on a waferthin basis, by G. Pfligersdorffer, ['Zu Boethius, *De Interpretatione*. ed sec. I p. 4, 4 sq. Meiser nebst Beobachtungen zur Geschichte der Dialektik bei den Römern'], *Wiener Studien* 66, 1953, 131-154.] p. 152.

(2) P. Courcelle, *Les Lettres grecques en occident* (1948), p. 272 = *Late Latin Writers* (1969), p. 288.

12. Clark, Joseph T. 1952. "Boethius and Analytical Techniques." *Philosophical Studies of the American Catholic Philosophical Association* no. 3:35-37.
13. ———. 1952. "Boethius and Material Implication." *Philosophical Studies of the American Catholic Philosophical Association* no. 3:37-38.
14. Correia, Manuel Antonio. 2001. "Boethius on Syllogisms with Negative Premises." *Ancient Philosophy* no. 21:161-174. "According to Aristotle, no syllogism is conclusive with two negative premisses (Prior Analytics i 4.41 b7-9). The observation is a central rule of his Theory of Syllogism and recognized so by ancient, medieval, and modern logicians. In ancient scholastic discussions, however, there is a case made in support of thepossibility of conclusion from two negative premisses. It takes, as an authoritative proof, a syllogism made by Plato in the Theaetetus and affirms that syllogisms with two negative premisses are more frequent in philosophical literature than one might suppose. The problem, recovered especially by Boethius' second commentary on Aristotle's *De Interpretatione* (Meiser 1877-1880), arises from considerations of the logical properties of indefinite names in categorical or simple propositions." (p. 161)
(...)

"The question of whether Plato was conscious of the syllogistic technicality that Boethius indicates is surely controversial. We can instead try to resolve the question of whether this syllogism can be reasonably derived from Plato.

Meiser's edition gives a valuable notice: the syllogism in question can be found at *Theaetetus* 186. In fact, the exact passage seems to be Theaet. 186c5-e10." (p. 168)
(...)

"I have argued that the case of a syllogism in Plato's *Theaetetus*, where two apparent negative premisses draw a conclusion, is simply a confirmation of the rule that there are no syllogisms with negative premisses and not, as Boethius suggests, a proof that a universal negation like 'Every man is not just' is equivalent to another one like 'Every man is not-just'. I have discussed this equivalence and similar ones arising from singular, particular, and unquantified propositions.

but the result is that if the equivalence in question does work, it cannot be a characteristic of every categorical proposition. Indeed, even though formal proofs can be provided for some cases of categoricals, unquantified ones are explicitly stated as consequences by Aristotle (,A man is not just' follows from 'A man is not-just', but not vice versa). Moreover, equivalences are indeed inconsistent with the principle that there is only one negation for a single affirmation, which Aristotle emphasizes in *De Interpretatione* and *Prior Analytics*. In the end, the question of which was Aristotle's idea of logic arises: whether a formal idea or a dialectical one (i.e., one compatible with the principle that an affirmation can have only one negation)." (p. 174)

15. ———. 2009. "The Syllogistic Theory of Boethius." *Ancient Philosophy* no. 29:391-405.

"Boethius played an important role in transmitting logic to the Latin West. His translations, commentaries, and

treatises deal amply with the most important thesis of Aristotelian logic, a theory whose influence is perceptible even in the last century (cf. Corcoran 2009 ['Aristotle's Demonstrative Logic' *History and Philosophy of Logic* , 30: 1-20]). Two of his surviving logical treatises have traditionally received the title of 'syllogistic', the *Introductio ad syllogismos categoricos* (=ISC) and *De syllogismis categoricis* (=DSC), but DSC is the only one explaining syllogistic, for ISC does little more than mention, belatedly in the course of the text, its being an introduction to syllogistic." (p. 391)

(...)

"Since there has been much discussion concerning the literary unity of DSC's two books and its relation to ISC—including attempts to take book 2 of DSC as book 2 of ISC (which would be the actual *Introductio* Boethius wrote), it is my purpose to argue that DSC proposes a unitary view of Aristotelian logic, in which syllogistic comes to be the third of the three branches organizing the main logical inferences of the theory: opposition, conversion, and syllogism. Accordingly, DSC is indivisible from a doctrinal point of view and no book of DSC can be the part of the other treatise. This discussion is long overdue and it should contribute to understanding the scope of the respective treatises and their relation to each other." (p. 393)

16. ———. 2012. "Boethius on the Square of Opposition." In *Around and Beyond the Square of Opposition* , edited by Béziau, Jean-Yves and Jacqueline Dale, 41-52. Basel: Birkhäuser.

Abstract: "This article intends to reconstruct the textual tradition of the square of oppositions from the earliest textual sources just as treated in Boethius' commentaries on Aristotle's *De Interpretatione* and his treatises on syllogistic, *De syllogismo categorico* and *Introductio ad syllogismos categoricos* . The research discovers two different tracks. One way comes from Plato's *Sophist* and

Aristotle's *De Interpretatione* , and the aim is to distinguish contrariety from contradiction. The second influence also starts from Aristotle, but now in connection with his *Prior Analytics* and its commentaries and treatises on categorical syllogistic, where the aim is to show the square as one of the three main chapters of the complete theory of categorical logic. I suggest that this double ingredient has accompanied the development of the square from the very original beginning of logic."

17. Cranz, Edward F. 2006. "Boethius and Abelard." In *Reorientations of Western Thought from Antiquity to the Renaissance* , edited by Struever, Nancy, 1-20. Aldershot: Ashgate.

"Let me conclude with two brief general addenda. First, I have tried to outline the main development of Abelard's logic and the one most dependent upon Boethius. What we have seen may be summarized by saying that, where Boethius closely connects, sometimes even identifies, intellections, universals and propositions with 'res ' or beings, Abelard shifts all these relationships to a new context and then denies them all: intellections, universals and propositions are not 'res " as physical things. To repeat a phrase; he desubstantializes them all.

But Abelard never stops thinking. Sometimes his conclusions are more new questions than new answers, and his second treatment of a problem is sometimes very different from his first. Some scholars have described the last stage of his thought as a 'return to Platonism': but I think he is more creative and original. He has changed Boethius' res into 'physical things,' and he has denied that intellections or meanings were 'physical things' and turned them into 'nothings.' But there are hints, and there is no time to analyze them here, that at the end he began to move to another new solution in which meanings from having been nothings turn into the ultimate realities. If I had to suggest parallels to his last stage, Petrarch, Lorenzo Valla

and Nicholas of Cusa come to mind. So if I have tried to describe Abelard's transformation of Boethius, what was left, and I don't believe it was ever completed, might be called Abelard's transformation of Abelard.

Second, while Abelard's writings had no wide dispersion and while he was not followed by any school or even by very many pupils, I believe his diffuse influence was greater than one might expect. The reorientations of thought one finds in his logic and elsewhere often spread more widely in his own time than did his specific ideas; they were not destroyed by the reception of Aristotle and in some ways provided a context within which Aristotle was received. So in concluding I cannot resist noting that, while I have characterized what happened as a transformation of Boethius, let us not in this group forget that it was a transformation of Boethius." (p. 20)

18. De Rijk, Lambertus Marie. 1964. "On the Chronology of Boethius' Works on Logic. Part I." *Vivarium* no. 2:1-49. "The chronological order of Boethius' works appears to be a rather difficult problem. Hence, it is not surprising that the numerous attempts to establish it led the scholars to results which are neither all conclusive nor uniform. In this article I confine myself to Boethius' works on logic. Before giving my own contribution it would seem to be useful to summarize the results of preceding studies and to make some general remarks of a methodological nature.

(...)

My conclusion from this survey is that the best we can do in order to establish approximately the chronological order of Boethius' works on logic is to start a careful and detailed examination of all our data on this matter. In doing so an analysis of their contents seems to be quite indispensable, no less than a thorough examination of doctrinal and terminological differences." (pp. 1 and 4).

19. ———. 1964. "On the Chronology of Boethius' Works on Logic. Part II." *Vivarium* no. 2:125-162.

"We shall now sum up the results of our investigations. First some previous remarks. Our first table gives of nine of the works discussed the chronological interrelation, which can be established with a fair degree of certainty. The figures put after the works give the approximative date of their composition (the second one that of their edition); when printed in heavy types they are based on external data; the other ones are based on calculation.

Table 1

Boethius' birth about 480 A.D.

In Porphyrii Isagogen, editio prima about 504-505

In Syllogismis categoricis libri duo (= ? *Institutio categorica*) about 505-506

In Porphyrii Isagogen, editio secunda about 507-509

In Aristotelis Categorias (? *editio prima*) about 509-511

In Aristotelis Perhemeneias, editio prima not before 513

In Aristotelis Perhemeneias, editio secunda **about 515-516**

De syllogismis hypotheticis libri tres between 516 and 522

In Ciceronis Topica Commentaria before 522

De topicis differentiis libri quattuor before 523

Boethius' death 524

The rest of the works discussed cannot be inserted in this table without some qualification. (...)

We may establish the following table for the works not contained in our first table:

Table 2

Liber de divisione between 505 and 509

possible second edition of the *In Categorias* after 515-516

Translations of the *Topica* (and *Sophistici Elenchi*) and of the

Analytica Priora and *Analytica Posteriora* not after 520

Commentary on Aristotle's *Topica* before 523

the so-called *Introductio* (? = *In Priora Analytica Praedicanda*) certainly after 513; probably c. 523

Scholia on Aristotle's *Analytica Priora* first months of 523 at the latest"

pp. 159-161 (notes omitted).

20. ———. 2003. "The Logic of Indefinite Names in Boethius, Abelard, Duns Scotus, and Radulphus Brito." In *Aristotle's Peri hermeneias in the Latin Middle Ages. Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G. and Kneepkens, Corneli Henri, 207-233. Groningen: Ingenium Publishers.

"Aristotle's doctrine of indefinite names (nouns) was handed down to the Middle Ages together with Boethius' comments and explanations. Boethius' view of the matter has two characteristic features. For one thing, there is a certain ambiguity on his part concerning the precise semantic value of such terms; for another, Boethius deviates considerably from Aristotle in that he explicitly assigns the property of 'holding indifferently of existents and non-existents' not only to the indefinite *rhéma* (as it is found in Aristotle, *De interpr.* 3, 16b15) but to the indefinite name (*onoma*) as well.

Until the end of the 12th century the logic and grammar (1) of indefinite terms (nouns and verbs) was a much debated issue. Although assiduously echoing the well-known *auctoritates* Medieval thinkers did not always go the whole way with their predecessors. For example, Abelard and Scotus, starting from their own philosophical tenets, more or less inconspicuously corrected some dubious elements in Boethius' interpretation of Aristotle's doctrine of the indefinite name. Peter Abelard, especially, took great pains to precisely define the meaning of indefinite terms. He focussed his attention on the proper meaning of indefinite terms rather than on the question whether they are 'holding indifferently of existents and non-existents'. In contrast, 13th-century scholars like Duns Scotus and Radulphus Brito based their discussion of the proper meaning of the indefinite name upon the question '*Utrum nomen infinitum aliquid ponat*' ("Whether an infinite name posits something"), which calls to mind Boethius' claim that

indefinite names 'hold indifferently of existent and non-existents'.

Abelard's discussion of the proper meaning of the indefinite name is also interesting in that it helps us to gain a good understanding of what Boethius had in mind in claiming that the indefinite name 'signifies an infinite number of things' ('*significat infinita*'). For, thanks to Abelard's expositions, it becomes clear that the phrase '*significare infinita*', which, on the face of it, may be taken as referring to the extensional of the indefinite name, on closer inspection proves to concern its intension, because the controversy between Abelard and Boethius turns out to be about two different views of the indefinite name's intension rather than about any opposition of intension as against extension." pp. 207-208.

(1) For the grammatical approaches to the problem of the indefinite term in the 12th century, see C.H. Kneepkens, "Orléans 266 and the Sophismata Collection: Master Joscelin of Soissons and the infinite words in the early twelfth century", in St. Read (ed.) *Sophisms in Medieval Logic and Grammar*. Acts of the Ninth European Symposium for Medieval Logic and Semantics, held at St Andrews, June 1990 (Nijhoff International Philosophy Series, 48; Dordrecht/Boston/London 1993), 64-85.

21. Dürr, Karl. 1951. *The Propositional Logic of Boethius*. Amsterdam: North-Holland.

Contents: Preface VIII; Abbreviations IX-X; Introduction 1; I. The sources of "De Syllogismo Hypothesico" 4; II. The effects of Boethius' propositional logic in the early scholastic period 16; III. Choice of metascience and metalanguage 19; IV. Analysis of "De Syllogismo Hypothesico" 30; V. Analysis of a section of Boethius' Commentary on Cicero's *Topics* 66; Appendix by Norman M. Martin 74-79.

Boe. = *Anitii Manlii Severini Boethi . . . opera, quae extant, omnia*. Basileae (1570).

"The text of the treatise "The Propositional Logic of Boethius" was finished in 1939. Prof. Jan Łukasiewicz wished at that time to issue it in the second volume of "Collectanea Logica"; as a result of political events, he was not able to carry out his plan.

In 1938, I published an article in "Erkenntnis" entitled "Aussagenlogik im Mittelalter"; this article included the contents of a paper which I read to the International Congress for the Unity of Science in Cambridge, England, in 1938 (Cf. Erkenntnis, vol. 7, pp. 160-168). The subject matter of this paper touched upon that of the above-mentioned treatise. Recently an article of Mr. René van den Driessche, "Sur le 'de syllogismo hypothetico' de Boèce", was published in the journal "Methodos" (vol. I, no. 3, [1949]). Mr. van den Driessche referred in this article to the article on propositional logic in the Middle Ages, which had appeared in "Erkenntnis". This reminded me of my yet-unpublished treatise on the propositional logic of Boethius." (From the *Preface*)

"§ 1. The Two Books of Boethius on the Theory of the Proposition.

It is the unique property of propositional logic that the variables which are used are propositional variables, i.e. variables whose values are propositions.

Among the logical writings of the man whom, for short, is called "Boethius" and whose full name is "Anicius Manlius Severinus Boethius", we find two which can be characterized as presentations of propositional logic.

The first of these is entitled "de syllogismo hypothetico" (on the hypothetical syllogism).

Incidentally, it should be noted that this title, as Samuel Brandt has shown, does not originate with Boethius, and it would be more correct to give the book the title "de hypotheticis syllogismis" (on hypothetical syllogisms) (Cf. Samuel Brandt: 'Entstehungszeit und zeitliche Folge der Werke des Boethius'. *Philologus* , Bd. LXII (1903) p. 238).

Nevertheless, one does well to quote the work under its incorrect title “de syllogismo hypothetico” as long as the old editions are in use.

The second book is a commentary on the *Topics* of Cicero. Here we do not consider the entire commentary, but only certain sections; we will indicate later which sections come into consideration (Cf. infra § 38)." (p. 1)

(...)

"§ 4. More Precise Characterization of Boethius'

Propositional Logic.

At the beginning of this treatise, we declared that the logic which is represented in the two works of Boethius, may be characterized as propositional logic. We add the remark that all of the sentences that have an independent value (i.e. that do not occur only as auxiliary sentences) in this logic were deductive rules, or, which comes to the same thing, inference schemes.

In this connection we recall the explanation of Clarence Irving Lewis in the book “Symbolic Logic”: “Exact logic can be taken in two ways: (1) as a vehicle and canon of deductive inference, or (2) as that subject which comprises all principles the statement of which is tautological” (Cf. ClarenceIrving Lewis and Cooper Harald Langford: *Symbolic Logic* (1932 p. 235). We can now say that the logic of Boethius belongs to the first of these two forms of exact logic. Boethius’ aim is not to set up sentences which are tautological, but rather to present all of the deductive rules."

(p. 3)

(...)

§ 38. The Three Enumerations of the Seven Conditional Syllogisms.

We now turn to the consideration of the form of propositional logic to be found in Boethius’ commentary on Cicero’s *Topics* .

At the beginning of the fifth book of this commentary, Boethius notes that he has treated all the hypothetical

sylogisms in another book; he obviously has “de syllogismo hypothetico” in mind (Cf. Boe., p. 823). The exposition which follows this remark covers more than the first half of the fifth book of the commentary; it constitutes that part of the commentary that is of interest to us here (Cf. *supra* , § 1).

In order to determine this section more precisely one can best indicate its beginning and its end. It begins with the words “de omnibus quidem hypotheticis syllogismis” (Cf. Boe., p. 823) and continues to the place immediately preceding the following words of Cicero, “proximus est locus” (Cf. Boe., p. 934).

Boethius notes that Cicero mentioned some *modi* (inference types). From the exposition that follows, it is to be assumed, that Boethius identifies the *modi* that Cicero mentioned with the system of the seven conditional syllogisms (Cf. Boe., p. 823). By conditional syllogisms we understand inference schemes.

At the place which Boethius has in mind, Cicero enumerates seven inference schemes. Boethius quotes this place in the fifth book of his commentary (Cf. Boe., p. 817). We will call the quotation of this place from Cicero’s *Topics* in Boethius’ commentary “the quotation”.

In the text of the commentary as given by the editions we find the seven conditional syllogisms enumerated three times. The first and the second enumerations precede the quotation, while the third follows it (Cf. Boe., p. 831-833). It may be mentioned that the second enumeration agrees so closely with the first, that it may be called a duplication of the first.

Propositional variables are used only in the third enumeration of the seven conditional syllogisms; the system of propositional variables which we called the simple system is used (Cf. *supra*, § 17). In all three enumerations each of the conditional syllogisms is illustrated by an example. These examples are expressions related to the inference

schemes; like the inference schemes, they contain functors and always contain a sign which can be identified with the functor “*igitur*”; they contain however no propositional variables, instead having simple, i.e. atomic, sentences. The examples of conditional syllogisms which Boethius gives with the first and second enumerations, are extremely simple and the two sequences agree almost completely member for member.

We will quote these examples in English; in this translation the English word “therefore” occurs instead of the functor “*igitur*” It seems desirable to divide the seven conditional syllogisms into four groups; we will divide them in such a way that the first and second modi constitute the first group, the third modus constitutes the second group, the fourth and fifth modi the third group and finally the sixth and seventh modi form the fourth group." (pp. 66-67)

22. Ebbesen, Sten. 1973. "Manlius Boethius on Aristotle's *Analytica Posteriora* ." *Cahiers de l'Institut du Moyen-Âge Grec et Latin* no. 9:68-73.

"A reference to a Boethian commentary on *Posterior Analytics* I is found in a thirteenth-century MS (Munich, clm 14246), but this is surely an error. The work referred to was really the translation of Philoponus' commentary that most schoolmen attributed to Alexander of Aphrodisias. I regret having called attention to the Munich MS in a small article of 1973 (*CIMAGL* 9: 68–73), and I beg my readers not to waste their time on looking up that article." S. Ebbesen, "The Aristotelian Commentator" in John Marenbon (ed.). *The Cambridge Companion to Boethius*, Cambridge: Cambridge University Press, 2009, p. 52.

23. ———. 1987. "Boethius as an Aristotelian Scholar." In *Aristoteles. Werk und Wirkung. Paul Moraux zum 65 Geburtstag gewidmet - Band 2: Kommentierung, Überlieferung, Nachleben*, edited by Wiesner, Jürgen, 286-311. Berlin: Walter de Gruyter.

Reprinted as *Boethius as an Aristotelian Commentator* in: Richard Sorabji (ed.), *Aristotle Transformed. The Ancient Commentators and Their Influence*, London: Duckworth, 1990, pp. 373-392.

Citations are from the reprint in Sorabji 1990.

"It has been suggested that the only material at Boethius' disposal was a copy of the *Organon* with marginal scholia, and that this collection of scholia is no longer extant. (14)

We may often be able to ascertain the remoter origin of one of the scholia Boethius knew, but we shall never know whether he deviated from his direct source in any way and the standard answer to the question 'Why does Boethius say this?' can only be, 'Because it was in his only source.'

The 'one source - no thinking' theory has the support of eminent scholars and it cannot be refuted by any means that I can think of. But neither can it be proved by any conceivable means short of finding the supposed manuscript of the *Organon* with the marginal scholia. To my mind, the circumstantial evidence in favour of this theory, though not negligible, is less than convincing. (15)

The observable facts are quite as easily explained on the assumption that Boethius had access to several Greek monographs and commentaries and that he followed the common practice of using for each work one main source while also exploiting secondary sources. It is an old discovery that this hypothesis works well in the case of the extant short commentary on the *Categories*, the only case in which we still have what may be the main source. Boethius acknowledges a debt to Porphyry (16) and actually keeps so close to the latter's extant minor commentary on the *Categories* (CAG 4, 1) that it is simpler to assume that he had direct access to a complete copy of it than to assume second-hand acquaintance by way of a book which also contained the post-Porphyrian material detectable in Boethius' commentary.

Granted that Boethius' main source was Porphyry's extant work, we can begin to examine the way he used it. As it turns out, he follows his predecessor to the extent of reproducing most of the questions he raised and the answers he gave, but not to the extent of reproducing long segments of his text in direct translation. Boethius expanded arguments which he found too compressed while curtailing or suppressing other passages. (17) In fact, he followed the procedure which his own remarks in this and other works indicate (18) -- and that procedure involved making choices. It looks as if it might be worth while to speculate about his possible motives for choosing as he did." (pp. 376-377; note 15, 17 and 18 omitted)

(14) J. Shiel, 'Boethius' Commentaries on Aristotle': *Medieval and Renaissance Studies* 4, 1958, 217-44, extensively revised in Chapter 15; id, 'Boethius and Eudemus', *Vivarium* 12, 1974, 14-17; id, 'A recent discovery: Boethius' notes on the Prior Analytics', *Vivarium* 20, 1982, 128-41.

(16) Boeth. in *Cat.* 160A; see n. 20 below.

24. ———. 2008. "Boethius on Aristotle." In *Greek-Latin Philosophical Interaction. Collected Essays of Sten Ebbesen Volume 1* , 107-114. Aldershot: Ashgate.

This chapter was written for the present volume, but to a considerable extent it recapitulates Ebbesen (1987).

"Anicius Manlius Boethius (d. c.525) was *the* great mediator between ancient Greek and medieval Latin philosophy. He completed a tremendous piece of work by translating all of the *Organon* (except, it seems, the *Posterior Analytics*) into Latin and writing commentaries as well as other companion volumes. It is remarkable that there are two commentaries of his on Porphyry and two on *Perihermeneias* , but only one on the *Categories* . Actually, there may have existed a second one on that work too, but at least it did not survive for the medievals to use. (2) As for the *Ars nova* , Boethius himself refers to a commentary on the *Topics* (3) of which

there is no trace in later times. It is uncertain whether he accompanied his translation of the *Prior Analytics* with a commentary (the question is discussed in Chapter 13 [Analysing Syllogisms or Anonymus Aurelianus 111 - the (presumably) Earliest Extant Latin Commentary on the Prior Analytics and its Greek Model , pp. 171-186] Boethius' monographs on categorical and hypothetical syllogistic, on divisions and on topical argumentation were intensely studied from the late eleventh to the early thirteenth century, and they left their mark on Latin logic long after they ceased to be standard reading. A commentary on Cicero's *Topics* was less influential.

Finally, it must be mentioned that Boethius composed treatises on the quadrivial arts: arithmetic, music, geometry (uncertain, not extant), and just possibly astronomy •as well. In one famous passage he himself reveals a grandiose plan to translate the whole of Aristotle and Plato. (4) Remarkable as the list of Boethius' accomplishments is, two lacunas stand out. There is no grammar at all and no proper treatise on rhetoric, only the somewhat related commentary on Cicero's *Topics* and the fourth book of *De topicis Differentiis* , which was actually used as a textbook of rhetoric in medieval Paris. We can only guess at the reasons, but quite possibly Boethius thought of grammar and rhetoric as sub-philosophic disciplines. After all, as opposed to logic and the quadrivial arts, grammar and rhetoric had traditionally been taught by their own professional teachers, not by philosophers. (5) Moreover, he may have felt that such existing handbooks as Donatus' *Ars* were sufficient for the grammatical needs of the Latin world, and there surely was no dearth of rhetorical treatises in the tongue of Cicero." (p. 108)

(...)

"So. the way I read Porphyry and Boethius, they shared the view that becoming a good Aristotelian is a necessary step on the way to becoming a good Platonist, and what you have

learned in the first step of your intellectual career does not become false when you ascend to a higher level -- you are just able to put it into a much wider context.

The medieval West inherited from late antiquity numerous texts that could help send people off on fanciful Neoplatonic stratospheric flights. The fact that Boethius provided them with a proper set of down-to-earth, but still interesting, logic books ensured that quite a few preferred safer and saner flights closer to the surface of mother earth, or at least tried to secure proper ground support before lifting off." (p. 114)

(2) See P. Hadot, "Un fragment du commentaire perdu de Boèce sur les *Catégories* d'Aristote dans le codex Bernensis 363", *Archives d'histoire doctrinale et littéraire du Moyen Âge* , 26, 1959, pp. 11-27.

(3) Boethius. *Top. Diff.* 2.8.8 (PL 64 1191A) and 4.13.2 (PL 64: 1216D).

(4) Boethius. *Comm. Int.* ed. 2a. Weiser, pp. 79-80.

(5) For the quadrivium as the philosophers' domain, see I. Hadot, *Arts libéraux et philosophie dans la pensée antique. Contribution à l'histoire de l'éducation et de la culture dans l'antiquité* . Seconde édition revue et considérablement augmentée. Paris: Vrin, 2005.

25. ———. 2009. "The Aristotelian Commentator." In *The Cambridge Companion to Boethius* , edited by Marenbon, John, 34-55. Cambridge: Cambridge University Press.

"The point, then, is that we have to start from the lowest level to work our way toward the higher. We have to learn our grammar before we can get a deeper understanding of language-related matters by studying logic.

We have to achieve a simplified understanding of logic before we can undertake an in-depth study. We have to know our logic properly before we can ascend to higher matters, such as Neoplatonic metaphysics, in the light of which our initial understanding of logic will appear primitive.

This way of looking upon things was not Boethius' invention. In its essentials it was already Porphyry's, it was what allowed Porphyry to include the study of Aristotle in a curriculum aimed at producing good Platonists ready to take leave of their bodily frame. As Aristotle's logic was supposed not to have trespassed on Plato's metaphysical territory, teachers of Aristotle need not and ought not Platonize him. Boethius' extant commentaries evince a decision to follow Porphyry, though he was clearly sympathetic to some of the more extravagant Neoplatonists – people of the stripe of Iamblichus, Syrianus and Proclus – and it makes one shudder to imagine what the "Pythagorean" exposition of the *Categories* that his extant commentary says he was contemplating was or would be like." (p. 51)

26. ———. 2011. "Boethius as a Translator and Aristotelian Commentator." In *Interpreting the Bible and Aristotle in Late Antiquity. The Alexandrian Commentary Tradition between Rome and Baghdad*, edited by Lössl, Josef and Watt, John W., 121-133. Farnham: Ashgate.
"Virtually the whole of Boethius' literary output – including his final *Consolation of Philosophy* – may be viewed as a Herculean effort to transfer Greek philosophical thought to Latin, but only his Latinizations of the works of the *Organon* were strictly speaking translations. The commentaries and companion volumes are free adaptations of Greek prototypes. Exactly how free is difficult to gauge because in all cases but one we are sure that we no longer possess any of the Greek texts he used. The exception is Porphyry's commentary on the *Categories*.
There is some scholarly disagreement about whether he used that text directly or only indirectly, but if he did have direct access to it, as I believe, he did not at all follow it slavishly. In any event, even if he made a very free use of his Greek sources, producing the commentaries and companion volumes involved a considerable amount of translation,

because he had to find out how to render all the technical terminology of his sources in Latin.

Boethius did not have to start from scratch. Already in the first century B.C., Cicero and Varro had coined Latin equivalents of many philosophical terms, and more had been added over the centuries. In fact, for most of the technical terms of logic Boethius could depend on his predecessors. He was probably the first to use *subalternus* and *subcontrarius* when dealing with the square of opposition, and he was almost certainly the first to translate ἄξιωμα 'axiom' as *maxima propositio*, which is the origin of the English – and pan-European – *maxim*. But more often than not he would use an existing translation. His problem was rather one of choice, because in several cases Latin usage was not uniform. (pp. 123-124)

(...)

"In the short run, Boethius' translations, commentaries and monographs met with no success, due to the collapse of the political structure and of higher schooling in the western part of the Roman empire shortly after his death. In the long run, he was immensely successful.

Use of his works began slowly in early Carolingian times, but by 1100 his translations of Porphyry, *Categories* and *Perihermeneias* were in common use in several schools, and so were his commentaries on those works and his handbook-like works. By about 1120 people were beginning to also use his translations of the *Prior Analytics*, the *Topics* and the *Sophistical Refutations*.

This laid the foundation for the Aristotelian scholasticism that was to dominate the study of philosophy in the West for some four centuries. It also meant that it was Boethius' choices that decided what was to become the technical vocabulary of Latin Aristotelian logic." (p. 124)

27. Eco, Umberto. 1984. "Signification and Denotation from Boethius to Ockham." *Franciscan Studies* no. 44:1-29.

"Boethius translates "semaînein" with "significare" but he follows the Augustinian line of thought according to which "significatio" is the power that a word has to arouse in the mind of the hearer a thought, through the mediation of which one can implement an act of reference to things. He says that single terms signify the corresponding concept or the universal idea and takes "significare"— as well as, less frequently, "designare"— in an intensional sense. Words are conventional instruments used to make known one's thoughts (*sensa* or *sententias*) (*In Per. Herm.* I).

Words do not designate *res subiectas* but *passiones animae*. The designated thing is at most called "underlying the concept of it (*significationis supposita* or *suppositum*)", see de Rijk 1967:180-181. (3)

As for "*denotatio* ," Boethius uses extensively "*nota* ," but we know how vague was the meaning of this term in the Latin Lexicon — at least as vague as the meaning of the equivalent Greek "*symbolon* ." It must be remembered that Boethius, in the translation of *De Interpretatione* used "*nota* " for both "*symbolon* " and "*semeîon* ," thus creating a first "sad tale of confusion". (pp. 5-6)

(3) in *Peri herm.* II, pp. 26-27, ed. Meiser, debating the question whether words refer immediately to concepts or to things, Boethius uses in both cases the expression '*designare* .' In II, p. 20 he says in the same context, "*vox vero conceptiones animi intellectusque significat*" and "*voces vero quae intellectus désignant*." In II, pp. 23-24, speaking of "*litterae, voces, intellectus, res*," he says that "*litterae verba nominaque significant*" and that "*haec vero (nomina) principaliter quidem intellectus secundo vero loco res quoque designant. Intellectus vero ipsi nihil aliud nisi rerum significativi sunt*." In *Arist. Categ.* col. 159 B4-C8, says that "*prima igitur illa fuit nominum positio per quam vel intellectui subiecta vel sensibus designaret*." It seems to me that "*designare*" and "*significare*" are taken as more or less equivalent. The real point is that first words signify

concepts and, because of that, and mediately, can be referred to things. Cf. on the whole question de Rijk (1967, II, I, p. 178 ff.) Nuchelmans (1973:134) remarks that even though Boethius also uses "significare," along with "designare, denuntiare, demonstrare, enuntiare, dicere" with an object-expression to indicate what is true or false, however when he uses the same terms with a person as a subject he means that someone makes known his opinion that something is or is not the case: "the definition of the *enuntiatio* or *propositio* as an utterance which signifies something true or false reflects the fact that in Aristotle's view it is the thought or belief that something is the case which is true or false in the primary sense. As Boethius puts it, truth and falsity are not in things but in thoughts and opinions and secondarily (*post haec*) in words and utterances— *in Cat.* 181b. Cf. also such a passage as in *In Per.* I, p. 42, 1" (Nuchelmans 1973:134).

References

De Rijk, L. M., ed., 1967. *Logica modernorum*, II, 1. Assen: Van Gorcum.

Nuchelmans, G., 1973. *Theories of the Proposition*. [Vol. I: *Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*]. Amsterdam: North-Holland.

28. Gili, Luca. 2015. "A neglected source of Boethius's *De syllogismo categorico*." *Mnemosyne* no. 68:304-307.
Abstract: "This paper shows that Boethius's *De syllogismo categorico* had among its sources Alexander of Aphrodisias's commentaries on the *Topics* and on the *Prior Analytics*. The first of these sources has been neglected by scholars until now. Boethius's usage of these sources shows the originality of his logical treatise."
29. Green-Pedersen, Niels Jørgen. 1984. *The Tradition of the Topics in the Middle Ages. The Commentaries on Aristotle's and Boethius' 'Topics'*. München: Philosophia Verlag.
Contents: Preface 9; Part I. The Sources of the Medieval Doctrine of the Topics 11; A. Aristotle's Works on the Topics

11; B. Boethius' Works on the Topics 39; Part II. The Medieval Approach to the Sources 83; A. Aristotle's *Topics* 85; B. Boethius' *De Differentiis Topicis* 123; C. The University Teaching 127; Part II. The Doctrine of the Topics in the Middle Ages 135; A. Introductory 135; B. The earliest Texts 139; C. The 12th Century 163; D. The 13th Century 223; E. The Topics and the Theory of Consequences 265; F. The 14th Century 301; G. The 15th Century 321; Part IV. General Conclusion 345; Appendix 1: Selection of Unprinted Texts 347; Appendix 2. List of Commentaries 381; A. Commentaries on Aristotle's *Topics* 383; B. Commentaries on Boethius' *De Differentiis Topicis* 418; References 433; Index 449; Summary in Danish 455-459.

"B. Boethius' Works on the Topics

1. Introductory

In chronological order the next work to discuss would be Cicero's *Topica*, which is the first work on the topics after Aristotle that has come down to us. I shall, however, proceed directly to Boethius's works, partly because an acquaintance with Boethius' doctrines contributes to a better understanding of Cicero. Partly also because there are no medieval commentaries on Cicero's *Topica*. Apparently this work was only influential on the teaching in the very early period, probably not much after c. A. D. 1050. The teachers of those days did not write commentaries, as far as we know, but only compendia or summaries of the texts they based their teaching on; or they added glosses to these texts. In a later chapter we shall see how Cicero's *Topica* - directly or indirectly - is the basis of the earliest medieval teaching about the topics which we know of. Yet even in these early years the medievals use not only Cicero's book, but also Boethius' commentary on it. All these facts suggest that at least in a medieval context it is better to consider Boethius before Cicero. The things which we need to know about Cicero can be set out in connection with Boethius or

with the discussion of the works which base their teaching upon Cicero.

Boethius wrote about the topics primarily in two works, the *Commentary on Cicero's Topica* (*In Ciceronis Topica*, ICT) and the monograph *De differentiis topicis* (DDT). The commentary on Cicero is the earlier of the two, as we can infer from references in the DDT back to the ICT and from remarks in the ICT about plans for the DDT. But the distance in time between the two is small, both were written in the last years of Boethius' life, i. e. after c. 520. (1)

Boethius also refers to a commentary which he claims to have written on Aristotle's *Topics*, (2) but such a work has not come down to us. As the references to it are found in the DDT and no references are found in the ICT, we may conjecture that the commentary on Aristotle's *Topics* was written in the period between the ICT and the DDT. On the other hand Boethius refers to his translation of Aristotle's *Topics* in the ICT, 3 and it is natural to assume that he wrote the commentary while working on the translation.

Boethius' commentary on Cicero's *Topica* (ICT) follows the text in Cicero's work continuously, but it is either preserved incompletely or it was never finished by Boethius, since it ends in the comments on Cicero's § 76. Cicero's work contains a prologue (§§ 1-5), an introduction (§§ 6-8), a summary statement of his list of loci (§§ 9-24), a detailed exposition of the same list (§§ 25-78), and finally a section of a more rhetorical character (§§ 79-100). The most interesting parts of the ICT are the rather long discussions about the nature and the division of the loci which Boethius has inserted before both Cicero's first and second enumeration of the loci. Further Boethius utilizes Cicero's second exposition of the locus 'from antecedents' etc. for a long discussion of conditionals and hypothetical syllogisms. We shall have occasion to look at these discussions more closely.

We need not know more about the contents of the ICT, but we shall instead turn to the DDT with which we must be well-acquainted in order to understand the medieval doctrine of the topics." (pp. 39-40)

(1) De Rijk (1964) pp. 151-154.

(2) Boethius, DDT II.1191 A; IV, 1216 D. - Cf. De Rijk 1964, p. 156.

(3) Boethius, ICT I, p. 280,40-41 (1052 A-B).

References

L. M. De Rijk 'On the Chronology of Boethius' Works on Logic. I-II", *Vivarium* , 2, 1964, pp. 1-49 and 125-162.

30. Huby, Pamela M. 1988. "Boethius vindicates Cicero as a logician." *Liverpool Classical Monthly* no. 13:60-61.
"Boethius' reading of Cicero's *Topics* 54 shows that he had a better text than we do, and thus makes more sense of Cicero's argument."
31. Lewry, Osmond. 1981. "Boethian Logic in the Medieval West." In *Boethius: His Life, Thought and Influence* , edited by Gibson, Margaret, 90-134. Oxford: Blackwell.
"Almost three centuries after his death, Boethius entered the school-room. With Alcuin of York as master and Charlemagne as pupil, a halting dialogue ensued. This *Dialectica* is a tenuous link between the learning of a member of the old Roman nobility, from the early sixth century, and the studious aspirations of the Frankish kingdom, at the end of the eighth. But the title is an ambitious one for these exiguous remains of classical culture, and even the presence of Boethius here is faint. In sixteen chapters, Alcuin rehearses the rudiments of the old logic. (1) He begins with Porphyry's *Isagoge* , for his account of the five universals, and ends with Aristotle's *Perihermeneias* , for the statement and its parts but, as his dedicatory verses to Charlemagne show, the categories are the core of his work, and for these, lacking the *Praedicamenta* of Aristotle himself, he had to turn to the Themistian paraphrase, the *De Decem Categoriis* , which he

ascribes to Augustine. The Pseudo-Augustine only omits matters of minor importance, but Alcuin received an account of the categories affected by transpositions and mixed with many non-Aristotelian elements. (2) The solid contribution of Boethius himself is in his translations of the *Isagoge* and *Perihermeneias* if there are borrowings from his commentaries and treatises, they are meagre. (3) Of the nineteen valid moods of the categorical syllogism, only four appear in the treatment of argumentation, and these, the moods of the first figure with their premisses interchanged, in a form derived from the *Perihermeneias* of Apuleius and not from the *De Syllogismis Categoricis* of Boethius. (4) The fifteen kinds of definition derive from a treatise which the Middle Ages attributed to Boethius, but this *Liber de Definitionibus* was in fact by Marius Victorinus, (5) as Boethius recognised in summarising its teaching. (6) They came to Alcuin through the *Institutiones of Cassiodorus*, (7) and it was sixth-century interpolations in the same source that gave Alcuin some second-hand knowledge of Boethius' *De Differentiis Topicis*. (8)" (pp. 90-91) (...)

"In the first half of the fifteenth century, however, a reaction against the influence of Boethius can be seen in Lorenzo Valla's preface to his *Dialecticae Disputationes*. His reference to 'eruditorum ultimus Boetius' and his question, 'How many were there after Boethius whom one would consider worthy to be called a Latin and not a Barbarian?', (150) may suggest more than a grudging recognition for his authority, but elsewhere Boethius is sharply criticised for his doctrine. (151) Valla also thinks that he was overrated by Albertus Magnus among the scholastics and Poggio among the humanists. (152) Despising Aristotle as a man who contributed nothing to civic life and lacked practical skills, Valla's endeavour was to bring logic back from a realm of abstractions to what he regarded as its proper concern, natural expression : in effect dialectic was to be reduced to

rhetoric. (153) This enterprise of reduction could not be carried through without a reform of terminology, and this led him, at the beginning of his work, to attack the teaching of the categories as it had been mediated by Boethius (154) and the Porphyrian hierarchy of substance. (155) His second book extended the reduction to propositional logic; his third to reasoning. Here he poured scorn on Boethius and those who praise him, for their failure to see that the fourth figure syllogisms are but indirect forms of the first. (...) In this humanist reaction the authority of Cicero and Quintilian is preferred to that of Boethius." (pp. 120-121) (...)

"The preface to the Basel edition of 1570 [*of the works of Boethius*] tempers the criticism of Valla, but passes quickly over the logic to celebrate the achievements of Boethius in mathematics and music. The dedicatory letter recalls the aims of Boethius himself as a translator and commentator and praises him for opening to the Latin world what Aristotle had hidden from many, and judiciously weighing the opinions of antiquity. Regret is voiced that nothing survives of his commentaries on the *Analytica* and *Topica* of Aristotle. Of the logical works, it is the double commentary on the *Perihermeneias* which is particularly valued, and the 'four beautiful books *De Differentiis Topicis* , by which he distinguished dialectical from rhetorical topics'. Mention is still made, though, of the works on the syllogistic and division, (159) so that even if rhetoric had made its inroads here too, the legacy of the Boethian logic was still prized for its own sake." (p. 122)

(1) PL Cl. 949B-80B.

(2) See L. Minio-Paluello, 'Note sull'Aristotele Latino Medievale: XV. Dalle Categoriae Decem pseudo-Agostiniane (Temistiane) al Testo Vulgato Aristotelico Boeziano', in *Opuscula: The Latin Aristotle* (Amsterdam, 1972), pp. 448-58, and the same author's edition of the text, *Pseudo-*

Augustini Paraphrasis Themistianana (AL i. 1-5, pp. lxxvii-xcvi, 129-75).

(3) See A. van de Vyver, 'Les Etapes du Développement Philosophique du Haut Moyen-Age', *Revue Belge de Philologie et d'Histoire* VIII (1929), 425-52, and the account of Alcuin's work there, pp. 430-2.

(4) See M. W. Sullivan, *Apuleian Logic* (Amsterdam, 1967), pp. 178-82.

(5) Ed. T. Stangl (Munich, 1882); reprinted in P. Hadot, *Marius Victorinus* (Paris, 1971), pp. 329-65.

(6) *In Cic Top* III (PL LXIV, 1098A).

(7) *Cassiodori Senatoris Institutiones* II. 14, ed. R. A. B. Mynors (Oxford, 1937), pp. 119-24.

(8) PL LXX. 1175D12 1190C4.

(150) Quotus enim quisque post Boëtium fuit qui Latinus dici mereatur et non Barbarus: Laurentius Valla, *Opera Omnia* (Basel, 1540), reprinted Turin, 1962, i. 644.

(151) See *Elegantiae* VI, xxxiv (ed. cit., i. 215-16); *De Voluptate* III. xi (ed. cit., I. 973); *Ep. ad Ioannem Aretinum* (Venice, 1503, reprinted Turin, 1962, II. 122).

(152) See *In Pogium Antidoti* II (ed. cit., I. 292-3).

(153) See G. di Napoli, *Lorenzo Valla: Filosofia e Religione nell'Umanesimo Italiano* (Rome, 1971 *Uomini e Dottrine* XVII), pp. 57-99.

(154) *Dialectica* I. i (ed. cit., i. 645-6).

(155) *Ibid.*, I. vii (i. 646-7).

32. Magee, John. 1989. *Boethius on Signification and Mind*. Leiden: Brill.

Contents: Acknowledgements IX; Sigla X; Abbreviations and Editions XI; Introduction 1; I. Aristotle: *Peri Hermeneias* I, 16a3-9; 7; II. Boethius' Translation 49; III. Orandi Ordo 64; IV. Cogitabilis Oratio 93; Afterword 142; Bibliography 150; Index Locorum 155; Index Nominum et Rerum 162-165.

"The following is a study of Boethius' thought on signification which attempts to situate that thought

historically and to evaluate it philosophically. Its justification is found in the present lack of any systematic examination of the subject, (1) and in the intrinsic importance of that subject for the history of later ancient and especially of medieval thought. It is frequently the case that medievalists will have read Boethius' philosophical works with an eye only to subsequent developments; those classicists who bother with him at all will probably have done so out of an interest (one which shows signs of increasing) in investigating the very last stages in the history of ancient learning. That Boethius has sometimes run afoul of misunderstandings originating on both sides of the academic fence can, I believe, be explained in part by the fact that his work as both commentator *and* translator sets him somewhat apart in the history of ancient commentary on Aristotle. As a commentator, he has tended to be ignored by those classical scholars who are accustomed to the massive and weighty Greek commentaries from the likes of Alexander (late 2nd-early 3rd c. AD) and Simplicius (6th c. AD). As a translator, he has sometimes obscured, for the medievalists not working in the Greek tradition of commentary (as indeed for the many medieval writers who depended upon his translations), the prehistory of certain ideas expressed during the course of his commentaries on the texts of what in the Middle Ages came to be known as the *logica vetus*. "

(...)

"The present work is divided into four chapters, taking as its starting point the lines of Aristotle's *Peri Hermeneias* around which Boethius' theory of signification turns. The first chapter of the study plunges in *medias res*, and for that the reader's patience is requested. The Greek text is both difficult and compressed, and necessarily brings into consideration questions of the history of transmission and commentary, as well as numerous aspects of Aristotle's thought both in this and in other works. But since Boethius

translated either all or part of the *Peri Hermeneias* before commenting upon it, and then revised the translation for the second commentary; and since in his translation, as in all translations, there is an element of “commentary” upon the meaning of the original, it has been thought necessary to come to a clear understanding of what Aristotle wrote before proceeding to the translation and commentaries. After careful examination of the Greek passage and of the questions it poses, there follows in the second chapter an analysis of Boethius’ Latin translation of the same, and of the interpretation implicitly contained therein. The third and fourth chapters treat of Boethius’ commentaries on the passage, as seen from two points of view: (a) from the way in which Boethius thinks Aristotle to have disposed or ordered the four things (*res, intellects, vox, litterae*) laid down in the context of the doctrine of *Peri Hermeneias* 16a3-9; (b) from the point of view of the theory of cognition Boethius develops in support of the above. The question Boethius ultimately poses for our consideration is: How are the operations of the passive mind converted into words and statements that can be spoken aloud? If his commentaries allow no certain answer to this question, important ground will nevertheless have been gained in studying carefully the way in which Boethius introduces the problem, and then in suggesting the solution which seems most consistent with what is said in his commentaries." (pp. 1-2)

(1) There are two valuable studies by L.M. De Rijk, as well as a short article by K. Berka. Beyond this, however, very little has come to my attention. [De Rijk 1981 and 1988, Berka 1968]

33. ———. 1994. "The text of Boethius' *De divisione* ." *Vivarium* no. 32:1-50.

"The *De divisione* of Boethius (= B.) has come down to us in nearly 200 MSS dating from the 10th c. onward. The treatise maintained a position of some importance in the medieval schools and as a result the textual tradition is

highly complex, although it remains unstudied for the most part. L. Minio-Paluello investigated and compared some of the early MSS in the course of editing a fragment of B. 's revised *Topics* translation that sometimes circulated as part of *De divisione* , and he put forward tentative conclusions as to the bearing of his findings on the history of the transmission of *De divisione* itself. In what follows I undertake to examine the earliest extant MSS of *De divisione* known to me, and to reconsider Minio-Paluello's hypothesis concerning the early period of transmission. The study is in three parts: (a) analysis of the evidence indicating a lost ancient "edition" of *De divisione* , (b) the text of the treatise as transmitted to us by the oldest MSS; (c) a handlist of MSS containing *De divisione* ." (p. 1)

34. ———. 1997. "Boethius, *De divisione* 875–76, 891–92, and Andronicus Rhodius." In *A Distinct Voice. Medieval Studies in honor of Leonard E. Boyle, O.P.* , edited by Brown, Jacqueline and Stoneman, William P., 525-560. Notre Dame: University of Notre Dame Press.

35. ———. 2010. "On the Composition and Sources of Boethius' Second *Peri hermeneias* Commentary." *Vivarium* no. 48:7-54.

Abstract: "The paper is in three parts, prefaced by general remarks concerning Boethius' logical translations and commentaries: the text of the *Peri Hermeneias* as known to and commented on by Boethius (and Ammonius); the organizational principles behind Boethius' second commentary on the *Peri Hermeneias* ; its source(s). One of the main purposes of the last section is to demonstrate that the *Peri Hermeneias* commentaries of Boethius and Ammonius are, although part of a common tradition, quite independent of one another, and special consideration is given to the question of how Boethius interpreted and shaped the doxographical material concerning Aspasia, Herminus, and Alexander that had been handed down to him by Porphyry."

"Sifting through the interpretations of earlier commentators was painstaking and laborious, Porphyry's interpretation of 19b22-24 alone requiring, as we have seen, seventeen pages of commentary. By about the year 515 Boethius' attention must have been turning toward other projects, to new translations and commentaries, the theological tractates, logico-rhetorical monographs, and so on. If the *Peri Hermeneias* were allowed to consume so much time and energy, what would become of the rest of the *Organon* and Aristotle, not to mention Plato? Even for a treatise as rich and complex as the *Peri Hermeneias* Boethius may have had finally to calculate his "point of diminishing returns." He may have grown impatient with the project, his copy of Porphyry may have failed, or both. Had he known of the premature end that awaited him, he might have thought differently about how to weight the commentary, might have sought compensation in other projects for problems left unsolved in connection with the *Peri Hermeneias* ; but as it is, he left a work which, despite its imperfections, has proved to be one of his most fascinating and influential." (p. 54)

36. ———. 2011. "Preliminary Observations on the Textual Tradition of Boethius' First *Peri Hermeneias* Commentary." In *Logic and Language in the Middle Ages: A Volume in Honour of Sten Ebbesen* , edited by Fink, Jakob Leth, Hansen, Heine and Mora-Márquez, Ana María 13-26. Leiden: Brill.

"In editing the first of Boethius' two commentaries on Aristotle's *Peri Hermeneias* Carl Meiser essentially worked from a single witness, F (below), which he ranked both *antiquissimus* and *optimus* . (1) Readings from three other munich manuscripts, e (MS Bayer. Staatsbibl. clm 14401, s. XI), M (below), and T (MS Bayer. Staatsbibl. clm 18479, s. XI), he reported *perpetuo more* but with varying degrees of accuracy. (2) He further consulted two st. Gall manuscripts, G (below) and S (MS Stiftsbibl. 817, s. XI-XII)

omnibus locis paulo difficilioribus — citing them only infrequently, however, in his critical apparatus. from *Peri Hermeneias* 17b20 on, F preserves excerpted lemmata, and Meiser correctly recognized that the supplemented versions found in other witnesses violate Boethius' intention. (3) But F is in fact neither *antiquissimus* nor *optimus*, and Meiser's edition suffers from a particular failure to distinguish between the three versions of Boethius' *Peri Hermeneias* translation, two of which form his commentary lemmata. Hence a full assessment of the evidence seems called for. In what follows, I hope to shed some light on certain salient characteristics of the textual tradition." (p. 13)

(1) Boethius, *Commentarii in librum aristotelis περι ερμηνείας*, *pars prior versionem continuam et primam editionem continens*, ed. C. Meiser (Leipzig: Teubner, 1877), pp. VIII-X.

(2) Cf. J. Magee, 'On the Composition and sources of Boethius' second *Peri Hermeneias* Commentary', *Vivarium* 48 (2010), 15, n. 32.

(3) Above, n. 1; cf. Aristotle, *De interpretatione vel Periermenias: Translatio Boethii*, ed. L. Minio-Paluello, AL 2.1 (Bruges: Desclée de Brouwer, 1965), pp. XI; LIII.

[MS F = Munich Bayer. Staatsbibl. clm 6374, s. IX

MS M = Munich Bayer. Staatsbibl. clm 14377, s. X-XI]

37. Magnano, Fiorella. 2013. "Boethius: the Division of Logic between Greek and Latin Traditions." In *Ad notitiam ignoti. L'Organon dans la translatio studiorum à l'époque d'Albert le Grand*, edited by Brumberg-Chaumont, Julie, 141-171. Turnhout: Brepols.

"Basically Boethius's division of logic is the foundation of a large number divisions of logic belonging to other medieval philosophers as Peter Abaelard and Albert the Great; for this reason it is extremely important to understand first of all how Boethius developed and understood his own division, and in this paper I will explore just these aspects of

Boethius's logical works. Thus, first I will describe Boethius's two divisions of logic presented in his *Isagoge* commentaries. I will then look at his mature attempt to merge the Greek heritage of Aristotle with the Latin heritage of Cicero. Finally, I will focus on Boethius's own division of logic, in order to observe where the art of the topics is exactly placed. To better achieve my goals, it will be necessary to use several diagrams through which the reader can better visualize these complex aspects of Boethius's logical thought." (pp. 142-143, note omitted)

(...)

"Conclusion.

In short, in Boethius's view the *Topics* is the foundational discipline for the dialectician, the rhetorician, and the philosopher, precisely because it is the only way to discover the starting points of all types of argumentation. Boethius arrives at this view through combining in a particularly ingenious and original way the division of logic and the sciences more generally descended from the Aristotelian and Ciceronian, the Greek and the Latin traditions. It is necessary to think of this endeavor as a mosaic composed of many pieces, because combination of the two divisions of logic is only one stage of a much larger project, and the instruments used to carry out this plan are numerous. In his second commentary on the *Isagoge*, Boethius began to stress that this book is also indispensable in order to understand Cicero's *ratio disserendi*. As regards the art of the topics, he translated and commented on Aristotle's *Topics* and, after having commented also on Cicero's *Topics* he stressed the original axiomatic nature of Ciceronian *loci*, in order to bring out their dialectical value — a process completed in the third book of the *De topicis differentiis* where the Ciceronian *loci* are presented as dialectical *loci*. Finally, after having shown the substantial agreement of Cicero's division of logic (*ratio disserendi*) with that directly attributed to Aristotle and called λογική, he also

tried to show the agreement between Themistius's and Cicero's divisions of the topics, i.e. the Greek and the Latin traditions on the topics.

All these considerations allow us to conclude that in the fundamental reorganization of the entire logical material of antiquity made by Boethius, it is possible to discern his intention not only to rehabilitate the dialectical value of the topics, but also to return them to the centrality that they had in the authentic Aristotelian system. In this respect, Boethius does not simply repeat a neo-platonic thesis, because no neo-platonic philosopher gave, as far as know, real attention to Aristotle's *Topics*. On the contrary, Boethius re-established their use, and this is one of the most important aspects of Boethius's own contribution to the development of logic. The importance of this cultural phenomenon was really enormous, since this division of logic, like this role of the topics, were the specific ways in which philosophers received and used them in the Middle Ages." (pp. 170-171, note omitted)

38. Maloney, Thomas S. 2003. "Boethius on Aristotle on the Division of Statements into Single/Multiple and Simple/Composed." *Carmina Philosophiae* no. 12:49-74.

39. Marenbon, John. 2003. *Boethius*. Oxford: Oxford University Press.

Contents: Abbreviations of Boethius's Works XV; 1 Introduction 3; 2 Life, Intellectual Milieu, and Works 7; 3 Boethius's Project: The Logical Translations and Commentaries 17; 4 The Logical Textbooks and Topical Reasoning: Types of Argument 43; 5 The *Opuscula Sacra* : Metaphysics, Theology, and Logical Method 66; 6 The *Consolation* : The Argument of Books I-V.2 96; 7 The *Consolation* , V.3-6: Divine Prescience, Contingency, Eternity 125; 8 Interpreting the *Consolation* 146; 9 Boethius's Influence in the Middle Ages 164; Notes 183; Bibliography 219; Index Locorum 237; General Index 243-252.

"As a translator, Boethius was extremely literal, sacrificing Latin style, of which the *Consolation* shows his mastery, to precision. So far as possible, he follows the word order of the Greek and tries to render each word, even the particles. The result, though grammatical, is often awkward and heavy, but it is accurate — although there are some cases where his choice of word and phrasing does betray his own, particular interpretation of the text. (6) He seems to have revised each of his translations, and there is evidence of two forms for all of them except the *Sophistical Refutations* . (7) As a commentator, again Boethius concentrated on logic, although he did apparently write some sort of glosses or commentary to Aristotle's *Physics* . (8)

His work as an exegete stretched less widely over Aristotelian logic than his translations: he provided, as already mentioned, two commentaries each for the *Isagoge* and *On Interpretation* , one (or perhaps two) for the *Categories* , a commentary on Cicero's *Topics* , 9) very probably a commentary on (Aristotle's) *Topics* and some glosses, at least, for the *Prior Analytics* . (10) He also wrote a set of logical monographs, mainly on different sorts of argument (see chapter 4).

Since Boethius's working life was unexpectedly and violently curtailed, his failure to complete his original plan cannot be taken as proof that he did not propose it in earnest. Still, he seems to have given logic the priority and was willing in this area to go beyond the project he had set out, writing double commentaries and logical monographs, rather than hurrying on to Aristotle's nonlogical works and to Plato."

(7) In the case of the *Categories* , the two versions that survive are Boethius's final version and a 'composite' version, which is probably an earlier draft by Boethius, improved by using the lemmata of his commentary (close to his final version of the translation); see Asztalos (1993) 371-72. There is a very clear summary of scholarship on Boethius's translations in Chadwick (1981) 131-41; the

fundamental work was done by Minio-Paluello — see Minio-Paluello (1972) and the introductions to the *Aristoteles Latinus* editions (*Aristoteles Latinus* , 1961–).

(8) See Chadwick (1981) 139, who cites *2InDI* 190:13, 458:27 and *TC* 1152B.

(9) I discuss this commentary in chapter 4 below, because it is closely related to Boethius's treatise on topical reasoning.

(10) As Obertello (1974) 229 has noted, Boethius refers to a commentary by him on Aristotle's *Topics* in his *On Topical Differentiae* , 1191A, 1216D. But none has survived. He also clearly refers to having expounded 'the *Analytics* ' (cf. Obertello (1974) 229–30); Minio-Paluello has discovered marginal annotations in a medieval manuscript of the *Prior Analytics* which, he argues, are Boethius's: see *Aristoteles Latinus* (1961–) III.1–4, lxxix–lxxxviii and (for edition of the scholia) 295–372.

References

Asztalos, M. (1993) 'Boethius as a Transmitter of Greek Logic to the Latin West: The Categories', *Harvard Studies in Classical Philology* 95, 367–407.

Chadwick, H. (1981) Boethius. *The Consolations of Music, Logic, Theology, and Philosophy* (Oxford; Oxford University Press).

Minio-Paluello, L. (1972) *Opuscula: the Latin Aristotle* (Amsterdam; Hakkert).

Obertello, L. (1974) *Severino Boezio* (Genoa; Accademia Ligure di Scienze e Lettere).

40. ———. 2008. "Logic before 1100: The Latin Tradition." In *Mediaeval and Renaissance Logic* , edited by Gabbay, Dov and Woods, John, 1-63. Amsterdam: Elsevier.
See pp. 6-21: 2.2 Boethius 6; Boethius the Translator 7; The Neoplatonic Aristotelian Tradition 8; Boethius and the Commentary Tradition 9; Boethius's Logical Treatises 14; Boethius and Topical Argument 18; Boethian Logic and its Survival 20-21.

"Boethius is by far the most important figure in the ancient tradition of Latin logic, but it is important to realize that the Boethian Tradition was not the only ancient Latin one. The logic of the earlier Latin authors, along with, or transmitted by, later encyclopaedic accounts, provided a separate tradition, which would be the one on which, more than Boethius, medieval logic depended in the period up to the late tenth century. It is in the eleventh century that the Boethian Tradition begins to dominate (See §4 below). The twelfth century was the Golden Age of Boethian Logic: the six works that formed the core of the logical curriculum were Boethius's monographs and his translations of the *Isagoge* , *Categories* and *On Interpretation* , which were taught making extensive use of his commentaries. And the *Prior Analytics* and *Sophistical Refutations* , also in his translation, began to be known.

As a result of the introduction of the whole range of Aristotle's writing and its adoption, by the mid-thirteenth century, as the Arts course in the universities, and with the development of the *logica modernorum* , branches of logic newly devised by the medieval logicians themselves, Boethian Logic became less important in the thirteenth and fourteenth centuries, although his translations continued to be used by all students of logic, and some outstanding theologians, such as Albert the Great, Aquinas and William of Ockham, made some use of his commentaries.

Moreover, *On Division* and *TD* [*De Topicis differentiis*] remained part of the standard university logical collections — and commentaries were even written on *TD* in the thirteenth century.

The monographs on categorical syllogisms were no longer useful now that the *Prior Analytics* itself was known, and the treatise on hypothetical syllogisms too was forgotten [see C. J. Martin. Denying Conditionals: "Abaelard and the Failure of Boethius' Account of the Hypothetical Syllogism", *Vivarium* , 45, 153-68, 2007.].

41. Martin, Christopher J. 1991. "The Logic of Negation in Boethius." *Phronesis* no. 36:277-304.
"Boethius' *de Hypotheticis Syllogismis* is by far the most extensive account of the conditional and its logic to have survived from antiquity. A rather obscure and tedious work, it has puzzled commentators from Peter Abaelard to Jonathan Barnes. Most of the difficulties that they have had in extracting the principles of Boethian logic seem to me to follow from the assumption that what he offers is an account of the application of propositional operators to propositional contents. Though generally not made explicit by modern historians, the concepts of propositional content and propositional operation are nevertheless presupposed by the symbolic apparatus which they typically use to represent the claims of ancient and mediaeval logics. I will try to show that an examination of Boethius' theory of language forces us to give up the assumption that his logic is propositional and that when we do so his remarks on compound propositions turn out to be rather less mysterious than they have seemed." (p. 277)
42. ——. 1999. "Non-reductive Arguments from Impossible Hypotheses in Boethius and Philoponus." *Oxford Studies in Ancient Philosophy* no. 17:279-302.
"While there seems to be no record of an ancient debate over the paradoxes of strict implication anticipating those of the twelfth and twentieth centuries, we can, I think, advance our understanding of ancient attitudes to conditionals with antecedents acknowledged to be impossible by considering some hitherto neglected remarks made by Boethius. I shall try to show in the present paper that at least in late antiquity some philosophers were happy to introduce acknowledged impossibilities as hypotheses and to draw inferences from them without any suggestion that there might be indefinitely inflationary consequences. By these philosophers at least, the conditional was understood relevantistically." (p. 281)

43. ———. 2009. "The Logical Textbooks and their Influence." In *The Cambridge Companion to Boethius*, edited by Marenbon, John, 56-84. Cambridge: Cambridge University Press.

"The time at which Boethius wrote was not a great one in the history of logic and he himself was certainly not a great logician. His importance lies rather in acting as an intermediary between the logicians of antiquity and the those of the Middle Ages. With his translations (1), commentaries (2) and independent logical works (3) Boethius provided mediaeval philosophers with most of what they knew about ancient logic and so with the foundations upon which mediaeval logic was built. The most important parts of those foundations were the metaphysics of substance and semantics of common names which could be extracted from Boethius' commentaries on the *Isagoge*, *Categories*, and *De interpretatione*, his account of conditional propositions in *De hypotheticis syllogismis*, and his treatment of topical argumentation in *De topicis differentiis*. Boethius' own peculiar contribution to the history of logic was an exposition of the hypothetical syllogism which, for the reasons we will consider here, would play no role in the development of logic after the middle of the twelfth century." (p. 56)

(1) Boethius' translations of Porphyry's *Isagoge*, and Aristotle's *Categories* and *De interpretatione*, were known throughout the Middle Ages. His translations of the *Sophistical Refutations*, *Topics* and *Prior Analytics* were rediscovered during the first half of the twelfth century.

Boethius' translation of the *Posterior Analytics* (if he made one) apparently did not survive into the Middle Ages.

(2) On the *Isagoge* (1IS, 2IS), on the *Categories* (CAT), on *De interpretatione* (1IN, 2IN), on Cicero's *Topica* (TC).

(3) On the categorical syllogism covering the material dealt with in *Prior Analytics* I.1–7 (ISC and SC), on topical

inference (TD), on the hypothetical syllogism (SH), on division (D).

44. ———. 2011. "De Interpretatione 5-8: Aristotle, Boethius, and Abelard on Propositionality." In *Methods and Methodologies. Aristotelian Logic East and West, 500-1500*, edited by Cameron, Margaret and Marenbon, John, 207-228. Leiden: Brill.

"Boethius' commentaries on *de Interpretatione* provided the Middle Ages with their introduction to the theory of meaning. Boethian semantics is developed on the basis of the distinction made by Aristotle in *De Interpretatione* 1, between the signification of terms and that of affirmations and negations – defined, remember, as the species of simple assertions. On this account of them affirmations signify mental states in which the mental items signified by their component significant terms are combined and negations signify mental states in which they are separated. Missing in the theory is an account of compound propositions showing how their meanings are obtained from the meanings of their components. Such an account requires a notion of unasserted propositional content. With it we may also locate what is common to different speech acts and explain how it is that they differ. The relevant differences are the differences in what we now call their force." (p. 211)

45. Martin, John N. 1989. "A Tense Logic for Boethius." *History and Philosophy of Logic* no. 10:203-212.

Reprinted as Chapter 5 in: J. N. Martin, *Themes in Neoplatonic and Aristotelian Logic. Order, Negation and Abstraction*, Aldershot: Ashgate, 2004, pp. 53-63.

Abstract: "An interpretation in modal and tense logic is proposed for Boethius' reconciliation of God's foreknowledge with human freedom from *The Consolation of Philosophy*, Book V. The interpretation incorporates a suggestion by Paul Spade that God's special status in time be explained as a restriction of God's knowledge to eternal sentences. The argument proves valid, and the seeming

restriction on omnipotence is mitigated by the very strong expressive power of eternal sentences."

46. McKinlay, Arthur Patch. 1938. "The *De syllogismis categoricis* and *Introductio ad syllogismos categoricos* of Boethius." In *Classical and Mediaeval Studies in Honor of Edward Kennard Rand: Presented Upon the Completion of His Fortieth Year of Teaching.*, edited by Rand, Edward Kennard and Leslie, Webber Jones, 209-219. Freeport, N.Y: Books for Libraries Press.

47. Minio-Paluello, Lorenzo. 1942. "The Genuine Text of Boethius' Translation of Aristotle's *Categories* ." *Medieval and Renaissance Studies* no. 1:151-177.

Reprinted in L. Minio-Paluello, *Opuscula. The Latin Aristotle*, Amsterdam: Hakkert, 1972, pp. 1-27.

"It is known that Boethius wished to make translations of all the works of Aristotle and to comment on them, (1) but fate brought him to imprisonment and death before he was able to carry out his plan. That he translated the works on logic is certain. True, some scholars have doubted whether he translated the *Analytics*, *Topics* and *Sophistici Elenchi*, (2) but no one disputes that he both translated and commented on the *Categories* and the two books *De interpretatione*. This can be established with certainty by the references he makes elsewhere to these works of his, (3) by the tradition which begins with Cassiodorus (4) and is thus contemporary, and by the unanimity of the manuscripts of the *Commentaries*. (5) All scholars agree, and rightly so, on this point.

On another point, however, scholars have been entirely mistaken. They have held that the translation of the *Categories*, which from the tenth century onwards appears in innumerable manuscripts, now scattered over European and even American libraries, is by Boethius. This is the text, often printed in the fifteenth and sixteenth centuries and also reproduced in the *Patrologia Latina* of Migne and in the editions of Notker's works. (6)

It is the objet of the present study to prove that this is a mistake and to make known the genuine translation of Boethius, which until a short time ago remained buried in a small number of manuscripts. It is hoped also to correct certain errors arising out of this mistaken attribution and thus to throw fresh light on the history of the study of the *Categories* and of the translations from the Greek in the tenth century." (pp. 151-152)

(...)

"To conclude, I hope I have made clear the following points:

- (1) That a version of the *Categories* , whose author has hitherto not been recognized, is the work of Boethius;
- (2) that the version, which up till now has been ascribed to Boethius partly belongs to the tenth century; and therefore
- (3) that there is a mediaeval translation of Aristotle into Latin at a date much earlier than is commonly supposed."

(p. 26)

I wish to thank Dr. Decima Douie for her help in translating this article, and the Editors of this Journal for their criticism and advice.

- (1) 'Ego omne Aristotelis opus, quodcumque in manus venerit, in Romanum stilum vertens eorum omnium commenta latina oratione perscribam . . .' (*Comment. Second, in Arist. De interpret.* 79, 16 ff. Meiser). P. Mandonnet (*Siger de Brabant* , Fribourg 1899, xxiv f.) alone believes that Boethius had really translated all Aristotle, and quoting Migne (!) Sstates that 'on possède les commentaires de Boèce sur tous les livres de la logique'.

- (2) E.g. M. Grabmann, *Gesch. d. schol. Meth* . II, 71. Even he, however, recognised the value of the references of Boethius to his translations (*In top. Cic* . PL 64 col. 1051; 1052; *De diff. top* . 1173; 1184; 1193; 1216). On the question of the authorship of the translations of these works preserved under the name of Boethius, see B. Geyer, *Die alten lat. Uebersetz. d. arist. Analytik, Topik und Elenchik* (Philos. Jahrb. d. Görres-Gesellsch. 30 [1917] 25 ff.); C. H.

Haskins, *Studies in the history of mediaeval science* , Cambridge Mass. 1927, p. 228 ff.; M. Grabmann, *Forsch, üb. d. lat. Arist.-Uebersetz. d. XIII. Jahrh.* (BGPM XVII, 5-6, p. 130); id., *Bearbeitungen u. Ausleg. d. arist. Logik aus d. Zeit v. Abaelard bis Petrus Hisp.* (Abh. Preuss. Akad. 1937), p. 10; E. Franceschini, *Aristotele nel Medio Evo latino* (Atti del IX Congr. naz. di filos., Padova 1934-35, p. 5 ff.).

(3) See S. Brandt, *Entstehungsz. u. zeitl. Folge d. Werke von Boethius* (Philologus, N. F. 16 [1903] 141-154 and 234-275).

(4) *Variae* I 45, cap. 4 f. *Institut.* II 18 (p. 128 ed. Mynors, see Introduction xxviii); *Anecdoton Holderi* (ed. Usener), p. 4. On the question of Cassiodorus' testimony see below, Appendix.

(5) The incipit of the *Commentary to the Categories* in almost every manuscript is : 'Anicii Manlii Severini Boethii, viri clarissimi ex consulum ordinibus editio prima super *Categorias* a se verbum de verbo translata e graeco in latinum'; and the incipits of the two *Commentaries on the De interpretatione* are nearly the same.

(6) At least 350 manuscripts of the *Categories* are till preserved. Not less than 24 editions were published in the 15th century (see *Gesamtkatal. d. Wiegendr.* nos. 2335-2342; 2390-2393; 2396-2400; 2406-2410; 4511-4512). In the *Patrologia* of Migne the translation is only printed as *lemmata* to the *Commentary* (voi. 64 col. 159-294). After editions by Graff and Hattemer, a critical edition of Notker's works was given by P. Piper (*Die Schriften Notkers und seiner Schule* , Freiburg 1882); the commented and translated text of the *Categories* is in vol. I, 367-495. [Minio-Paluello published the critical editions of Boethius' translation of Aristotle's *Categories* in 1961 (*Translatio Boethii*).]

48. ———. 1945. "The Text of the *Categoriae* : The Latin Tradition." *Classical Quarterly* no. 39:63-74.

Reprinted in L. Minio-Paluello, *Opuscula. The Latin Aristotle*, Amsterdam: Hakkert, 1972, pp. 28-39.

"The Latin versions of Aristotle's *Categoriae* have never received much attention from the editors of the Greek text. J. Th. Buhle (*Arist. Op. Omn.* I, Bipont. 1791) and Th. Waitz (*Arist. Organ.* I, Lpz., 1844) availed themselves of Latin texts, but in a very unsatisfactory way; and since then the Latin field has remained unexplored throughout the last hundred years, in which both Hellenists and Orientalists have done much to increase our knowledge of the textual tradition of the *Categ.* It is the purpose of these pages to give a summary account of the Latin tradition and to contribute to a revision of the Greek text by a collation of Boethius' recently discovered translation with the best printed Greek and Oriental sources.

49. ———. 1957. "A Latin Commentary (? translated by Boethius) on the *Prior Analytics* and its Greek sources." *Journal of Hellenic Studies* no. 77:93-102.
Reprinted in L. Minio-Paluello, *Opuscula. The Latin Aristotle*, Amsterdam: Hakkert, 1972, pp. 347-356.
"Cod. Florence Bibl. Nazion. Centn Conv. Soppr. J.VI.34—formerly in Niccolò Niccoli's and St. Mark's libraries—written in a beautiful French hand of c. a.d. 1150-1200—contains the second edition of Boethius's translation of *Pr. An.* (1) Many scholia, written on the margins and between the lines by the same calligraphic hand which wrote the Aristotelian text or by a hand very similar to and contemporary with it, accompany the translation in this MS. They are mainly concentrated in about one-half of the work, viz. in book I.23 -30 (400-463) and book II (52a-70b); quite a few accompany I. 1,5-6,30-45 (24a, 27b-28a, 46a-50a); almost none is to be found in I.10-14,17-22 (30b7-33b25, 37a25-40b10). Arrangement and writing suggest that the scribe intended to give the reader Aristotle's text together with what was available to him of an authoritative commentary.

The scholia range, in nature and extent, from short glosses on single words or phrases and short summaries of sections of Aristotle's work to detailed explanations and doctrinal developments of important or difficult passages. Here and there carefully drawn diagrams illustrate logical rules and geometrical examples." (p.93)

(...)

"The Florentine MS. is quite unique among all the Latin manuscripts of *Pr. An.* . It is the only one, out of about two hundred and seventy, that contains—and contained—only the *Pr. An.* ; out of a hundred and twenty so far examined, it is the one which seems to contain the second, and very rare, edition of Boethius's translation in its purest form, and the only one which contains the 'corpus' of Greek scholia translated into Latin; (21) the paleographical characteristics—big letters throughout, even for the scholia, spaciousness, very careful transcription—suggest that we are in the presence of a library copy of an important text of the past. The attribution to Boethius remains hypothetical; but the linguistic argument in its favour, if expounded in detail, might prove very strong; our other arguments strengthen it. No argument against this attribution has so far suggested itself." (p. 102)

(21) Only scanty fragments from the scholia are also preserved in two or three of the many manuscripts inspected. The only important exception is in the figure of the 'pons asinorum', which exists in most MSS.; but it is likely that Boethius has included it in the text of Aristotle itself, as it appears in Greek copies of *Pr. An.* independently of any commentary or scholia.

50. Nikitas, Dimitrios Z. 2012. "'Exemplum logicum Boethii': reception and renewal." In *Greek into Latin from Antiquity until the Nineteenth Century* , edited by Glucker, John and Burnett, Charles, 131-144. Torino: Nino Aragno Editore.
51. Prior, Arthur Noman. 1953. "The Logic of Negative Terms in Boethius." *Franciscan Studies* no. 13:1-6.

"Historians of logic have recently been turning their attention to the *De Syllogismo Hypothesico* of Boethius, and have found in it a quite highly developed propositional calculus.⁽¹⁾ So far as we are aware, however, his *De Syllogismo Categorico* and his *Introductio ad Syllogismos Categoricos* have not yet been subjected to similar scrutiny; and in the latter work at least there are features of considerable interest.

The *Introductio ad Syllogismos Categoricos* resembles the *De Syllogismo Hypothesico* in exhibiting a special interest in the results of attaching a negative particle to an element or to the elements of a proposition. Just as he gives in the latter work an exhaustive account of such varieties of the conditional proposition as 'If p then not q', 'If not p then q', 'If not p then not q', 'If p then if q then not r', and so on, so in the *Introductio* he considers the relations of opposition, entailment, and so on which hold between categorical propositions with and without negative (or as he calls them 'infinite') terms. In doing this he does not use variables such as 'a' and 'b', but the concrete terms which he uses are selected on a definite principle, which we shall now illustrate." (p. 1)

(1) See, in particular, K. Diir, *The Propositional Logic of Boethius* (NorthHolland Publishing Co., 1951); R. van den Driessche, " Sur le 'de syllogismo hypothetico' de Boèce," *Methodos* Vol. I, No. 3; I. M. Bochenski, *Ancient Formal Logic* (North-Holland Publishing Co., 1951), pp. 106-109.

52. Shiel, James. 1957. "Boethius and Andronicus of Rhodes." *Vigiliae Christianae* no. 11:179-185.

"G. Pfligersdorffer has recently described the attitude of the ancient editor, Andronicus of Rhodes, towards the final notes in Aristotle's *Categories* on opposites, simultaneity, priority, motion and possession-what the medievals called the postpraedicamenta. (1)

The scholar has based his intricate arguments on a passage of Boethius' commentary on the *Categories*, and as this

passage in the printed editions (2) is syntactically unintelligible he has suggested an emended text of it." (p. 179)

(...)

"On the basis of the passage thus emended (...) the author argues that: (a) Andronicus does not imply that Aristotle was not the real author of the postpraedicamenta but only that Aristotle was not responsible for annexing them to the Categories; ..." (p. 180)

(...)

"I believe that the text of the Boethius passage can be more convincingly presented from a wider survey of the extant manuscripts of the *In Categorias* ." (p. 181)

(...)

"The text I have proposed will still support Pfligersdorffer's argument (a) noted above -- but none of the others." (p. 185)

(1) G. Pfligersdorffer, "Andronikos von Rhodos und die Postpradikamente bei Boethius" (*Vigiliae Christianae* 7 (1953), 98-115).

(2) ed. Glareanus, Basel, 1546; reprinted (badly) in Migne PL 64 [263b].

53. ———. 1958. "Boethius' Commentaries on Aristotle." *Mediaeval and Renaissance Studies* no. 4:217-244. Revised version in: R. Sorabji (ed.), *Aristotle Transformed. The Ancient Commentators and Their Influence*, London: Duckworth, 1990, pp. 349-372 also reprinted in: Manfred Fuhrmann & Joachim Gruber (eds.), *Boethius*, Darmstadt: Wissenschaftliche Buchgesellschaft, 1984 pp. 155-186. Citations are from the reprint in Sorabji 1990.

"It is recognised that Aristotelian logic, which was to become an integral part of medieval scholasticism, was first transmitted to Latin Christianity through the work of Boethius. But the way in which he set about his self-imposed task has never been determined in detail. (1) We know that he promised to translate and comment 'upon every single work of Aristotle I can lay hands on (*omne*

Aristotelis opus quodcumque in manus venerit)'. (2) To form the idea was a silent judgment on the learning of his day; to realise it was more than one man could accomplish; but Boethius accomplished much.

(...)

The genuine texts of Boethius' versions of Aristotle (except that of the *Posterior Analytics*) have now been identified among the manuscripts and his distinctive method of translation firmly identified.(5) The present article therefore proposes to examine the other extant results of Boethius' promise, the commentaries and treatises. Are they really original or are they too translated from Greek?" (p. 349)

(...)

"The general impression produced by this study is that Boethius in composing his commentaries on the *Organon* translated Greek notes which he found added to his text of Aristotle. If this is true, it gives us new insight into the way Boethius worked.

From the beginning it is evident that he considered the works of the *Organon* , including Porphyry's *Isagoge* (which Neoplatonic schoolwork put on a par with Aristotle), as a united whole." (p. 368)

(...)

Cicero retired to his Tusculan study, Boethius to his 'study walls adorned with ivory and glass (*bibliothecae comptos ebore ac vitro parietes*)'. Our study of him as a translator emphasises anew his remarkable role of transmission: through him Aristotelian logic, the equipment of Neoplatonic paganism, is carried into the Christian Church to be eventually part of its armour of faith. (84)" (p. 371)

(1) M. Cappuyns, 'Boèce ', in *Dict. d'hist. et geog. eccles.* 9, Paris 1939, 367: 'The exact role of Boethius in the transmission of Aristotle's works is hard to disentangle at present.' This statement prompted the present enquiry. Dom Cappuyns' article is the best introduction to the subject. [Now however see the prefaces of *Aristoteles*

Latinus , vols 1-6, and the supporting essays in L. Minio-Paluello, *Opuscula: the Latin Aristotle* , Amsterdam 1972.]
(2) in *Int.* II 79,16 Meiser.

(5) L. Minio-Paluello, 'The genuine text of Boethius' translation of Aristotle's *Categories*', in *Mediaeval and Renaissance Studies* (MRS), 1942, 151-77 (= *Opuscula* , 1-27) and 'The text of the *Categoriae* : the Latin tradition' in *Class. Quart.* 39, 1945, 63-74 (= *Opuscula* , 28-39).

(84) This illustrates a seasoned historian's judgment that 'ancient philosophies, rediscovered, are found to possess a disturbing vitality, even in modern times' (Hugh Trevor Roper, *Catholics, Anglicans and Puritans* , 1987, VII).

54. ——. 1974. "Boethius and Eudemus." *Vivarium* no. 12:14-17.

"In writing his explanation (1) of Porphyry's 'tree' Boethius inevitably encountered a subdivision of 'substance' where Porphyry has divided 'rational animate substance' into 'mortal' and 'immortal'.

An immortal animate could only be a god, and, since 'animate' had already been classed under 'corporeal', this would be a corporeal god as described by the ancients who identified the world and the heavens with Zeus. Boethius does not quarrel with this doctrine. Only by abruptly detaching the reference to the ancients can Pierre Courcelle (2) see in it a Christian reservation voiced by Boethius himself.

Since similar philosophic reference to the ancient beliefs is to be found in Greek (3) I believe that Boethius translated it from Greek. And the Greek he translated from was not the extant commentary of Ammonius (4) on Porphyry." (p. 14) (...)

"Now one cannot help noticing that Boethius has a somewhat more complex classification than Ammonius. The latter includes no distinction for the two kinds of non-dialectical question. Besides, in place of 'non-dialectical' Ammonius has a more positive term, 'investigative'

(*pysmatike*), which is not translated in Boethius. And where Ammonius says "according to the ancients" Boethius has the more precise "according to the Peripatetics." All this should make one cautious of asserting that Ammonius is the exact source of Boethius.

What is more, Eudemus turns out to be the right man. This is perfectly clear from a passage of Alexander's commentary on the *Topics* (8) where the Boethian classification is given with an explicit ascription to Eudemus. Boethius however does not seem to be translating Eudemus directly, for the Latin scheme is slightly more elaborate, especially as regards substantial definition. And of course it is only part of the larger classification "according to the Peripatetics." And so I come back to the general conviction I have written about elsewhere, that Boethius translated his explanations from some Greek book later than Porphyry but anterior to Ammonius, and that in numerous cases one could visualise the exact Greek words he copied from. In the present case, as in that previous gloss on Porphyry's 'tree', a brief marginal scheme in Boethius' uncial Greek manuscript would have given him all the material he needed for his Latin.

It is rather a pity, then, that this Ammonius text does not work as evidence that Boethius received his education in the school of Ammonius at Alexandria. Nor does any similar text that I have so far been able to examine." (pp. 16-17)

(1) Boeth., in *Isagogen* 208.22 Brandt (PL 64.103ab).

(2) P. Courcelle, *La Consolation de Boèce dans la tradition littéraire* (1967) 341.

His suggestion and footnotes are appropriated by C. J. de Vogel, *Vivarium* 9 (1971) 59.

(3) Elias, in *Isagogen* 69.21 Busse.

As homage to Boethius I have transcribed the Greek into uncial type designed by my friend, Timothy Holloway, of St. John's College, Oxford. This I entrust to the elegant pages of *Vivarium* : ...in bibliotheca posui.

(4) cf. Ammonius, in *lib de Interp.* (20 b 22) 361 Meiser (PL 64.572c).

(8) Alexand., in *Top* . (104a 8) 69.13-19,22-23 Wallies. See note 3.

55. ———. 1982. "A Recent Discovery: Boethius' Notes on the *Prior Analytics* ." *Vivarium* no. 20:128-141.

"As a matter of fact all the genuine texts of Boethius' Aristotelian translations are recent discoveries. They were all out of reach thirty years ago and they have come to light only after the long and intricate labour involved in discerning and collecting the manuscript material for *Aristoteles Latinus* . This is an edition, planned for thirty-three volumes, of all the Latin versions of Aristotle surviving from the Middle Ages; each volume of the collection is devoted to a single Aristotelian work, gathering together the various translations of it so far identified. (1) The first six volumes cover the treatises on logic, collectively known to the tradition as the *Organon* : *Categories* , *De Interpretatione* , *Prior* and *Posterior Analytics* , *Topics* and *Elenchi* , together with Porphyry's *Isagoge* ('Introduction'). In these volumes the pioneer translations done by Boethius have been edited for all of the treatises except the *Posterior Analytics* , of which the genuine Boethian version is still missing. (2)

The procedure by which these genuine versions were discovered may prove to be one of the most impressive feats of scholarly achievement in this century. (3)" (p. 128)
(...)

"But the *Prior Analytics* is the most interesting in this regard. The copy of this work (*b*) which was inserted by Thierry of Chartres in his famous volume of the liberal arts was one of the very few which the *Aristoteles Latinus* editor found to be genuinely Boethian. (9) But he discovered another version (*B*), also of French provenance, in a manuscript at Florence, (10) and on examination this proved to have so much in common with Thierry's copy that

it had to be regarded as a second draft by the same translator.(11) The most noticeable differences between the two drafts, *b* and *B*, occur in the first sixteen chapters of Book I and in chapters 17-20 of Book II.(12)" (p. 130)

(1) A brief description of the enterprise was given by me in *Medium Aevum*, 33 (1964), 61-64; 42 (1973), 147-152.

(2) *AL I. I-V*. 3 ed. L. Minio-Paluello, Bruges-Paris, 1961-1969; *AL VI. 1-3* ed. B. G. Dod, Bruges-Paris, 1975.

(3) Many of the basic studies relating to the work of identification are collected in: L. Minio-Paluello, *Opuscula: the Latin Aristotle*, Amsterdam, 1972.

(10) *AL Codices (and Supplementum)* n. n.236 1412 (Firenze, Bibl. Naz. Centr. J. 6.34) (*Nn*).

(11) *AL III*, p. XI.

(12) *AL III*, p. XI-XVI.

56. ———. 1987. "The Greek Copy of Porphyrios' *Isagoge* used by Boethius." In *Aristoteles. Werk und Wirkung. Paul Moraux zum 65 Geburtstag gewidmet - Band 2: Kommentierung, Überlieferung, Nachleben*, edited by Wiesner, Jürgen, 312-340. Berlin: Walter de Gruyter. "In this paper I wish to ask what type of Greek book Boethius possessed for his study of the *Isagoge*. He certainly did use a Greek book of some kind because although he based his first commentary (c) (1) on the Latin version or paraphrase already made by Marius Victorinus, for his *editio secunda* (C) he made his own translation (p) of Porphyry's work, which is a concise introduction to five basic Aristotelian terms: Genus, Species, Difference, Property, and Accident.

Boethius' first commentary, c, opens with an experiment in the dialogue style that had been familiar to Latin authors from Cicero to Macrobius and Augustine. That such Platonizing dialogue might employ fictional elements is admitted by Macrobius (*Sat*. I 1), and it has been noticed that Augustine felt less than happy in using this Platonic mode. The characters here are Boethius himself and a

possibly fictional Fabius whose total knowledge of the *Isagoge* seems to be confined to the Latin version made by Victorinus. Boethius at the outset (c 4,6) gives Fabius a Ciceronian promise (cf. *Cic.Top* . 1) of deeper instruction that he could have gathered from Victorinus alone. Boethius also admits that he will be transmitting this information from others, from the *introductionarii commentarii* of learned masters, and he seems in fact to be actually consulting some such work (c 4,4: *super eisdem rebus meditantem*). A question may occur to the modern reader over these sources of his instruction. How is Boethius, so often praised for his originality of thought, in fact adapting or translating some earlier commentary, when he here undertakes in the best dialogue manner to convert *otium* into intellectual *negotium* ? A Latin source for his work would seem unlikely, for it appears from Cassiodorus (*Inst.* 2,3,18) that Victorinus had made only the Latin translation and not a commentary as well.

The extant Greek commentaries on the *Isagoge* have a special character because of the work's position at the beginning of the *Organon* , and therefore at the beginning of all Neoplatonic school-work in philosophy. They begin with lengthy sets of prolegomena, first on philosophy in general and then on the *Isagoge* itself. The general set adheres to a standard school order of topics for lectures (πράξεις): definitions of philosophy both theoretical and practical, and the subdivisions of these; then a further list of preliminaries (κεφάλαια, προλεγόμενα, προτεχνολογούμενα) which must be followed before beginning the study of any philosophic work.(2) The prolegomena proper to the *Isagoge* then apply these considerations, one by one, to the book itself." (pp. 312-313)

(1) For brevity of reference I employ these sigla, based on the usage of the Aristoteles Latinus (*AL*):

Π Porphyrii *Isagoge*, ed. Busse, CAG IV 1 (1887)

p Isagoge Porphyrii: translatio Boethii, ed. Minio-Paluello, AL I (1966) c Boethii in Isagogen, editio prima, ed. Brandt, CSEL 48 (1906)

C Boethii in Isagogen, editio secunda, ed. Brandt, *ibid* .
(...)

57. Solmsen, Friedrich. 1944. "Boethius and the History of the *Organon* ." *American Journal of Philology* no. 65:69-74. Reprinted in: F. Solmsen, *Kleine Schriften II* , Hildesheim: Olms, 1967, pp. 38-43 and in: Manfred Fuhrmann & Joachim Gruber (Hrsg.), *Boethius* , Darmstadt: Wissenschaftliche Buchgesellschaft, 1984, pp. 127-132.
- "Boethius had set himself the task of bringing into Latin the entire body of Plato's and Aristotle's writings. (1) What he actually accomplished, the translation of Aristotle's logical treatises, was a small part of this huge enterprise. There is, besides, his translation of Porphyry's *Eisagoge* . The chronological order of these translations (and of the commentaries which accompany them) has been determined with reasonable certainty by two scholars, Samuel Brandt and Arthur P. McKinlay who, though differing in their method and criteria, have yet arrived at fundamentally identical results. (2) The sequence appears to have been as follows: Porphyry's *Eisagoge* , Aristotle's *Categories* , *Peri Hermeneias* , *Analytica Priora* , *Posteriora* , *Topica* , *Sophistici Elenchi* . It could not remain unnoticed that this sequence is identical with the order in which the original works are integrated in the standard collection of Aristotle's logical works commonly known as the *Organon* ; in fact, Brandt (3) points out that Boethius simply followed the order which he found established in his Greek original. This suggestion is, as we shall see, perfectly correct; but a student of Aristotle will be aware that the existence of the *Organon* (or of any fixed order of these writings) by A. D. 500 has never been proved. (4) Shall we then say that the studies of Brandt and McKinlay have

supplied the *terminus ante quem* for its existence which the students of Aristotle's own works have failed to find? In a sense this is true, but if we wish to have the complete picture a few more facts must be taken into account. Byzantine manuscripts of Aristotle's logic, which are very numerous, invariably have the writings in the "orthodox" order, given above. Just as invariably they include Porphyry's *Eisagoge* as the first item, i. e. preceding the *Categories*. (5) To most scholars these facts would indicate that there were one or more late ancient editions in which the works were thus arranged. I do not know whether anyone would be inclined to think of a Byzantine scholar as responsible for the arrangement, but if anyone did he would certainly find it very difficult to maintain this view against the witness of Boethius; for it is precisely here that Boethius' testimony becomes important." (pp. 69-70)

(1) *In librum peri hermeneias Comment., Secunda editio*, II, 3, p. 79, 16 Meiser.

(2) S. Brandt, *Philol.*, LXII (1903), pp. 141-54, 234-79; A. P. McKinlay, *H. S. C. P.*, XVIII (1907), pp. 123-56. See also E. K. Rand, *Jahrbücher f. class. Philol.*, Supplem. XXVI (1901), pp. 428 ff.

(3) *Loc. cit.*, p. 260. Aristotle (*A. Pr.* A4, 25 b 26) had made it clear that the *Analytica Posteriora* was to be considered a sequel to the *Priora*. Apart from this, he has nothing to do with the order sanctioned in the *Organon*. On the term *organon* and its application to Aristotle's logica, see e. g. Karl Prantl, *Geschichte der Logik im Abendland* (Leipzig, 1855), I, p. 532 (especially notes 4 and 5); see also W. Christ and W. Schmid, *Griechische Literaturgeschichte* (6th ed., Muenchen, 1920), I, p. 729, n. 3.

(4) W. D. Ross, *Aristotle* (3rd ed., London, 1937), p. 20, n. 6, suggests that the term "Organon" was in the sixth century applied to the collection of Aristotle's logical works.

58. Speca, Anthony. 2001. *Hypothetical Syllogistic and Stoic Logic*. Leiden: Brill.

Contents: Acknowledgments VII; Abstract IX; Preface XI-XIII; 1. The Aristotelian Background 1; 2. The Greek Commentators on Aristotle 35; 3. Boethius: *On Hypothetical Syllogisms* 67; 4. Boethius: *On Cicero's Topics* 101; References 135; General index 139; Index locorum 141.

Abstract: "Aristotle recorded his intention to discuss hypothetical syllogistic fully (*An. pr.* 50a39), but no such treatment by him has been available since at least a.d. 200, if even it ever existed. The contributions of his successor Theophrastus have also perished, as have those of his followers of the subsequent few centuries. At the same time, almost all of the surviving sources, especially the Greek commentators and Boethius, did not report hypothetical syllogistic accurately. Rather, they conflated it with Stoic logic, which it resembles in some respects, but from which it is significantly different. Modern scholars, who have not appreciated the nature or extent of this conflation, have unintentionally perpetuated the problem. As a result, the original form of hypothetical syllogistic has been misunderstood, and part of the influence of Stoic logic in late antiquity has remained unclear.

This book is an account of the conflation of hypothetical syllogistic and Stoic logic. The first chapter is a study of Aristotle's remarks on hypothetical syllogistic, which suggest that it was not a sentential logic such as the Stoics would develop. The second chapter details the conflation as it appears in the Greek commentaries on Aristotle, which consists principally in a confusion between the original Peripatetic division of hypothetical statements and syllogisms, whose criteria are semantic, and the Stoic division of complex propositions and inference schemata, whose criteria are syntactic. The third and fourth chapters focus on Boethius's *On hypothetical syllogisms* and *On Cicero's Topics*, in which even further conflation demonstrates that hypothetical syllogistic and Stoic logic

had completely ceased to retain their distinct natures by the end of antiquity."

59. Stump, Eleonore. 1974. "Boethius Works on the Topics." *Vivarium* no. 12:77-93.

"The *De topicis differentiis* appears to be the mature product of an excellent mind. It shows the same acumen, subtlety, and care as Boethius's other logical treatises; and it seems to build on the training and insight Boethius manifested in his earlier treatises. (1) It is a complete study of the discipline for finding arguments, both dialectical and rhetorical. Boethius works his diverse material, from different traditions and from different disciplines, into one coherent and elegant system unequalled, as far as I know, in any of the material that has come down to us from antiquity and the early middle ages. (2)

(...)

But a thesis which runs counter to the common-sense view has been published; James Shiel in his article *Boethius' Commentaries on Aristotle* (4) has argued that Boethius's works on logic are not original compositions but are rather his translations of Greek Neo-Platonic scholia on Aristotle's *Organon*. His thesis seems to be gaining currency; two eminent scholars in the field, Minio-Paluello (5) and De Rijk, (6) accept or support it. In this article, after considering very briefly some treatment of Shiel's thesis in the literature, I want to discuss the thesis in detail as it applies to Boethius's work on the *Topics*. My main concern is to examine and discuss Shiel's evidence for his counter-intuitive theory; if it does not stand up under scrutiny, we are free to return to the common-sense view and to take Boethius's works on the *Topics*, at least, to be just what they appear to be -- his original compositions." (pp. 77-78)

(1) The *De top. diff.* is one of the last works Boethius produced. See L. M. De Rijk, On the Chronology of Boethius' Works on Logic II, *Vivarium* 2 (1964), 153-154 and 157-161.

- (2) See the Introduction and Chapters I-III in my unpublished Ph.D. dissertation, *Boethius's De topicis differentiis*, Cornell University, 1975 [now published : Ithaca: Cornell University, 1978].
- (4) *Mediaeval and Renaissance Studies* 4 (1958), 217-244.
- (5) Cf. L. Minio-Paluello, Les traductions et les commentaires aristotéliens de Boèce in: *Studia Patristica* II, fifth series, V. 9; 1957; pp.358-365.
- (6) Cf. L. M. De Rijk, On the Chronology of Boethius' Works on Logic I and II, *Vivarium* 2 (1964), 1-49, 125-162.
60. ———. 1981. "Boethius' Theory of Topics and its Place in Early Scholastic Logic." In *Congresso Internazionale di Studi Boeziani (Pavia, 5-8 ottobre 1980): atti*, edited by Obertello, Luca, 249-262. Roma: Editrice Herder.
- "Boethius's *De topicis differentiis* is a philosophically interesting and historically influential work having to do with the art of Topics (or *loci*), a branch of philosophy which antiquity bequeathed to the Middle Ages but which philosophers of the scholastic period transformed almost past recognition. In this article, I want to explain briefly Boethius's theory of Topics and then discuss in some detail that of Abelard, which seems superficially quite similar to Boethius's but is in fact very different from it. As a result, I hope to make clearer both Boethius's theory of Topics itself and the significant role played by Boethian Topics in the history of twelfth-century logic." (p. 249)
61. ———. 1981. "Boethius and Peter of Spain on the Topics." In *Boethius and the Liberal Arts. A Collection of Essays*, edited by Masi, Michael, 35-50. Bern: Peter Lang.
- "Boethius's influence on later medieval philosophy is, of course, enormous, and his treatment of the Topics is no exception to that general rule. Later medieval philosophers had a strong interest in dialectic. The whole technique of the *disputatio*, for example, and the consequent literature on *obligationes* have their ultimate origin in dialectic; and the study of the Topics was considered a regular part of logic

and treated in a section of its own in elementary logic texts. For a long time, Boethius was the most important, and sometimes the sole source for the study of the Topics, and his work remained an important indirect source even when it was superseded by later treatments of the subject. For example, three of the best known thirteenth-century logicians, William of Sherwood, Peter of Spain, and Lambert of Auxerre, all have a chapter on Topics in their introductory logic texts; and all three reproduce the Boethian list of Topics and the major Boethian categorizations or divisions of the Topics.

For the sake of putting Boethius's work on the Topics into medieval perspective and of understanding the changes and developments in the Topics, it is useful to consider the treatments of the Topics among some of these later medieval philosophers. In particular, it is worthwhile examining the discussion of the Topics in Peter of Spain's *Tractatus*, (9) which was the most widely used textbook of logic on the Continent from the late thirteenth to the end of the fifteenth century (10). Its discussion of the Topics is very similar to discussions found in several of the scholastics contemporary with or earlier than Peter. Besides being a representative and influential treatment of the Topics, Peter's discussion is heavily dependent (directly or, more likely, indirectly) (11) on Boethius's account. The chapter on dialectic in the *Tractatus* is like *De top. diff.* in organization. It begins with a series of definitions and then lists the Topics with a description and example of each. The definitions and the listing are those in *De top. diff.*, and in some places Peter's words are equivalent to a quotation from Boethius. (12) Consequently, comparison of Boethius and Peter is not difficult. Some of the recent literature has suggested that Peter's work on the Topics is simply a slightly varied compilation drawn from Boethius's *De top. diff.* Otto Bird, for example, who has published a number of very useful articles on the medieval Topics, says that Peter's discussion

of the Topics "is little more than a summary of the first half of BDT [*De top. diff.*],"13 and that "Peter of Spain made a précis of it [*De top. diff.*] (primarily of the second book) and provided additional Maxims in the fifth tract of his *Summulae* [*Tractatus*]." (14) But such a view shows a mistaken understanding of both Peter and Boethius. In what follows here, I will examine Peter's discussion of the Topics in considerable detail in order to exhibit with some accuracy a method for using Topics that, despite its apparent similarity to Boethius's method, is in fact very different from it; by doing so, I hope to show what Peter's method comes to and as a result to clarify the nature of the Boethian art of Topics." (pp. 37-38)

(9) Ed. L. M. De Rijk (Assen, 1972).

(10) Ibid., pp. XCV-C.

(11) Cf., *Tractatus* , p. XCIII, n. 5.

(12) Cf., for example, Peter, *Tractatus* , p. 55.17 and Boethius, *De top. diff.* , 1180C4-5, Peter p. 55.23 and Boethius 1183A9-10, and Peter p. 56.16-18 and Boethius 1184B13-C1.

(13) "The Tradition of the Logical Topics: Aristotle to Ockham", *Journal of the History of Ideas* , 23 (1962), p. 313.

(14) "The Formalizing of the Topics in Mediaeval Logic", *Notre Dame Journal of Formal Logic* , 1 (1960), 140. Jan Pinborg echoes Bird's view of Peter. Cf. "Topik und Syllogistik im Mittelalter", in *Sapienter Ordinare: Festgabe für Erich Kleineidam* , ed. F. Hoffmann, L. Scheffczyk, and K. Feiereis (Leipzig, 1969), p. 164; and *Logik und Semantik im Mittelalter* (Stuttgart-Bad Cannstatt, 1972), p. 75. De Rijk, ed., *Tractatus* , p. XCIII seems to agree at least in part with Bird's view: "This tract [chap. V of *Tractatus*] is not a compilation from Aristotle's *Topica* but from Boethius' *De topicis differentiis* I and II, with some additions from Aristotle's *Topics* ." He argues in note 5 on the same page that Peter's treatment is not taken directly from Boethius:

rather, he says, it is "useful to point to the treatment of the loci in the *Logica Cum sit nostra* , pp. 438-445 or to that in the somewhat older work, *Dialectica Monacensis* , pp. 528-555." De Rijk's point is very likely right, but what can be inferred from the claim in the text and the note is that Peter's work on Topics amounts to an indirect compilation from Boethius's *De top. diff.*

62. ———. 1987. "Boethius's *In Ciceronis Topica* and Stoic Logic." In *Studies in Medieval Philosophy* , edited by Wippel, John F., 1-22. Washington: Catholic University of America.
63. ———. 1989. *Dialectic and Its Place in the Development of Medieval Logic* . Ithaca: Cornell University Press.
Contents: Acknowledgments IX; Introduction 1; 1. Dialectic and Aristotle's *Topics* 11; 2. Dialectic and Boethius's *De topicis differentiis* 31; 3. Between Aristotle and Boethius 57; 4. Topics and Hypothetical Syllogisms in Garlandus Compotista 67; 5. Abelard on the Topics 89; 6. Logic in the Early Twelfth Century 111; 7. Terminist Logicians on the Topics 135; 8. Consequences and the Decline of Aristotelianism in Formal Logic 157; 9. William of Sherwood's *Treatise on Obligations* 177; 10. Walter Burley on Obligations 195; 11. Roger Swyneshed's Theory of Obligations 215; 12. Topics, Consequences, and Obligations in Ockham's *Summa logicae* 251; Index 271-274.
"Since 1975 my work in medieval logic has concentrated on dialectic. I have tried to trace scholastic treatments of dialectic to discussions of it in the work of Aristotle, the Greek commentators on Aristotle, and the Latin rhetorical tradition. But I have been especially interested in Boethius, whose discussions of dialectic were among the most important influences on scholastic treatments of that subject. Accounts of dialectic based ultimately on Boethius's views continued to play a fundamental role in philosophy through the fourteenth century. The earliest scholastic logician whose work we know, Garlandus Computista,

devoted a great deal of attention to Boethian dialectic, and I have tried to follow the development of scholastic dialectic from Garlandus through various twelfth-century logicians (including Abelard) and the thirteenth-century terminists into the fourteenth century in the work of William Ockham." (p. 1)

64. Suto, Taki. 2009. "Logic and Grammar in Boethius: A Logical Analysis of the Parts of Speech." In *The Word in Medieval Logic, Theology and Psychology. Acts of the XIIIth International Colloquium of the Société Internationale pour l'Étude de la Philosophie Médiévale, Kyoto, 27 September - 1 October 2005*, edited by Shimizu, Tetsuro and Burnett, Charles, 65-80. Turnhout: Brepols.
- "There is no doubt that Boethius places Aristotle's *Peri hermeneias* and his commentaries in the field of logic. In chapter 1 (16a8-9) of the work, Aristotle famously reserves some matters for his work on the soul, considering them beyond the scope of the subject in discussion. In commenting on this reservation, Boethius claims that "it is one thing to dispute principally on thoughts (*intellectibus*) of the soul, but another to take them for disputation so far as they can pertain to logical knowledge," (1) thus holding the topic in discussion as that of logic.
- On the other hand, Boethius' discussions in the commentaries rely heavily upon the noun (*nomen*) and the verb (*verbum*), which we usually take as grammatical distinctions." (p. 65)
- (...)
- "Although using the terminology employed by grammarians, Boethius sometimes contrasts his view with theirs. He claims that grammarians regard "garalus" (which is not a real Latin word) as a noun but philosophers do not. (10) He also claims that a grammarian counts eight parts of speech, i.e., noun, pronoun, verb, adverb, participle, conjunction, preposition and interjection, but that a philosopher counts only two, that is, noun and verb. (11)

Calling the holder of the view contrasted to that of a philosopher simply “a grammarian” (*grammaticus*), (12) Boethius never actually names any grammarians in his discussions. (13)

In this paper, by considering the question of how Boethius distinguishes logic from grammar, I will analyse the nature of Boethius’ investigation of logic in his commentaries. (14) Specifically, I will look at his division of the parts of speech and his notion of conjunction. The result of the examination will show that Ackrill’s criticism of Aristotle does not apply to Boethius.” (p. 67)

(1) “Etenim aliud est principaliter de intellectibus animae disputare, aliud tantum sibi ad disputationem sumere, quantum ad logicae possit pertinere peritiam.” Boethius (A.M.T. Severinus), *In Peri hermeneias, Prima editio* , ed. C. Meiser in *Anicii Manlii Severini Boetii Commentarii in Librum Aristotelis Peri Hermeneias* , Leipzig 1877, 41.11-14. Hereafter *In PH I* refers to the first commentary and *In PH II* to the second commentary.

(10) Boethius, *In PH II* , ed. Meiser, 32.17-22.

(11) Boethius, *De syll. cat.* , in PL 64, 796C-D; *Introd. syll. cat.* , in PL 64, 766A-B (note 39).

(12) Note that a “grammarian” was a scholar engaged in the study broader than grammar in modern sense (including poetry especially): “Primus in eo qui scribendi legendique adeptus erit facultatem, grammatici est locus. Nec refert de Graeco an de Latino loquar, quanquam Graecum esse priorem placet: utrique eadem via est. Haec igitur professio, cum brevissime in duas partes dividatur, recte loquendi scientiam et poetarum enarrationem, plus habet in recessu quam fronte promittit.” (Quintilianus, *Institutiones oratoriae* I c. 4 [1-2] in *The Orator's Education* , ed. and trs. D. Russell, Cambridge MA 2001. See also the appendixes of R. Kaster, *Guardians of Language: The Grammarian and Society in Late Antiquity* , Berkeley, 1988.

(13) We can find the names of Aristarchus and Donatus in Boethius' writings (Aristarchus: Boethius, *In Categorias Aristotelis* = *In Cat.*, in PL 64, 171D, 182C, 189C, 260A; Donatus: *In Cat.*, 257D). Boethius mentions their names as examples of a grammarian and says nothing about their grammatical theories.

(14) There are only a few secondary writings on this topic: J. C. Magee, "Truth, Discourse and Mind in Boethius", Ph.D. dissertation, University of Toronto, 1986, chapter 2 and S. Ebbesen "Boethius on the Metaphysics of Words", in A. Galonnier ed. *Boèce ou la chaîne des savoirs*, 2003, 257-75.

65. ———. 2011. *Boethius on Mind, Grammar and Logic. A Study of Boethius' Commentaries on Peri Hermeneias*. Leiden: Brill.

Contents: Acknowledgements XI; Note to the Reader XV; Chart 1: Contents of Boethius' Two Commentaries on *Peri hermeneias* XVII; Chart 2: Chronology of Boethius' Works XIX; Chart 3: Chronology of Major Thinkers and Writers XXI; Chart 4: Relationships among Ancient Commentators XXIII;

Introduction 1; Part One. Boethius on Words and Minds. I. The Significatum of Spoken Words 17; II. Words as 'Notae' 43; III. Three Types of Speech 77; Part Two. Boethius on Logic and Grammar. IV. Nouns, Verbs, and Conjunctions 117; V. The Varieties of Speech 151; VI. The Verb 'To Be' 187; VII. General Conclusions 223; Bibliography 237; Index of Ancient and Medieval Texts 269; Index of Names (Ancient and Medieval Authors) and Subjects 285; Index of Modern Authors (Selective) 294-296.

"This work aims to be a study of his commentaries on Aristotle's *Peri hermeneias* (*De interpretatione*). For my discussion of these commentaries, I use Carl Meiser's edition, which is the only critical edition currently available. Deviations from the critical edition are recorded in the footnotes of the quotations.

Boethius wrote two commentaries on *Peri hermeneias*. In Meiser's edition, the first commentary is only 195 pages while the second commentary is 502 pages, more than double the length of the first. Writing two commentaries on the same work was not unusual for him. He also wrote two commentaries on Porphyry's *Isagoge*, but the first commentary is three-fifths the length of the second commentary.(3) The striking difference in length between the two commentaries on *Peri hermeneias* reflects his careful planning of the role of each commentary: the first one to present basic lines of Aristotle's thought, the second one to provide much more detailed explanations.(4) In the second commentary, he often introduces past discussions of Greek commentators and notions that he does not mention in the first commentary. The fact that he purposely wrote two commentaries should be seriously taken into account in considering the apparent inconsistencies and contradictions between them.

This work is primarily devoted to the second commentary. I include the first commentary principally in the following two cases: First, I point out where his explanation significantly differs from that of the second commentary. His account in the second commentary can be mostly regarded as a development of the first, but the first commentary sometimes has explanations incompatible with those in the second commentary.(5) Boethius seems to make contradictory statements rather deliberately, intending to present simple interpretations in the first commentary, knowing that they are not the best.(6) Second, I refer to the first commentary when it illuminates or enhances his explanations in the latter.

I sometimes look at Boethius' other works, mainly logical ones, in relation to the main questions surrounding the second commentary.

Where the texts contribute to our understanding, I discuss them in the relevant sections. Otherwise, I refer to them in

the footnotes. For my interpretations of the commentaries, I have relied very little on his treatises on theology, liberal arts, and his renowned masterpiece, *The Consolation of Philosophy*. It is important to consider why the same individual wrote all these works in different disciplines. I would not deny that these independent treatises could illuminate his logical works. In fact, I believe they do, and I will argue so in the concluding chapter.

I find, however, that these independent treatises have many differences from his logical works. For an accurate interpretation of his logical works we should be very careful in relying on these treatises.(7)" (pp. 1-2)

(3) In Brandt's edition of Boethius' commentaries on Isagoge, the second commentary is 214 pages while the first commentary is 130 pages. Boethius does not allude to a second commentary in the first.

(4) In *PH1* 31.6-32.3; In *PH2* 186.2-9; 250.20-251.4; 294.5-8. For the dates of composition of these commentaries, see Chart 2, p. XIX.

(5) His distinction between simple and composite propositions, which I discuss in Chapter 5, is an example of this.

(6) Sten Ebbesen (*The Aristotelian Commentator* (2009): 49) points this out with textual evidence: In *PH1* 132.3 sqq. and In *PH2* 276.8 sqq.

(7) Scholars have pointed out this danger. Antony Lloyd (*The Anatomy of Neoplatonism* (1990): 2, n.2) cautions against cross-referencing Boethius' different works. Ebbesen says, "one should be cautious in assuming consistency between the doctrines of the Aristotle commentaries and that of *Consolation of Philosophy*" ("Review of J. Magee's *Boethius on Signification and Mind*." *Vivarium* 29, 1991, p. 153). Vincent Spade (*Boethius against Universals: Arguments in the Second Commentary on Porphyry*, 1996) criticizes Peter King's use of Boethius'

De trinitate for understanding his second commentary on *Isagoge* .

66. Sweeney, Eileen C. 2006. *Logic, Theology, and Poetry in Boethius, Abelard, and Alan of Lille: Words in the Absence of Things* . New York: Palgrave Macmillan.

Contents: Abbreviations IX Acknowledgments ;

Introduction: Words in the Absence of Things 1; 1. Boethius: Translation, Transfer, and Transport 7; 2. Abelard: A Twelfth-Century Hermeneutics of Suspicion 63; 3. Alan of Lille: Language and its Peregrinations to and from Divine Unity 127; Conclusion: Language and the *Ascensus Mentis ad Deum* 177; Notes 185; Bibliography 213; Index 230-236. Introduction.

"While Augustine is the source of what has aptly been called "the semiological consciousness of the Christian West,"

Boethius is the source of its technical vocabulary and academic form. (9) For the twelfth century as a whole, Boethius's logical commentaries and theological tractates are the standard works of reference and provide the technical vocabulary for new work. As we shall see, Abelard and Alan take up not just Boethius's vocabulary but his questions and issues in their accounts of language and theology. Moreover, they take up not just the logical and theological parts of Boethius's project but also the questions and themes of the Consolation in their poetry.

Boethius's project was to translate, comment on, and transfer the language of philosophy into theology, to incorporate secular disciplines and texts into his own philosophical/theological vision. Boethius's imaginative world is one populated largely by other texts, and is notably different from Augustine's appropriation of secular texts in the more positive and autonomous place given to Aristotelian logic and pagan literature. The voices of these texts speak themselves in the work of Boethius." (p. 2) (...)

(9) Eugene Vance, "Saint Augustine: Language as Temporality," in *Mervelous Signals: Poetics and Sign Theory in the Middle Ages* (Lincoln: University of Nebraska Press, 1986), p. 34.

Chapter 1.

"Although I do not pretend to have found the definitive solution to the problem of interpreting Boethius, following the theme of language through the main parts of the corpus has yielded a stronger sense of the unity, autonomy, and originality of Boethius. One way to express it is in visual terms, terms suggested, I will show below, by the *Consolation* itself. (7) My contention is that Boethius's innovation is the construction in some detail of multiple and correct, though limited, perspectives from which human understanding can view itself and the nature of reality. As we will see, the method of the Boethian project is linguistic: different perspectives are constructed by developing different vocabularies and different senses of the same terms. Then, the perspectives are arranged hierarchically, the lower encompassed by the higher.

The themes to which Boethius returns again and again in the logical commentaries are the distinction between the order of words and things and the conventionality of language. From this fundamental distinction between what is the case and what we say, it is only a short step to the elaboration and amelioration of this gap in terms of multiple senses of terms, multiple disciplines with distinct methods and terminologies, and even multiple ontologies which either describe the same reality in different terms and/or are true descriptions of different strata of reality. The conviction that motivates a good portion of the tractates is the view that disagreement and contradiction can be mediated by the creation of or the distinction between different vocabularies. And while it is true that the *Consolation* attempts to hierarchize the different perspectives on Boethius's fate, it still gives voice to those

“lower” perspectives through the voice of Boethius, the prisoner.

Boethius’s own use of language mirrors this multiplicity of meanings, methods, and rhetorics. He goes from close, careful translation, paraphrase, and commentary designed to provide an introduction to the greenest of beginners, to the terse, esoteric, and technical language of the tractates, to the complex interweaving of poetic and philosophical language and allusions in the *Consolation* .

Boethius surely had important models for such multileveled and synthetic views in his Neoplatonic masters and contemporaries, who would have seen his stated plan to translate, comment on, and show the agreement between Plato and Aristotle as an understandable if bold undertaking. Boethius’s vision differs from theirs both in being Christian and in being worked out in almost exclusively textual terms — in the mediation of texts in the translation and commentary, in the self-conscious production of new textual forms, and in the development of new vocabularies. Boethius both creates his own vocabulary in his translations and transfers it from its “proper” and original location to theological topics where it is radically reworked in the theological tractates. The same project continues in the *Consolation* 's attempt to ascend from the prisoner’s worldly perspective to that of Lady Philosophy by means of the language and arguments of different philosophical schools.

I will trace the construction of this peculiarly Boethian textuality in Boethius’s *Isagoge* and *Peri hermeneias* commentaries, theological tractates and *Consolation* . In all these texts, Boethius’s most common methods are, first, the division or distinction, and second, the construction and relating of different perspectives. Following Boethius’s own pedagogical plan, then, I begin with the logic commentaries." (pp. 7-8, notes omitted)

67. Thomas, Ivo. 1951. "Boethius' locus a repugnantibus."
Methodos no. 3:303-307.

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[The Philosophical Works of Boethius. Editions and Translations](#)

[Annotated Bibliographies of L. M. de Rijk](#)



[History of Logic from Aristotle to Gödel](#)

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INDEX OF THE SECTION: *HISTORY OF MEDIEVAL LOGIC*

Eleventh to the Fourteenth Century

[Medieval Logic: A General Overview](#)

General Bibliography on Medieval Logic:

[General Studies A - K](#)

[General Studies L - Z](#)

Latin Logic until the Eleventh Century

Selected Bibliography on Latin Logic until the Eleventh Century

The Birth of the Liberal Arts: the *Trivium* (Grammar, Dialectic, Rhetoric)

Logic and Grammar in the Twelfth Century

Selected Bibliography on the Twelfth Century

The Development of Logic in the Thirteenth Century

The Development of Logic in the Fourteenth Century

Selected Bibliography on the Thirteenth and Fourteenth Centuries

[Medieval Theories of Supposition \(Reference\) and Mental Language](#)

Bibliography on the Medieval Theories of Supposition and Mental Language:

[Supposition A - L](#)

[Supposition M - Z](#)

Abelard: Logic, Semantics, Ontology and His Theories of the Copula

[Abelard's Philosophical Works: Editions, Translations](#)

[I. Logic, Semantics and Ontology in the Work of Abelard](#)

[II. Theories of the Copula in the Logical Works of Abelard](#)

Bibliography on the Logic and Metaphysics of Peter Abelard:

[Abelard A - L](#)

[Abelard M - Z](#)

An Overview of Buridan's Logical Works:

[Editions, Translations and Studies on the Manuscript Tradition](#)

[I. An Overview of the *Summulae de Dialectica*](#)

[II. The *Treatise on Consequences* and Other Writings](#)

Selected Bibliography on the Logic and Metaphysics of
Buridan:

[Buridan A - L](#)

[Buridan M - Z](#)



[History of Logic from Aristotle to Gödel](#)

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History of Medieval Logic: A General Overview

INTRODUCTION

"The role of logic in the Middle Ages.

Regarding the role of logic within the framework of arts and sciences during the Middle Ages, we have to distinguish two related aspects, one institutional and the other scientific. As to the first aspect, we have to remember that the medieval educational system was based on the seven liberal arts, which were divided into the *trivium*, i.e., three arts of language, and the *quadrivium*, i.e., four mathematical arts. The so-called trivial arts were grammar, rhetoric, and logic, and during a period of several centuries virtually every educated person, at least every university graduate, received a training in these matters, especially in logic. Students in the medieval faculty of arts probably spent more time studying logic than any other discipline. This first -- institutional -- aspect concerning the role of logic is explained by the second -- scientific -- aspect. The trivial disciplines provided techniques of analysis and a technical vocabulary that permeate philosophical, scientific and theological writings. Logic, as mentioned before, was referred to and was generally regarded as the art of arts and the science of sciences. The increasing cultural dominance of the universities with their obligatory *disputationes* and their

hierarchy of examinations on the one hand and the outstanding status of logic on the other were corresponding features of the educational world of the 13th century.

The core of the logic curriculum from the 12th century onwards was provided by the logical works of Aristotle. These represented the material for the study of types of predication, the analysis of simple propositions or statements (2) and their relations of inference and equivalence, the analysis of modal propositions, of the structure and the types of the syllogism, dialectical topics, fallacies and scientific reasoning as based on the demonstrative syllogism. Medieval logicians, however, realized that there were other, non-Aristotelian, approaches to logical subjects, questions and methods that could be investigated. The new approaches primarily included works on the signification and the supposition of terms -- a distinction showing some similarity to the modern distinction between meaning and reference. The theory of signification deals with the capability of descriptive terms to function as signs, i.e., their property of being meaningful. The theory of supposition was concerned with the types of reference that terms in their function as subject and predicate obtain in the context of different propositions. Another emphasis was put on consequences or valid inference forms. These innovations were by no means regarded as an alternative to tradition, but supplemented the Aristotelian *logica antiqua* under the heading of *logica moderna* or *logica modernorum*.

The medieval logicians themselves did not classify their discipline as a *scientia formalis* -- to my knowledge the expression was not used in the Middle Ages -- but as a *scientia sermocinalis*, i.e., a science of argumentative speech, which was the overarching framework of the trivial arts. The *scientia sermocinalis* itself is one of three types into which science was divided, e.g., by Peter of Spain in his well-known [Lambertus Marie de Rijk (ed.), Petrus Hispanus: *Tractatus* called afterwards *Summule logicales*, Van Gorcum 1972, p. 29, 14-16]. The differences (*differentiae*) of science, as Peter states, are *naturale*, *morale*, and *sermocinale*, a division which resembles the Stoic division into natural

philosophy, ethics, and logic.(3) William of Sherwood, another important logician of the 13th century, offers the same scientific differences, but -- in contrast to Peter of Spain -- as the result of a twofold division:(4) Since there are two sources (*principia*) of things, nature and the soul, there will accordingly also be two kinds (*genera*) of things. The things whose source or principle is nature are the concern of natural science. The others, whose source or principle is the soul, are again divided into two types. Since according to Sherwood the soul is created without virtues or knowledge, it performs certain operations by means of which it attains to the virtues, and these are the concern of ethics or *scientia moralis*. The soul performs different operations by means of which it attains to knowledge, and these are the concern of the science of argumentative speech or *scientia sermocinalis*. At this point we meet the same threefold division of science that occurs in Peter of Spain. It is worth mentioning that the first division regarding the nature of things is metaphysical while the second division regarding the different sorts of things whose source is the soul is epistemological. The sciences whose principle is the human soul are understood as concerning basic human activities or operations, and the specific differences among them are obtained from the goals of these activities, namely virtues on the one hand and science on the other.

The term "*scientia sermocinalis*" which stands for the subtle analysis of ordinary language came into use in the late 12th or early 13th century. The designation of logic as a *scientia sermocinalis* was commonly accepted during the 13th century, but it was not the only one. The term "*logica*" as derived from the Greek "*logos*" can mean both "*sermo*" and "*ratio*". Accordingly, logic was regarded either as a *scientia sermocinalis* or as a *scientia rationalis*. The medieval authors offer considerations supporting both titles. While logicians like William of Sherwood and Peter of Spain stressed the feature of logic as a linguistic science as mentioned above, other authors in the 13th century like Robert Kilwardy and St. Bonaventure called it linguistic and rational alike. In the 14th century the notion of logic as a rational

science became predominant. An important reason lies in the fact that logic was about second intentions, which were higher-level concepts like "genus", "species", "predicate", etc. We make use of second intentions to classify our concepts or first intentions of things in the world. Second intentions reveal both universals and logical structures and were regarded as mental constructs or rational objects reached through abstraction, which means reflection on general features and relations of things and on actual pieces of discourse."

Notes

(2) In medieval logic "propositio" and "enuntiatio" both stand for a sentence signifying something true or false and are mostly used as interchangeable terms. However, using the term "propositio" we have to avoid the modern understanding of proposition, or content, as what is asserted or what is expressed by a sentence.

(3) The *scientiae morales* and *naturales* as the counterpart to the *scientiae sermocinales* were sometimes brought together under the integrating concept of *scientiae reales*; cf. [Jakob Hans Josef Schneider, *Scientia sermocinalis / realis*, in: Joachim Ritter and Karlfried Gründer (eds.) *Historische Wörterbuch der Philosophie* 8, Wissenschaftliche Buchgesellschaft Darmstadt 1992, col. 1508].

(4) Cf. [William of Sherwood, *Introductiones in logicam*, in: J. Reginald O'Donnell, *The Syncategoremata of William of Sherwood*, *Medieval Studies* 3 (1941), p. 46-93, p. 2, 1-12].

From: Christoph Kann, "Medieval Logic as a Formal Science", in: Benedikt Löwe, Volker Peckhaus, and Thomas Räscher (eds.), *Foundations of the Formal Sciences IV. The History of the Concept of the Formal Sciences*, London: College Publications 2006, pp. 103-123.

"The specific contribution of mediaeval logicians.

The new elements which the mediaeval logicians have added to the logical theories which had been handed down to them via Boethius, are found embodied in a number of treatises which mainly discourse upon the field of semantics.⁽⁵⁾ To define the exact place of these new elements in mediaeval logic from the twelfth to the fifteenth century, we must recall to mind the mediaeval terminology: *logica vetus*, *logica nova*, *logica antiqua*, and *logica moderna*.

(a) *Logica vetus*. It is a matter of common knowledge, that up to and including the first few decades of the twelfth century the Latin West knew from Aristotle's *Organon* only the *Categories* and *De Interpretatione*. These two works formed, together with the *Isagoge* of Porphyrius, Boethius' commentaries on these three writings as well as his logical monographs, the works of the *ars vetus* or *logica vetus*. From c. 1200 the work *De Sex Principiis*, attributed to Gilbert de la Porrée, also belonged to this group.

(b) *Logica nova*. This comprised Aristotle's two *Analytics*, *Topics* and *Sophistici Elenchi*.

(c) *Logica antiqua* (or *antiquorum*). This name is the generic term for the *ars vetus* and *ars nova* together.

(d) *Logica moderna* (or *modernorum*). This term is the pendant of the preceding and comprises those elements in mediaeval logic which cannot be simply traced back to the writings of the *logica antiquorum*." (pp. 14-15)

Notes

(5) The treatise *De Consequentibus* can be said to be nearer to the logic of propositions.

From: L. M. de Rijk, *Logica Modernorum. A Contribution to the History of Early Terminist Logic*, Assen: Van Gorcum 1962, Vol. I *On the Twelfth Century Theories of Fallacy*.

"It was argued in Trentman [5] that, in spite of the important and obvious differences of opinion that divided them, the medieval logicians were in general agreement on the nature of their task and the way to carry it out. For them logic was analytic and, one might say, reconstructionistic. This character of their discipline was well expressed by St. Anselm in a passage Henry has used to good advantage: *Non tantum debemus inhaerere improprietati verborum veritatem tegenti quantum inhiare proprietati veritatis sub multimodo genere locutionum latenti* (*). (*De casu diaboli*; cf. Henry [4, 6].) Truth lies hidden under the surface structure of everyday speech. The job of the logician is to bring out in a systematic way what lies thus hidden. What is hidden is logical form; we might say that it is the form of thought, and Ockham identifies it with the structure of mental language (Trentman [7]). But we could also say that it is the form of the world; hence, describing it means stating the most general truths about reality. Ockham's mental language is also intended to satisfy this requirement in that it is supposed to be a kind of ideal language directly picturing the world. But logicians sceptical of "Mental" also held firmly to this point of view (Trentman [8]) ; thus a study of logic taught men to speak truly (*vere loqui*). Nor did the dispute about whether logic is *scientia sermocinalis* or a *scientia rationalis* (cf. Kretzmann [9, 10]) really touch this point of fundamental agreement. Medieval logic, therefore, was not formalistic in the sense of a study of uninterpreted calculi. It studied very general truths about reality, reflected in the form of thought and expressed in language. It proceeded by systematic reconstruction, but the "system" that emerged thereby must be viewed as an interpreted system. Of course, contrary to what people sometimes seem to believe, by no means all twentieth-century logicians have been formalists. Indeed, the points of view of Frege and Russell were not unlike that of the medievals, and such otherwise disparate recent logicians as Lesniewski and Bergmann have maintained essentially the same view of logic as an interpreted system.

To say that medieval logic was systematic is not, of course, to say that it was constructed like a modern quasi-axiomatic system. There are no axioms and theorems, no formation rules and the like. Medieval logics were generally presented in the form of lists of rules of inference, often with little or no apparent heed for economy. This does not mean, however, that the logicians were unaware of logical relations between rules. Indeed, in some cases they showed a very perceptive appreciation of the ways in which proofs are constructed and the ways in which some rules may be derived from others (Boh [11]). The medieval logicians, unfortunately, lacked a good notation; indeed, they lacked any notation. Even quotation marks would have helped, as some of the complications with material supposition show. But, although they experimented a bit with something like indicators of quotation, and they commonly used letters for abbreviation, on the whole, they had to make do with ordinary or (as Henry has often reminded us) rather extraordinary Latin. None of them, however, was an "ordinary language" philosopher. Contrary to what John of Salisbury had urged, they did not take the idioms of any ordinary language as an arbiter of logical rectitude. No problems are solved simply by citing ordinary usage. Yet, as Boh [11] points out, it was the "formal aspects of ordinary discourse", that is, the syntax of ordinary language, that provided the material for logical analysis. To this material they brought the tools of their trade. They aimed at reconstructions of puzzling syntactical constructions that would perspicuously reveal the logical forms they concealed. The logicians' business, then, was with the perplexities of ordinary language syntax; on them he used his tools of reconstruction; and the arbiter of his success was an ideal syntax, a syntax reflecting the general form of reality. The theory of supposition was one of the great preoccupations of the later medieval logicians. It was, in fact, at the heart of the studies of *proprietaes terminorum* which so characterized their work and led to their being called "terminists". Owing to the important work of de Rijk [12], its origins are no longer veiled in impenetrable obscurity; but, whatever its origins, it has for some

time been a subject of much fascination for modern scholars and logicians, although, like so many medieval theories, it seems to aim one stone at too many birds; it has to do equally with matters that we should prefer to distinguish as semantic and syntactic. In any case, there has been considerable recent discussion about whether or not a part of it, in particular the theory of personal supposition, constitutes a kind of analogue to modern quantification theory. This debate is interesting, not only in its own right, but also in exemplifying some of the problems involved in attempted comparisons between modern and medieval logical theories."

Notes

(*) [We should not let ourselves be hindered by the improprieties of words which cover up the truth; rather we should seek after the propriety of the truth which is hidden under diverse manners of speaking.]

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(to be continued...)

Latin Logicians before Eleventh Century

Cicero (106 BC 43 BC)

Lucius Apuleius of Madaura (c. 123/125 - 180)

Marius Victorinus (4th century)

Martianus Capella (5th century)

Anicius Manlius Severinus Boethius (c. 480 - 524 or 525)

Byzantine Logicians (from 6th to 12th century)

Alcuin of York (c. 735 - 804)

John Scottus Eriugena (c. 815 - 877)

Logicians of the Eleventh Century

Abbo of Fleury (c. 945 - 1004)

Anselm of Canterbury (1033 - 1109)

Islamic Logicians

Al Kindi (c. 801 - 873)

Al-Farabi (c. 872 - 950/951)

Avicenna (Ibn Sina) (c. 980 - 1037)

Averroes (Ibn Rushd) (1126 - 1198)

Logic and Grammar in Twelfth Century

The anonymous *Glosulae super Priscianum* (written between 1080 and 1150)

Roscelin (c. 1050 - c. 1125)

William of Champeaux (c. 1070 - 1122)

Garlandus Computista [Gerlandus of Besançon] (early 12th century)

[Peter Abelard](#) (1079 - 1142)

Adam Parvipontanus (or Adam of Balsham) (? - 1181)

Gilbert of Poitiers (after 1085 - 1154)

John of Salisbury (c. 1120 - 1180)

Logic and Grammar in Thirteenth Century

William of Sherwood (or Shyyreswood) (1200/5 - 1266/71)

Albert the Great (1200 - 1280)

Peter of Spain (d. 1277)

Robert Kilwardby 1215? - 1279)

Roger Bacon (1215 - 1294)

Henry of Ghent (c. 1217 - 1293)

Ramón Llull (c. 1233 - 1316)

Boethius of Dacia (fl. 1260-1270)

William Heytesbury (? - d. 1272/3)

Simon of Faversham (c. 1260 - 1306)

John Duns Scotus (c. 1266 - 1308)

Radulphus Brito (c. 1270 - 1320)

Logic and Grammar in Fourteenth Century

Pseudo-Scotus (14th century)

Thomas of Erfurt (first quarter of the 14th century)

Walter Burley (c. 1275 - 1344)

Peter Aureoli (c. 1280 - 1322)

Siger of Courtrai (c. 1283 - 1341)

William of Ockham (c. 1287 - 1347)

Robert Holkot (c. 1290 - 1349)

Thomas Bradwardine (c. 1290 - 1349)

[John Buridan \(c. 1300 - after 1358\)](#)

Gregory of Rimini (c. 1300 - 1358)

Nicholas of Autrecourt (c. 1300 - after 1358)

Albert of Saxony (c. 1316 - 1390)

John Wyclif (c. 1330 - 1384)

Marsilius of Inghen (c. 1340 - 1396)

Peter of Mantua (? - d. 1400)

Richard Billingham (fl. 1350 - 1360)

Vincent Ferrer (c. 1350 - 1420/1)

Peter of Ailly (c. 1350 - 1420)

Paul of Venice (c. 1369 - 1429)

Paul of Pergola (1380 - 1455)

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 "George Lokert, an early 16th Century Scottish philosopher logician, published a number of logic books. After a historical introduction "George Lokert" closely examines those books, focusing on their treatment of supposition theory, exponible terms, valid inference, and contradiction. It is shown that much that Lokert says bears closely and interestingly on modern discussions on logic and the philosophy of language."
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"William of Champeaux (1170-1121) is best known as Peter Abelard's teacher and the proponent of realism of universals. In recent years, many works on the linguistic liberal arts -- grammar, dialectic and rhetoric -- have been attributed to him. However, at least in the case of the dialectical commentaries, these attributions have been hastily made and are probably incorrect. The commentaries themselves, correctly situated in the time and place when Abelard and William worked at Notre Dame, nonetheless deserve close attention. The commentaries on Aristotle's *De interpretatione* are examined here: in them we find a new theory of signification which developed as a critical response to William of Champeaux's view of the *vox significativa*, as well as an important clue to the origins of the doctrine of the *proprietaes terminorum*."

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 "The German Johannes Sharpe is the most important and original author of the so called "Oxford Realists": his semantic and metaphysical theories are the end product of

the two main medieval philosophical traditions, realism and nominalism, for he contributed to the new form of realism inaugurated by Wyclif, but was receptive to many nominalist criticisms. Starting from the main thesis of Wyclif's metaphysics, that the universal and individual are really identical but formally distinct, Oxford Realists introduced a new type of predication, based on a partial identity between the entities for which the subject and predicate stood, called predication by essence, and then redefined the traditional post-Aristotelian categories of essential and accidental predication in terms of this partial identity. Sharpe substantially shares the metaphysical view and principles of the other Oxford Realists, but he elaborates a completely different semantics, since he accepts the nominalist principle of the autonomy of thought in relation to the world, and Ockham's explanation for the universality of concepts. Unfortunately, this semantic approach partially undermines his defence of realism, since it deprives Sharpe of any compelling semantic and epistemological reasons to posit universalia in re. Therefore, Sharpe's main ontological theses certainly are sensible and reasonable, but, paradoxically, within his philosophical system they cannot in any way be considered as absolutely consistent."

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"Burlean semantics and epistemology appears to generate a dilemma: (1) if Burley allows simply supposing terms to indicate species, then he accepts the abstraction theory of cognition; and if Burley allows for direct cognition of particulars by the intellect, then his epistemological theory does not reflect his semantics for proper supposition. (2)

either he allows simply supposing terms to indicate a species, or he allows for the direct cognition of singulars. Therefore, either burley accepts the abstraction theory of cognition, or his epistemological theory does not reflect his sensitive theory for proper supposition. The dilemma is taken by the horns, and it is argued that burley's notion of formal supposition, properly interpreted reconciles his epistemic with his semantics for proper supposition."

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 "The question about existential import of singular propositions, already posed by Aristotle, becomes a recurrent topic in medieval logic. Burley solves the question by laying down a distinction between predicates involving or not involving being. A suitable understanding of this point of view requires investigation not only of his doctrine of predication but also of its real basis and has, for this very reason, to survey the Burleian ontology (forms theory and rejection of real distinction between essence and existence)."
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 "Pseudo-Rabanus' commentary, known since Victor Cousin first referred to it, is the earliest commentary on Porphyry's *Isagoge* that was very influential in the beginning of the scholastic logic. The four extant manuscripts give us considerably different versions. Together with a critical edition of each version, this article argues that it was, in its original, a work by William of Champeaux in the late 11th century, and revised by his students in the very early 12th century."
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"In his book on the history of the *De interpretatione* in the Latin West, J. Isaac mentioned Alcuin as the first *medieval* author who referred to Aristotle's *Peri hermeneias* and who showed an unmistakable acquaintance with both of Boethius' commentaries on it. It was Isaac's contention that Alcuin did not have the texts of Boethius at his disposal when writing his *De dialectica*.(1)He must have read these works in England, in York, but when he was on the continent, he no longer had direct access to them anymore. (2)

Isaac arrived at this conclusion for several reasons, which can be summarised as follows: (I) when Alcuin quotes

Boethius, he does not quote him literally; (II) Alcuin borrows illustrating quotations from both of Boethius' commentaries on the *Peri hermeneias* (3) instead of just one of them, so he cites from memory; and (III) if Alcuin had had a complete version of the *Peri hermeneias* on his desk, he would not have given a truncated summary as he does.

While Isaac's conclusion may ultimately be correct, in the end, however, his arguments are not completely convincing. The fact that an author does not quote literally from a work does not imply that he does not have the source text on his desk; moreover, what is a source text in this context?

Furthermore, there might be another reason for giving a truncated summary of a text besides not having this text at one's disposal. Consequently, a closer perusal of the chapter on the *Peri hermeneias* in Alcuin's *De dialectica* is called for. A detailed analysis of the way in which Alcuin used and interpreted his sources may give us a deeper insight into his method and into the reception of his sources, namely the translation of Aristotle's *Peri hermeneias* by Boethius and Boethius' commentaries on this text. In this contribution I shall present some of my findings." pp. 81-82

(1) Alcuin, *De dialectica*, PL 101:951C-976A.

(2) J. Isaac, *Le Peri hermeneias en occident de Boèce a Saint Thomas* (Paris 1953), pp. 39-40.

(3) For an important study of Boethius' commentaries on Aristotle's *Peri hermeneias*, see. John Magee, *Boethius on Signification and Mind* (Leiden, 1989)

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"Dialectic is a standard and important part of the "Logica vetus" (or old logic) in medieval philosophy. It has its ultimate origins in Aristotle's "Topics", its fundamental source in Boethius's "De topics differentiis", and its flowering in its absorption into fourteenth-century theories of consequences or conditional inferences. The chapter on topics in Garlandus Compotista's logic book is the oldest scholastic work on dialectic still extant. In this paper I show the differences between Boethius's theory of topics and Garlandus's in order to illustrate the role of topics in early scholastic logic. I argue that for Garlandus topics are warrants for the inference from the antecedent to the consequent in a conditional proposition and that he is interested in topics because of overriding interest in hypothetical syllogisms. I conclude by discussing briefly the relationship between Garlandus's use of topics and Twelfth-century accounts."
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"A formal analysis is offered of Pseudo-Scotus's theory of the conversion of (I) propositions containing singular terms (including propositions with a singular term as predicate): and (II) propositions with a quantified predicate. An attempt is made to steer a middle course between using the Aristotelian logic as a framework for the analysis, and using a Fregean framework."
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Medieval Theories of Supposition (Reference) and Mental Language

INTRODUCTION

"Interest in medieval logic, and recognition of its significance as an original development of the formal logic founded by Aristotle, has arisen only within the past thirty-five years [*written in 1966*]. For more than three centuries it had been assumed, by logicians and historians alike, that medieval logic was no more than a scholastic trivialization of Aristotelian logic, its principal contribution being a fixation of terminology and invention of the mnemonic verse "Barbara", Celarent" etc., used in teaching the figures and moods of the syllogism. [...] The rediscovery of medieval logic had to wait on the rediscovery of formal logic itself [...] Frege's Begriffsschrift appeared in 1879, but its significance was not appreciated until the beginning of the twentieth century when the Principia Mathematica of Whitehead and Russell gave the major impetus to the development of modern mathematical logic. On the contrary, the leaders of the new movement claimed that nothing had been done to advance the subject between the time of Aristotle and that of Boole, Peirce, Peano and Frege. Two developments which have taken place during the past thirty years have rescued medieval logic from oblivion and have stimulated a steadily increasing study of its content. First, the publication by

Jan Łukasiewicz, in 1934, of a study which showed that the logic of unanalyzed propositions, on which modern mathematical logic rests as its most fundamental part, had been discovered in antiquity by the Stoics, led to the further discovery that the later medieval logicians, in their theory of Consequentiae, had independently developed this fundamental and non-Aristotelian part of logic. In the year 1935 J. Salamucha, a pupil of Łukasiewicz, published a detailed study of the propositional logic of William of Ockham, and in that same year the present writer published (as his doctoral dissertation) the first modern study of Ockham's logical writings as a whole. A second development, which has taken place during the past thirty years within modern logic itself, has been the extension of logical investigations into the fields of semantics, modal logic, and philosophy of language, which turn out to be the areas in which the medieval logicians made their most interesting contributions. By reason of these developments, medieval logic has received increasing study since 1935 by historically minded logicians and by logically educated historians, and fragments of medieval logical doctrine have become part of the stock in trade, so to speak, of many contemporary logicians and philosophers of language.

"From "Ernest A. Moody, "The Medieval Contribution to Logic", *Studium Generale*, Jahr. 19, Heft 8, Heidelberg 1966, pp. 443-452; reprinted in: *Studies in Medieval Philosophy, Science, and Logic*, Berkely: University of California Press 1975, pp. 371-392.

"As the name implies, the theory of properties of terms is intended to provide an account of the different rôles that words can have when they appear as terms in propositions. As a matter of fact these terms are commonly distinguished in Mediaeval logic into such terms as have meaning in their own right (*termini significativi*) and such as are only significant when joined to terms of the first sort (*termini consignificativi*).

The former are also named categorematic terms (*termini categorematici*), the latter syncategorematic terms (*termini*

syncategorematici). However, there seems to be some confusion in so far as syncategorematic terms may be discussed as determining to some extent the actual signification or denotation (=supposition) of the categorematic terms to which they are joined, rather than taken in their own right. It must be borne in mind, then, that when those terms were only taken in their function of determining categorematic terms, Medieval logicians used to deal with them in the tracts on the properties of terms (namely, in the tract *De distributionibus*).

Whenever they were taken as having some kind of meaning (con-significatio) of their own, or when were determinants (functors) of phrases or of simple propositions, there were dealt with in special tracts, such as those entitled *De syncategorematibus*, and *De consequentiis*. Besides, there is another feature peculiar to the Medieval view of the properties of terms: Mediaeval logic apparently assumed that only those categorematic terms truly have significatio which signify forms (or: universal natures), either with the underlying substances of such forms or without. This assumption appears to have widespread in Medieval logic to such an extent, indeed, that the Medieval theory of the properties of terms was, in fact, reduced to a doctrine of significatio in its proper sense. This doctrine was concerned with significatio and its three functions: suppositio, appellatio, and copulatio." (pp. 513-514)

From Lambertus Marie De Rijk, *Logica Modernorum. A Contribution to the History of Early Terminist Logic*, Assen: Van Gorcum & Co., 1967, vol. II, Part one: *The Origin and Early Development of the Theory of Supposition*.

(to be continued...)

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Annotated Bibliography of the Medieval Theories of Supposition and Mental Language: A - L

BIBLIOGRAPHY

1. Adams, Marilyn McCord. 1976. "What Does Ockham Means by *Supposition*?" *Notre Dame Journal of Formal Logic* no. 17:5-37.

"I focus on William Ockham's general account in "Summa Logicae" I, chapter 63, of what it is for a term to supposit for something in a proposition, and consider two interpretations of it. I first construe Ockham as offering the following nominal definition of 'supposition': (I) "Z" supposits for "X" in "P", if and only if "Z" is a term of "p" and 'this is "a"' (where 'this' indicates "x") is true, where general terms are substituted for "'a'"; names of substitutions for "'A'", for "'Z'"; names of propositions for "'P'"; and proper names for "'X'". I argue that (I) is inadequate both as a definition of suppositing-in-some-way-or-other for something or of any particular kind of supposition. An alternative interpretation is to take Ockham as giving his general account of supposition when he says it is being posited for something in a proposition. On this interpretation, less problematic definitions of material and simple supposition are available. But the notion of being

posited for, which is at least as obscure as the notion of supposition, is left unanalysed. On the first interpretation, this is the analysis that (I) is taken to provide."

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"It is often assumed that the logic of terms, including supposition theory, was despised and ignored by the logicians of the sixteenth and seventeenth centuries, in spite of the sophistication with which it had been developed during the later middle ages.

(...)

It is perhaps not surprising that when I looked at some eighty textbooks written during the period in question, I discovered that as many as twenty authors not only referred to the doctrine of supposition sympathetically, but usually went on to offer a detailed analysis which is neither a slavish nor an inept echo of what the mediaeval logicians had said." pp. 260-271

7. ———. 1973. "Priority of Analysis and Merely Confused Supposition." *Franciscan Studies* no. 33:38-41.
Discussion of: Swiniarski "A new presentation of Ockham's theory of supposition with an evaluation of some

contemporary criticism".

"In this paper I criticize the argument put forward by Swiniarski that Ockham should have adopted the priority of analysis rule whereby the subject is analysed before the predicate, and that had he adopted such a rule, merely confused supposition would have become unnecessary. I point out that in later medieval logic explicit priority of analysis rules were adopted, whereby terms with determinate supposition were analysed first, whether they were subject or predicate. I also discuss the use made of merely confused supposition, particularly in the analysis of the relationship between "all A is B" and "only B is A"."

8. ———. 1978. "Multiple Quantification and the Use of Special Quantifiers in Early Sixteenth Century Logic." *Notre Dame Journal of Formal Logic* no. 19:599-613.

"In this paper I discuss two interrelated topics to do with supposition theory and the extensionalist analysis of propositions: 1) the use of 'A' and 'B' as special signs to produce respectively merely confused and determinate supposition in the terms following them; 2) the analysis of such non-standard propositions as 'there are some men all of whose donkeys are running.' In addition, I show how logicians in the medieval tradition handled such invalid inferences as 'every man has a head, therefore there is a head that every man has'."

9. ———. 1981. "Mental Language and the Unity of Propositions: A Semantic Problem Discussed by Early Sixteenth Century Logicians." *Franciscan Studies* no. 41:61-96.

"In the 14th century Gregory of Rimini argued that (1) there is a mental language separate from spoken language and (2) mental propositions are unified wholes with no discernible parts. This article examines the reactions of later logicians, showing that they accepted the doctrine of mental language; but argued that mental propositions must have a discernible structure, which involves parts."

10. ———. 1982. "The Structure of Mental Language: Some Problems Discussed by Early Sixteenth Century Logicians." *Vivarium* no. 20:59-83.
Reprinted in: *Studies in post-medieval semantics*.
"Given their belief in mental language, late medieval logicians felt the need to give some account of its structure. I explore their different views on the part played by syncategorematic terms, impersonal and other verbs, demonstratives, pronouns, case, number and gender. I show that Ockham's views were not universally followed; and I argue that mental language was not necessarily thought of as an ideal logical language."
11. Baccin, Nadia Anna. 1977. "Supposizione Confusa Tantum E Descensus." *Medioevo* no. 3:285-300.
12. Bazán, Bernardo Carlos. 1979. "La Signification Des Termes Communs Et La Doctrine De La Supposition Chez Maître Siger De Brabant." *Revue Philosophique de Louvain* no. 35:345-372.
"Having as his principle objective the study of declarative propositions, of the predicative structure, Siger showed that the meaning of the general term is constant because it refers to changing things signified by the intermediary of the consigned concept. The "intelligible unity" of the essence grasped in the concept is the basis for the unity of the meaning relative to the "existential diversity" of things. The analysis of meaning appears insufficient when one takes into consideration the concrete symbolic function of the term at the centre of a given proposition. It is here that the doctrine of the "suppositio" comes into play. Essentially this doctrine distinguishes between the signifying function of the term and its completing function relative to the diversity of the predicates."
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16. ———. 1994. "La Suposición Semántica Y Su Actualidad. Desarrollo Histórico Y Actualidad De La Teoría Escólastica De La Suposición Semántica." In *Metafísica, Lógica Y Lenguaje En La Filosofía Medieval*, 137-143. Barcelona: Promociones y Publicaciones Universitaria, S.A.
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18. ———, ed. 2009. *Le Langage Mental Du Moyen Âge À L'âge Classique*. Paris: Vrin.

"La connaissance du monde s'exprime en propositions, que celles-ci soient considérées, selon les théories, comme objets ou comme moyens de la science. Le problème de la relation entre ces entités linguistiques et les représentations mental (intellections, intentions, concepts...) a une longue histoire qui remonte au traité *De l'interprétation* d'Aristote et aux commentaires de Boèce. Après Guillaume d'Ockham, en effet, l'idée de langage mental est certes une hypothèse qui a acquis force et consistance, mais tous les problèmes liés à la structuration de la pensée et au rapport entre le langage parlé et la pensée ne sont pas résolus. Des questions surgissent sur la structuration même de ce langage.

Le colloque organisé à Tours du 1er au 3 décembre 2005 sous les auspices de la Fondation européenne de la science (European Science Foundation) avait l'ambition de parcourir ces questions en repartant d'Augustin qui est l'initiale médiévale du problème, et en suivant cette histoire jusqu'à l'aube des Temps modernes. Ce parcours historique

donc fait une part importante au Moyen Âge tardif, à la Renaissance et au XVIIe siècle. En même temps, notre ambition était aussi d'approfondir certains enjeux proprement philosophiques de ce parcours. L'horizon général est la question: est-il possible de considérer le domaine de la pensée comme étant structuré à la manière d'un langage, et par quels moyens conceptuels penser cela?"

Table des Matières: Joël Biard: Présentation V; Isabelle Koch: Le *verbum in corde* chez Augustin 1; Bérangère Hurand: La *locutio mentis*: une version anselmienne du verbe intérieur 29; Cyrille Michon: Les représentations rendent-elles indirecte la connaissance des choses? 45; Irène Rosier-Catach: Une forme particulière de langage mental: la *locutio angelica* selon Gilles de Rome et ses contemporains 61; Russell Friedman: Mental Propositions before Mental Language 95; Claude Panaccio: Le jugement comme acte mental selon Guillaume d' Ockham 117; Simo Knuuttila: Ockham on Fallacies and Mental Language 135; Aurélien Robert: Les deux langages de la pensée. A propos de quelques réflexions médiévales 145; Joël Biard: Pierre d'Ailly: langage, concept, représentation 169; Paloma Pérez-Ilzarbe: Jeronimo Pardo on the unity of mental propositions 185; Henrik Lagerlind: John Mair on Concepts 205; Fosca Mariani Zini: Topique et argumentation dans le premier humanisme italien 221; Marie-Luce Demonet: Que reste-t-il du langage mental dans les textes philosophiques français à la fin de la Renaissance? 241; Martine Pécharman: De quel langage intérieur Hobbes est-il le théoricien? 265; Calvin Normore: The End of Mental Language 293; Jacob Schmutz: Quand le langage a-t-il cessé d'être mental? Remarques sur les sources scolastiques de Bolzano 307; Bibliographie 339; Index Nominum 359 - 364

19. Boehner, Philotheus. 1946. "Ockham's Theory of Supposition and the Notion of Truth." *Franciscan Studies* no. 6:261-292.

Reprinted in: *Collected articles on Ockham* (pp.237-267)

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Text, translation and commentary
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Actes du septième symposium européen d'histoire de la logique et de la sémantique médiévales. Centre d' études supérieures de civilisation médiévale de Poitiers 17 22 Juin 1985.
26. ———. 1997. "Speaking About Signs. Fourteenth-Century Views on Suppositio Materialis." *Amsterdamer Beiträge zur älteren Germanistik* no. 48:71-86.
"The principal questions in my paper are the following: How did the medieval semanticists indicate the autonomous use of words? Does the subject term in such a proposition express a linguistic item (itself, or its likes) because of the determination by the predicate? Or is it dependent on the will or intention of man, the *voluntas utentium*, as Ockham calls it?
Or is it a convention that determines the use of terms? Is a *signum materialitatis* (a sign, or mark, indicating material supposition) necessary? To what extent do the Medievals

distinguish the autonymous use of language from other uses? Or is this kind of language meaningless?
There is hardly any secondary literature on this subject. (*)"
p. 75

(*) M. Bochenski, *Formale Logik* (München 1970 (1956). 188-193; CA. Dufour, *Die Lehre der Proprietates Terrrunorum. Sinn und Referenz in mittelalterlicher Logik* (München/Hamden/Vv'ien 1989). 172-188. (Dufour tries to reconstruct the medieval theory of the properties of terms with the help of modern formal logic. This very interesting study did not obtain the attention it deserves, I feel). E. Karger, 'La supposition matérielle comme supposition significative: Paul de Venise, Paul de Pergola', in *English Logic in Italy in the 14th and 15th Centuries. Acts of the 5th European Symposium on Medieval Logic and Semantics*, Rome, 10-14 november 1980, ed. by A. Maierù (Napoli). 331-342. In a penetrating analysis, Karger discusses the difficulties arising from the 'mentioning' of terms in relation to the general semantical theory of a philosopher.

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28. ———, ed. 2013. *Medieval Supposition Theory Revisited. Studies in Memory of L. M. De Rijk*. Leiden: Brill.
Also published as Volume 51, 1-4 (2013) of *Vivarium*.
Acts of the XVIIth European Symposium for Medieval Logic and Semantics, held the University of Leiden, 2nd, 7th June. 2008.
29. ———. 2077. "Richard Billingham's *Speculum Puerorum*, Some Medieval Commentaries and Aristotle." *Vivarium* no. 45:360-373.
"In the history of medieval semantics, supposition theory is important especially in the twelfth and thirteenth centuries.

In this theory the emphasis is on the term, whose properties one tries to determine. In the fourteenth century the focus is on the proposition, of which a term having supposition is a part. The idea is to analyse propositions in order to determine their truth (probare). The *Speculum puerorum* written by Richard Billingham was the standard textbook for this approach. It was very influential in Europe. The theory of the probatio propositionis was meant to solve problems both in (empirically oriented) scientific propositions such as used by the Oxford Calculators, and theological propositions, especially those about the Trinity. The book is original, concise, but not clear in every respect. Studying medieval commentaries may help us to understand Richard's book. In the present paper three commentaries are presented. The commentators discussed problems about the status of Richard's book, and about its doctrine: what is the relation between probatio and truth, what is the relation between probatio and supposition, what exactly are mediate and immediate terms (e.g. is the pronoun 'this' mediate or immediate?). The commentators sometimes criticize Richard. For example, one of them argues, against Billingham, that the verb 'can' ampliates its subject term and is therefore mediate."

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 "William Ockham developed themes of epistemology which place him in position which can easily be compared to that of modern thinkers. Such is notably the case of his works on mental language, for instance, which bring him closer to certain theories elaborated by Hilary Putnam, especially his theory of representation."
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the Sciences in Medieval Philosophy, edited by Knuuttila, Simo, Tyorinoja, R. and Ebbesen, Sten, 445-454.

Proceedings of the Eighth International Congress of medieval philosophy. Helsinki 24-29 August 1987. vol. II

33. Brown, Deborah J. 1996. "The Puzzle of Names in Ockham's Theory of Mental Language." *Review of Metaphysics* no. 50:79-99.

"In his writings on semantics and logic, William of Ockham combines two very strong claims about mental language: that mental terms are naturally prior to and determinative of the signification of conventional signs and that mental language contains neither synonymous nor equivocal terms.

(1) The first claim represents the role mental language has in explaining the origins, structure, and content of thought and language. Ockham was, as many commentators have observed, a conceptual empiricist but it would be a mistake to think that he was primarily concerned with the psychological processes that underlie our representational system. The second claim indicates that the theory of mental language is primarily a theory of signification or a semantics. The notion of a redundancy-free mental language is an idealization crafted for its explanatory role in Ockham's semantics.

The notion of a mental language devoid of synonymous and ambiguous terms raises puzzles which threaten the internal coherence of the project. These puzzles concern a species of categorematic terms in mental language, Ockham's absolute terms, and are not unlike the puzzles about proper names in Kripkean semantics. Although I am skeptical that Ockham's theory is adequate to the dual tasks of being a semantics as well as a psychological thesis, I shall argue that the wrong response to these puzzles is to forfeit the theory's status as a semantic theory by giving up the commitment to parsimony."

(1) Ockham's most sustained development of the theory of mental language is in *Summa Logicae* I, in *Opera*

Philosophica I, ed. Philotheus Boehner, Gedeon Gal, Stephen S. Brown (St. Bonaventure, NY: The Franciscan Institute, 1974).

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"This early work of Walter Burleigh (written circa 1302), here edited, is one of the sources of Ockham's "Summa logicae". At times it supplies Ockham with material he adopts; at times it shares with the works of others the role of opposition. Also it is one of the sources which Ockham opposes in his 'commentary on the sentences'. In relation to earlier works of the 12th and 13th centuries it shows some technical advances while essentially holding onto the traditional teaching. Burleigh's later treatment of supposition in the 'de puritate' is a restatement of this early treatise in light of Ockham's 'Summa logicae' critique of the 'realist' position."
35. ———. 1975. "Gerard Odon's *De Suppositionibus*." *Franciscan Studies* no. 35:5-44.
New edition by L. M. De Rijk as: *Liber Secundum: De suppositionibus* (pp. 231-292) in: Giraldus Odonis O. F. M. *Opera Philosophica* - volume one: *Logica* - Critical editions from the manuscripts - Leiden, Brill, 1997
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In appendix: Walter Chatton: *Lectura in I Sent.* 4.1.1-2.
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"The framework of conceptual realism provides a logically ideal language within which to reconstruct the medieval terminist logic of the 14th century. The terminist notion of a concept, which shifted from Ockham's early view of a concept as an intentional object (the *fictum* theory) to his later view of a concept as a mental act (the *intellectio* theory), is reconstructed in this framework in terms of the idea of concepts as unsaturated cognitive structures.

Intentional objects (*ficta*) are not rejected but are reconstructed as the objectified intentional contents of concepts.

Their reconstruction as intentional objects is an essential part of the theory of predication of conceptual realism. It is by means of this theory that we are able to explain how the identity theory of the copula, which was basic to terminist logic, applies to categorical propositions. Reference in conceptual realism is not the same as supposition in terminist logic. Nevertheless, the various "modes" of personal supposition of terminist logic can be explained and justified in terms of this conceptualist theory of reference."

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"This exposition of Ockham's theory of (common, personal) supposition involves the logical form of the four descent/ascent conditions and the logical relations of these with the three main modes of supposition. Central theses: each condition is a one-way entailment, each mode is a truth-functional combination of conditions, two of the three modes are not even coextensive with the two-way entailments commonly taken as their definitions. Ockham's idea of "the singulars" of a general proposition is vague and problematic and the entailment used in the descent/ascent conditions probably cannot be taken to be logical consequence in any strict sense."

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"The present volume is a detailed and original study of the traditional, doctrine of terms. It can be regarded as an attempt to tackle the question: ,How would the scholastic philosophers have conceived and defended their doctrine had they had at their disposal the methods and techniques of contemporary logic and semantics? The answer provided, a systematic reconstruction of a number of important ideas in the history of logic, is both formally illuminating and entirely faithful to the relevant text.
The work begins with a general exposition of the doctrine of terms oriented around the basic semantic opposition

between significatio and suppositio, analogues of the more familiar notions of sense and reference.

As a means of providing a precise and coherent reconstruction of the doctrine the author does not simply provide the predictable translation of the more amenable passages into the language of predicate logic. Rather he develops, on the basis of a careful systematization of the texts themselves, a formalization of his own, incorporating an ontology of substance and accident. The advantages of this approach are revealed in its capacity to provide both a simple reconstruction of syllogistic logic by means of a sequent-calculus and a natural extension of this logic to a theory of supposition.

Taking into consideration the categories of substance and accident in place of the more usual apparatus of set and element allows the author to develop a formalized theory of objects in which the two categories are allowed to yield composite objects of various sorts. This makes possible an illuminating application of the theory of concreta and abstracta (square of permutations) both to the theory of ampliatio and appellatio and to modal syllogistics.

The work concludes with a sketch of possible further developments and an attempted demonstration of the philosophical relevance of the theory in the light of a critical consideration of the relevant secondary literature."

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"English late 13th century logicians paid greater attention to the reference (suppositio) of terms than contemporary Parisian logicians ('modistae'), who concentrated on the unchangeable meaning (significatio) allotted to terms by 'impositio'. Discussions of the sophism 'this is a dead man, therefore this is a man' revealed weaknesses in modism and contributed to the 14th century acceptance of ockham-style suppositio semantics at Paris (Buridan & al.). Appendix contains texts by Radulphus Brito and two anonymi."

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"The theory of supposition with the associated theories of *copulatio* (sign-capacity of adjectival terms), *ampliatio* (widening of referential domain), and *distributio* constitute one of the most original achievements of Western medieval logic. There is nothing really similar in any ancient text the medievals knew -though surely some Stoic writings once contained investigations of the problems these theories deal with -- nor had contemporary Byzantium anything similar. The twelfth century produced a considerable harvest of rules about the referential range of terms in various contexts. When the 13th century arrived, a standard terminology had prevailed with such names as *suppositio confusa* and *suppositio determinata* for some particularly important types of referential range and a chapter on supposition had become a standard feature of Introductions to Logic (*summulae*). But then the development of the theory stopped. It appears that at least on the Continent, the chapter on supposition in the *summulae* became one that young students would be taught very early in their career, perhaps before entering university; and then forget all about through the rest of their student career.

In this paper I shall refrain from listing treatises 'de suppositionibus'; I shall on the whole refrain from following the developments of terminology and systematics. The spade-work in those fields has been done by De Rijk in his *Logica Modernorum*.

I >will try to point to and explain some characteristic features of 12th and early 13th speculation about supposition without going into details and without paying much attention to the opinions of individual authors, not even when they protest they disagree with something I say

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10. ———. 1984. "A Note on Ockham's Theory of Modes of Common Personal Supposition." *Franciscan Studies* no. 44:81-96.
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"In a recent paper Paul Vincent Spade suggests that, although the medieval doctrine of the modes of personal supposition originally had something to do with the rest of the theory of supposition, it became, by the 14th century, an unrelated theory with no question to answer. By contrast, I argue that the theory of the modes of personal supposition

was meant to provide a way of making understandable the idea that a general term in a categorical proposition can be used to refer to the individual things that fall under it. Once that idea had been made acceptable, truth conditions for the various forms of categorical proposition could be given without any specific appeal to the ideas of descent and ascent in terms of which the modes had been defined."

12. Maurer, Armand. 1981. "William of Ockham on Language and Reality." In *Miscellanea Mediaevalia*, edited by Beckmann, Jan P., 795-802. New York: de Gruyter. Translated in Italian in: *Logica e linguaggio nel medioevo* - Edited by Fedriga Riccardo and Puggioni Sara
13. Meier-Oeser, Stephan. 1999. "Thinking as Internal Speaking: Some Remarks on the Conceptual Changes in the Relation between Language and Thinking from Middle Ages to Condillac." In *Signs and Signification. Vol. I*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 175-194. New Delhi: Bahri Publications.
14. ———. 2000. "The Meaning of 'Significatio' in Scholastic Logic." In *Signs and Signification. Vol. II*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 89-107. New Delhi: Bahri Publications.
"Studies in scholastic theories of signification usually focus on what Roger Bacon (*De signis*: 132) has called the "difficilis dubitatio utrum vox significet species apud animam an res" (the difficult question, whether spoken words signify mental concepts or things), or, in Scotus' words (*Ordinatio*, vol. 6: 97), the "magna altercatio... de voce, utrum sit signum rei vel conceptus" (the great altercation, whether the spoken word is a sign of the thing or of the concept). But as interesting and important this question may be, it covers just one aspect of the numerous and complex problems linked with the scholastic concept of 'significatio'. For since scholastic terminology generally made a clear cut distinction between 'significatio' and 'significatum', the two questions, what words signify (or

what their significatum is), and what signification itself may be, lead in different directions. By leaving aside the former question, I shall concentrate on the latter.

The question about meaning or signification is deemed, especially since the 'linguistic turn', to be one of the most fundamental questions, philosophy has to account for. Of course, it is by no means a recent question. And yet it is, in a specific sense, not as old as one might suggest. It may be controversial, whether the problem of meaning ('Bedeutungsproblem'), as Weisbergerer (1930:17f) has stated, did not matter in classical Greek philosophy, or, as Cassirer (1925: 86) has claimed, already for Plato made up the "starting point of philosophy", whether Aristotle in the first chapter of his *Peri hermeneias* had offered "not even a sketch of a general theory of meaning" (Kretzmann 1974:5), or at least the "rudiments of a semantic theory" (Weidemann 1982). What has to be noticed, is, that the very term and concept of signification had not yet become a problem in classical Greek philosophy -- and could not even have been as such, due to the simple fact, that a concept of meaning or signification in a terminological sense did not exist. Indeed, the word or linguistic sign (*semainon*) was said to signify or mean something (*semainei ti*) and speech (*logos*) was characterised as significative (*semantikós*). But whereas in modern translations this is usually expressed in terms of words having meaning. there is, as far as I can see, at least in classical Greek no equivalent noun for 'meaning' or 'Bedeutung'. The history of terminology shows, that the corresponding Greek noun of the latin '*significatio*' was *semasia*'. But the earliest evidence for the use of '*semasia*' in the sense of meaning (of a word) seems to be a passage in the *De signis*, written by the Epicurean Philodemus of Gadara around the middle of the first century. In all earlier occurrences this term means 'sign' or 'signal' or an act of signalising (cf Ebert 1987:108sq.).

So it seems as if semantics is not necessarily in need of the concept of signification or meaning. Because for quite a long time philosophy did not even have a word for it. But once introduced, it could give rise to such problems, as, referring to the concept of meaning, Charles Morris (1971:95) has pointed out by noticing that " 'meaning' signifies any and all phases, of sign-processes (the status of being a sign, the interpretant, the fact of denoting, the significatum)".

By considering the meaning of 'significatio' in scholastic logic, I do not intend to give a comprehensive outline of the various theories of signification that have been worked out by that tradition, but rather want to confine myself to the more modest purpose of giving an account of the use of that term in scholastic logic. So, even if the title of my paper seems to offend the Wittgenstein's prominent advice "don't ask for meaning, ask for use", I will observe it insofar, as I am going to *take a look at the concrete use of 'meaning' or rather 'signification' in scholastic logic, which however, as we shall see, not quite the same. By so doing, I do not intend to establish something like the scholastic meaning of signification.* For if we are told by Wittgenstein and many others, that "the meaning of a word is its use in language", we will be confronted here with the fact, that the usage of 'significatio' -- and thus its 'meaning' -- is highly divergent in itself."

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Ebert, Th. 1987. The origin of the Stoic theory of signs in Sextus Empiricus, Oxford Studies in Ancient Philosophy 5, 83-126.

Kretzmann, N. 1974. Aristotle on Spoken Sound Significant by Convention, in: J. Corcoran (ed.): Ancient Logic and Its Modern Interpretation (Dordrecht, Boston) 3-21.

Morris C. W. 1971. Signs, Language and Behavior, in: Writings on the general 'Theory of Signs (The Hague).

Weidemann, H. 1982. Ansätze zu einer semantischen Theorie bei Anstoteles: Zeitschrift für Semiotik 4, 241-257.
Weigerber, L. 1930. Sprachwissenschaft und Philosophie zum Liedeutungsproblem, in: Blätter für Deutsche Philosophie 4.

15. ———. 2004. "Mental Language and Mental Representation in Late Scholastic Logic." In *John Buridan and Beyond: Topics in the Language Sciences, 1300-1700*, edited by Friedman, Russell and Ebbesen, Sten, 237-265.

Copenhagen: C. A. Reitzel.

"Traditionally the two main paradigms for describing and explaining processes of thought and mental representation have been thought as image and thought as language.

Whereas in present-day debates these paradigms are treated as mutually exclusive, in scholastic theories of cognition and mental language they were often amalgamated in various ways. By tracing pertinent discussions from the fourteenth to the seventeenth centuries, the article points to some consequences of this amalgamation both for the notions of image and of likeness and for approaches to thought as language."

16. Miller, Barry. 1973. "Proper Names and *Suppositio Personalis*." *Analysis* no. 33:133-137.

"The question is whether a proper name (e.g., "Tom") may be used in a way that parallels that of "man" in "man is a species". "Tom is an individual" is the answer proposed, with "individual" functioning as a second order term. A number of difficulties are resolved by showing that "Tom is an individual" may be rendered as "a man is (in English) called 'Tom' and is so constituted that only he may without ambiguity be called 'Tom'. This shows that "Tom" in "Tom is an individual" is neither purely a first order nor purely a second order term."

17. Miralbell, Ignacio. 1989. "La Transformación Ockhamista De La Teoría De La Suposición." *Sapientia* no. 44:111-136.

Reprinted in: Guillermo de Ockham y su crítica lógico-pragmática al pensamiento realista pp. 51-88

18. Morujão, Carlos. 2005. "A *Logica Modernorum*: Lógica E Filosofia Da Linguagem Na Escolástica Dos Séculos Xiii E Xiv." *Revista Filosófica de Coimbra* no. 14:301-322.
"This essay approaches two of the main contributions of medieval logic to the history of logic and the philosophy of language: the doctrine of *suppositio* and that of *consequentiae*. The aim here is to demonstrate that although medieval logic depended on the syntactical structure of Latin, authors managed to reach a high level of understanding regarding strictly logical problems, not only anticipating some theories from modern semantics, but also predicate calculus and sentential calculus. This research, especially after the 13th century, developed in complete isolation from Aristotelian logic, particularly its doctrines of syllogism and declarative sentence. It also revealed enormous originality and creativity regardless of the contribution that stoic logic known from the works of Cicero and Boethius may have had.
19. Müller, H.J. 1968. *Die Lehre Vom Verbum Mentis in Der Spanischen Scholastik. Untersuchungen Zur Historischen Entwicklung Und Zum Verständnis Dieser Lehrer Bei Toletus, Den Conimbricensern Und Suarez*, University of Münster, Westfalia.
20. Muñoz Delgado, V. 1986. "La Suposición De Los Términos En Juan De Oria Y Otros Lógicos Salmantinos (1510-1535)." In *Homenaje a Pedro Sainz Rodriguez. (Volume Iv)*, 335-367. Madrid: Fundación Universitaria Española.
21. Muñoz Garcia, Angel. 1990. "La 'Confusa' Suposición Sólo Confusa." *Analogia* no. 4 (2):113-141.
22. ———. 1991. "A Propósito De La Suposición Habitual." In *Itinéraires D'albert De Saxe*, edited by Biard, Joël, 125-136. Paris: Vrin.
23. ———. 1991. "Es La Determinada Una Suposición Distributiva?" *Medioevo* no. 17:309-346.

24. Normore, Calvin Gerard. 1990. "Ockham on Mental Language." In *Historical Foundations of Cognitive Science*, edited by Smith, J.C., 53-70. Dordrecht: Kluwer.

"Thanks largely to the work of Noam Chomsky, we have witnessed over the last thirty years a revival of interest in two closely related ideas: that there is a universal grammar, a set of structural features common to every human language, and that the exploration of this grammar is, in part, an exploration of the structure of thought.

Fourteenth century grammarians and philosophers were also interested in this complex of questions, and debate about them raged as vigorously then as now. One tradition in this debate grew out of thirteenth century terminist logic and seems to have been given a distinctive shape by William Ockham. This tradition posited a fully-fledged language of thought common to all rational beings and prior to all linguistic convention. In this essay I will attempt to outline Ockham's account of this mental language, to consider some fourteenth century objections which lead to the refinement of the account by others in the fourteenth century, and finally to suggest that Ockham's approach has something to contribute to current debate about the relationship between the theory of meaning and any language of thought.

At the very beginning of his *Summa Logicae* Ockham claims that there are three distinct types of language: written, spoken, and mental. He insists that written and spoken language are distinct in kind and that there is a type of language whose terms are concepts and which exists only in the mind. (1)

Ockham's mental language plays several distinct roles within his philosophy. On the one hand, mental language figures crucially in the semantics of spoken and written language. On the other hand, mental language is a fully articulated language which is suited to be spoken by natural telepaths and is spoken by the angels. These two kinds of role require very different features of mental language,

features which, as we shall see, sometimes pull its structure in opposite directions."

(1) Cf. W. Ockham, *Summa Logicae* I. C. 1 in P. Boehner, G. Gal, S. Brown (eds.), *Opera Philosophica* (St. Bonaventure, NY: The Franciscan Institute, 1974).

25. ———. 1997. "Material Supposition and the Mental Language of Ockham's *Summa Logicae*." *Topoi* no. 16 (1):27-33.
26. Novaes, Catarina Dutilh. 2000. *A Study of William of Ockham's Logic - from Suppositio to Truth Conditions*, University of Amsterdam.
27. ———. 2003. *A Teoria Da Suposição De Guilherme De Ockham. Uma Reconstrução*.

Master's thesis defended at the University of São Paulo, for the obtention of the MA degree in April 2003.

"This work is the result of my attempts to combine my Philosophy background with the Mathematical Logic inclinations of the institution within which this research was developed. In fact, this twofold character is noticeable in many features thereof; I shall now outline some of them. The project has two main purposes: the less risky one is to provide an account of William of Ockham's logical thinking, with focus on its aspects which bear a relation with the contemporary issues of intensional logics and possible-world semantics. The more risky one consists of investigating the possibilities of developing a purely extensional treatment of intensional contexts, such as tense and modalities. For the latter, some other extensional/nominalistic systems could have played the role of 'experimental sample', but there seemed to be something intriguing about Ockham, as one wonders whether a philosopher from the XIVth century would have something relevant to add to our present logical issues. Moreover, he is considered to be the founder of nominalism, so the historical interest of such enterprise was self-evident - therefore, the legitimacy of the first purpose. I shall try to

comply with two very distinct kinds of expectations: those which are the desiderata for a History of Philosophy work, and those of logicians, who are interested in the formal correctness of the system hereby presented. The criteria of excellence of these two lines are almost incompatible, and one wonders if it is not a suicidal enterprise to try to combine them. On the one hand, an Ockham scholar may be discontent with the absence of a few important aspects of Ockham's logic, since I deliberately prioritize those related to contemporary logic. On the other hand, a logician may be bothered by the presence of too many 'antiquities', perhaps hindering logical clarity. So, at the risk of displeasing everybody, I nevertheless maintain that such a combination may turn out to be fruitful and informative to both sides. Chapter 1 will display some fundamental aspects of Ockham's logic and semantics, in a rather historical approach. However, even this part is developed taking into account what I later shall want to establish as my version of an 'ockhamist system'. I consider it to be the flaw of many such reconstructions that they do not undertake a serious analysis of the underlying concepts; alternatively, some which did rely on such an analysis have reached very interesting results. Chapter 2 relates some apparently less central (when compared to supposition theory, for example) issues of Ockham's theory to relevant topics of Contemporary Philosophy, such as possible worlds, designation, demonstratives etc... In this chapter I also introduce conceptual tools which I will make use of for the reconstruction undertaken in chapter 3. Finally, Chapter 3 is an attempt to provide truth conditions for quantified, modal and tense propositions, based on the truth of singular propositions. I hereby hope to reach a rather broad account of Ockham's thinking, even though my main target is to build a coherent and correctly structured reconstruction of his theory of propositions."

28. ———. 2007. "Theory of Supposition Vs. Theory of Fallacies in Ockham." *Vivarium* no. 45:343-359.

"I propose to examine the issue of whether the ancient tradition in logic continued to be developed in the later medieval period from the vantage point of the relations between two specific groups of theories, namely the medieval theories of supposition and the (originally) ancient theories of fallacies. More specifically, I examine whether supposition theories absorbed and replaced theories of fallacies, or whether the latter continued to exist, with respect to one particular author, William of Ockham. I compare different parts of Ockham's *Summa Logicae*, namely III-4 (on fallacies), and the final chapters of part I and first chapters of part II (on supposition). I conclude that there is overlap of conceptual apparatus and of goals (concerning propositions that must be distinguished) in Ockham's theories of supposition and of fallacies, but that the respective conceptual apparatuses also present substantial dissimilarities. Hence, theories of supposition are better seen as an addition to the general logical framework that medieval authors had inherited from ancient times, rather than the replacement of an ancient tradition by a medieval one. Indeed, supposition theories and fallacy theories had different tasks to fulfil, and in this sense both had their place in fourteenth century logic."

29. ———. 2007. *Formalizing Medieval Logical Theories. Suppositio, Consequentiae and Obligationes*. New York: Springer.

Contents: Introduction I-XII; 1. Supposition theory: algorithmic hermeneutics 7; 2. Buridan's notion of *Consequentia* 79; 3. *Obligationes* as logical games 145; 4. The philosophy of formalization 215; Conclusion 293; References 301; Index of names and topics 310.

"This book presents novel formalizations of three of the most important medieval logical theories: supposition, consequence and obligations. In an additional fourth part,

an in-depth analysis of the concept of formalization is presented - a crucial concept in the current logical panorama, which as such receives surprisingly little attention. Although formalizations of medieval logical theories have been proposed earlier in the literature, the formalizations presented here are all based on innovative vantage points: supposition theories as algorithmic hermeneutics, theories of consequence analyzed with tools borrowed from model-theory and two-dimensional semantics, and obligations as logical games. For this reason, this is perhaps the first time that these medieval logical theories are made fully accessible to the modern philosopher and logician who wishes to obtain a better grasp of them, but who has always been held back by the lack of appropriate 'translations' into modern terms. Moreover, the book offers a reflection on the very nature of logic, a reflection that is prompted by the comparisons between medieval and modern logic, their similarities and dissimilarities. It is thus a contribution not only to the history of logic, but also to the philosophy of logic, the philosophy of language and semantics. The analysis of medieval logic is also relevant for the modern philosopher and logician in that, being the unifying methodology used across all disciplines at that time, logic really provided unity to science. It thus presents a unified model of scientific investigation, where logic plays the aggregating role."

30. ———. 2008. "An Intensional Interpretation of Ockham's Theory of Supposition." *Journal of the History of Philosophy* no. 46:365-394.

"According to a widespread view in medieval scholarship, theories of supposition are the medieval counterparts of theories of reference, and are thus essentially extensional theories. The author proposes an alternative interpretation: theories of supposition are theories of properties of terms, but whose aim is to allow for the interpretation of sentences. This holds especially of Ockham's supposition theory, which

is the main object of analysis in this paper. In particular, she argues for my intensional interpretation of his theory on the basis of two key-phrases in his *Summa Logicae*: 'denotatur' and 'propositio est distinguenda'. Finally, she offers a reconstruction of his theory as a set of instructions to be carried out in order to generate the possible readings of (certain) sentences."

31. Nuchelmans, Gabriel. 1983. "Medieval Problems Concerning Substitutivity." In *Atti Del Convegno Internazionale Di Storia Della Logica (San Gimignano, 4-8 December 1982)*, edited by Abrusci, Vito Michele, Casari, Ettore and Mugnai, Massimo, 69-80. Bologna: CLUEB.
32. ———. 1992. "Some Remarks on the Role of Mental Sentences in Medieval Semantics." *Histoire, Épistémologie, Langage* no. 14:47-59.
 "After introducing the notion of mental language as it was developed especially by William of Ockham this article focuses on the role of mental sentences in the logical interpretation of belief-ascriptions. First, the divergent positions advocated by Frege and Searle are outlined. Next, it is asked how the fourteenth-century Parisian logician Jean Buridan might have handled such statements as 'The sheriff believes that Mr. Howard is an honest man'. It is concluded that in spite of many superficial differences, at bottom Buridan's view is rather similar to Searle's account. In particular, both authors hold that in reported speech the words 'Mr. Howard is an honest man' keep their usual meaning as far as reference and predication are concerned."
33. Panaccio, Claude. 1979. "*Suppositio Naturalis* Au Xiii Siècle Et Signification Chez Guillaume D'occam." In *Abstracts of the Vith International Congress of Logic. Methodology, and Philosophy of Science. Sections 13 and 14*, 137-140. Hannover.
34. ———. 1983. "Guillaume D'occam: Signification Et Supposition." In *Archéologie Du Signe*, edited by Brind'Amour, Lucie and Vance, Eugène, 265-286. Toronto: Pontifical Institute of Mediaeval Studies.

35. ———. 1990. "Supposition Naturelle Et Signification Occamiste." In *De Ortu Grammaticae. Studies in Medieval Grammar and Linguistics Theory in Memory of Jan Pinborg*, edited by Bursill-Hall, Geoffrey L., Ebbesen, Sten and Koerner, Konrad, 255-269. Amsterdam, Philadelphia: John Benjamin Publishing Company.
36. ———. 1990. "Connotative Terms in Ockham's Mental Language." *Cahiers d'Épistémologie*:1-22.
37. ———. 1992. "From Mental Word to Mental Language." *Philosophical Topics* no. 20 (2):125-147.
38. ———. 1992. "Intuition, Abstraction Et Langage Mental Dans La Théorie Occamiste De La Connaissance." *Revue de Métaphysique et de Morale* no. 97 (1):61-82.
39. ———. 1996. "Le Langage Mental En Discussion: 1320-1335." *Etudes Philosophiques*:323-339.
40. ———. 1996. "Des Signes Dans L'intellect." *Cahiers d'Épistémologie*:1-30.
Reprinted in: Harjett Singh Gill and Giovanni Manetti (eds.) - *Signs and Signification* - Vol. II. New Delhi, Bahri Publications, 2000, pp. 63-88.
41. ———. 1997. "Angel's Talk, Mental Language, and the Transparency of the Mind." In *Vestigia, Imagines, Verba. Semiotics and Logic in Medieval Theological Texts (Xiiith-Xivth Century). Acts of the Xith Symposium on Medieval Logic and Semantics. San Marino, 24-28 May 1994*, edited by Marmo, Costantino, 323-335. Brepols.
42. ———. 1999. *Le Discours Intérieur. De Platon À Guillaume D'ockham*. Paris: Editions du Seuil.
Sur ce livre voir: *Laval Théologique et Philosophique*, vol. 57 n. 2 (June 2001).
Table: Avant-propos 13; Introduction 17; Première Partie: Les Sources; 1. Platon et Aristote 29; 2. *Logos endiathetos* 53; 3. *Verbum in corde* 94; 4. *Oratio mentalis* 120;
Deuxième Partie: Les controverses du XIII siècle; 5. Triple est le verbe 153; 6. L'acte contre l'idole 177; 7. Le concept et le signe 202; 8. De quoi la logique parle-t-elle? 228;
Troisième Partie: La *Via moderna*; 9. L'intervention

d'Ockham 253; 10. 10. Réactions 279; Conclusion 305; Bibliographie 321; Index des noms 335-342.

43. ———. 1999. "Grammar and Mental Language in the Pseudo-Kilwardby." In *Medieval Analyses in Language and Cognition. Acts of the Symposium: The Copenhagen School of Medieval Philosophy, 10-13 January, 1996*, edited by Ebbesen, Sten and Friedman, Russell, 397-413. Copenhagen: C. A. Reitzels.

"In his commentary on the Priscianus Major, the author known as the Pseudo-Kilwardby proposed inner speech as the proper object for scientific grammar. It is shown here that this *sermo in mente* is something quite different from William of Ockham's later *oratio mentalis* it is a mental representation of words and not of things in general. The Pseudo-Kilwardby, in effect, delineates a purely intellectual level of linguistic representation, with a universal deep structure richly furnished. This doctrinal development is situated in its context, against the background of the increasing popularity of Aristotle's *Posterior Analytics* at the mid thirteenth-century university."

44. ———. 1999. "Semantics and Mental Language." In *The Cambridge Companion to Ockham*, edited by Spade, Paul Vincent, 53-75. Cambridge: Cambridge University Press. "At the outset of *Summa Logicae*, Ockham endorses Boethius's old distinction between three sorts of discourse: written, spoken, and mental. The first two, he explains, are physically perceptible, whether by the eye or by the ear, and are made up of conventional signs. The units of mental language, by contrast, are concepts. They are internal to thinking minds, and their signification is natural rather than conventional. Being mental, they are not directly perceptible - at least not in this world - to anybody but the person who internally produces them in the course of his or her private thinking. But being originally acquired as the result of a natural process, they are nevertheless strongly similar - and identically organized - from one human being to another."

Although it is not a public medium of communication, mental language is potentially common to all. Mental language is prior to, and underlies, every reasonable speech utterance and provides it with meaning. Ockham's semantical theory, as presented in *Summa Logicae* and elsewhere, is primarily an explication of the various ways in which the natural conceptual signs that constitute the language of thought are linked with their external referents; and secondarily, of the ways in which conventional discourse is derived from this mental language."

45. ———. 2000. "Guillaume D'ockham, Les Connotatifs Et Le Langage Mental." *Documenti e Studi sulla Tradizione Filosofica Medievale* no. XI:297-316.
Updated translation of: *Connotative Terms in Ockham's Mental Language*.
46. ———. 2001. "Réponses De L'auteur. De Quelques Variations Sur Un Thème Séculaire." *Laval Théologique et Philosophique* no. 57:261-276.
"This paper replies to questions raised by Claude Lafleur, Martin Achard, Paul-Hubert Poirier, David Piché and Marie-Andrée Ricard about the author's book, *Le discours intérieur* (1999). The following points are discussed: the methods of historical work in philosophy (with reference to Alain de Libera's ideas on the subject), the treatment of the notion of *logos endiathetos* in Stoic thought, in Philo of Alexandria and in Irenaeus of Lyon, the relations between philosophy and theology in medieval Scholasticism, and those of hermeneutics with Augustine's understanding of the inner word."
47. ———. 2003. "Debates on Mental Language in the Early Fourteenth Century." In *Aristotle's Peri Hermeneias in the Latin Middle Ages Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G. and Kneepkens, Corneille Henry, 85-101. Groningen: Ingenium Publishers.
48. ———. 2003. "Ockham and Locke on Mental Language." In *The Medieval Heritage in Early Modern Metaphysics and*

Modal Theory, 1400-1700, edited by Friedman, Russell and Nielsen, Lauge, 37-52. Dordrecht: Kluwer.

"For both Ockham and Locke, the objects of knowledge and belief are mental propositions really composed of simpler mental units called 'concepts' in Ockham and 'ideas' in Locke. These units are, for both philosophers, natural signs of external things and the primary repositories of generality. Despite these striking similarities, the paper argues that these two theories belong in fact to different and incompatible families. This is shown by focusing on two crucial differences between them concerning (a) signification, and (b) reference (or 'suppositio')."

49. ———. 2003. "Connotative Concepts and Their Definitions in Ockham's Nominalism." In *La Tradition Médiévale Des Catégories (Xii-Xve Siècles)*, edited by Biard, Joël and Rosier-Catach, Irène, 141-155. Louvain: Peeters.

50. ———. 2004. *Ockham on Concepts*. Aldershot: Ashgate.

51. ———. 2004. "Tarski Et La Suppositio Materialis." *Philosophiques* no. 31:295-309.

"In his 1944 paper *The Semantic Conception of Truth and the Foundations of Semantics*, Alfred Tarski refers in so many words to the medieval idea of "suppositio materialis". The interpretation he suggests for it, however, is historically misleading, and this historical inaccuracy yields in this case what can be taken to be an unfortunate philosophical mistake. In " 'snow is white' is true ", Tarski sees the phrase "snow is white" (between quotation marks) as the name of a certain sentence, while the medieval philosophers would have seen it rather as an occurrence of that very sentence, but taken in a special use, the suppositio materialis . The paper shows how these two approaches differ exactly and argues that the medieval theory is philosophically preferable in that (1) it is descriptively more adequate with respect to natural languages, (2) it is more appropriate even for artificial languages, which it renders both more effective and more intelligible, and (3) it rests upon the identification

of an important phenomenon, the generality of which is missed by the Tarskian type semantics, namely the duality of principle between the extension of a term in itself and the extension it receives within a given propositional context."

52. ———. 2005. "Le Paradoxe Du Menteur Et Le Langage Mental: Réflexions Sur L'approche Restrictionniste." In *Logique Et Ontologie: Perspectives Diachroniques Et Synchroniques*, edited by François, Beets and Gavray, Marc-Antoine, 55-71. Liège: Éditions Université de Liège.

"Restrictionism is an approach to the Liar paradox and related puzzles that was quite popular in the thirteenth and early fourteenth century.

The idea is to resort to a rule restricting the reference of certain terms (their 'suppositio') in certain propositional contexts. But how are such apparently *ad hoc* rules supposed to govern thought itself, or mental language? This objection was raised against restrictionism by Thomas Bradwardine and John Buridan (around 1330), and was considered decisive. The present paper re-examines this discussion and re-evaluates in consequence the prospects that remain for a defensible form of restrictionism."

53. ———. 2007. "Guillaume D'Ockham Et Les Syncatégorèmes Mentaux: La Première Théorie." *Histoire, Épistémologie, Langage* no. 25:145-160.

54. ———. 2007. "Mental Language and Tradition Encounters in Medieval Philosophy: Anselm, Albert and Ockham." *Vivarium* no. 45:269-282.

"Medieval philosophy is often presented as the outcome of a large scale encounter between the Christian tradition and the Greek philosophical one. This picture, however, inappropriately tends to leave out the active role played by the medieval authors themselves and their institutional contexts. The theme of the mental language provides us with an interesting case study in such matters. The paper first introduces a few technical notions-'theme', 'tradition', 'textual chain' and 'textual borrowing'-, and then focuses on

precise passages about mental language from Anselm of Canterbury, Albert the Great and William of Ockham. All three authors in effect identify some relevant Augustinian idea (that of 'mental word', most saliently) with some traditional philosophical one (such as that of 'concept' or that of 'logos endiathetos'). But the gist of the operation widely varies along the line and the tradition encounter is staged in each case with specific goals and interests in view. The use of ancient authoritative texts with respect to mental language is thus shown to be radically transformed from the eleventh to the fourteenth century."

55. ———. 2007. "Ockham and Locke on Mental Language." In *The Medieval Heritage in Early Modern Metaphysics and Modal Theory, 1400-1700*, edited by Friedman, Russell and Nielsen, Lauge, 37-52. Dordrecht: Kluwer.

56. Panaccio, Claude, and Perini-Santos, Ernesto. 2004. "Guillaume D'ockham Et La *Suppositio Materialis*." *Vivarium* no. 42:202-224.

"The paper aims at showing how William of Ockham's theory of material supposition can cope with certain interesting difficulties recently raised about it by various commentators. The theory is first broken down into five main theses. We then explain how the resulting cluster is consistent with Ockham's general approach to signification, how it accounts for the grammaticality of the relevant sentences, and how it determines which spoken or written expressions a given word or phrase stands for when taken in material supposition."

57. Parsons, Terence. 1994. "Anaphoric Pronouns in Very Late Medieval Supposition Theory." *Linguistics and Philosophy* no. 17:429-445.

"This paper arose from an attempt to determine how the very late medieval (1) supposition theorists treated anaphoric pronouns, pronouns whose significance is derivative from their antecedents. Modern researches into pronouns were stimulated in part by the problem of "donkey

sentences" discussed by Geach (1962) in a section explaining what is wrong with medieval supposition theory. So there is some interest in seeing exactly what the medieval account comes to, especially if it turns out, as I suspect, to work as well as contemporary ones. Besides, finding a good analysis of pronouns has proved to be very difficult, and so we might possibly find some insight in a historically different kind of approach.

I discuss a version of supposition theory that aims at producing *analyses* of sentences containing quantified terms, (2)' as articulated around 1400 by Paul of Venice, and as further developed by certain logicians such as de Soto and Celaya in the 1400's and early 1500's, (3) Much of what I will say also applies indirectly to earlier versions of supposition theory (before 1400)."

(1) I say very late medieval' because the period in question (1400-1600) would normally be classified as Renaissance. I am individuating the period by its themes, not solely by its dates.

(2) This was not obviously the intent of the great developers of supposition theory from 1250 to the late 1300's: Peter of Spain, William Sherwood. Roger flacon, William Ockham, Walter Burleigh, John Buridan. For them suppositional "descended forms" follow logically from the sentences under discussion, but they do not *analyze* those sentences because they are not generally equivalent to those sentences. (This is important in Geach's (1962) criticisms of supposition theory.) A burning issue in scholarship on supposition theory is: what was it supposed to be *for*? One popular answer is that it is supposed to yield an analysis of quantification. This answer accords well with later accounts, but poorly with earlier ones, because the earlier "analyses" are often obviously not equivalent in truth value to the sentences being "analyzed." (See e.g. Matthews, 1964.) I assume equivalence in the theories under discussion.

(3) For details of the mature theory see Ashworth (1974).

58. ———. 1997. "Supposition as Quantification *Versus* Supposition as Global Quantificational Effect." *Topoi* no. 16 (1):41-63.

"This paper follows up a suggestion by Paul Vincent Spade that there were two medieval theories of the modes of personal supposition. I suggest that early work by Sherwood and others was a study of quantifiers: their semantics and the effects of context on inferences that can be made from quantified terms. Later, in the hands of Burley and others, it changed into a study of something else, a study of what I call "global quantificational effect."

59. ———. 1997. Missing Modes of Supposition. In *Canadian Journal of Philosophy*
Meaning and reference, edited by Kazmi, Ali: University of Calgary Press.

60. ———. 2006. "The Doctrine of Distribution." *History and Philosophy of Logic* no. 27:59-74.

"Peter Geach describes the 'doctrine of distribution' as the view that a term is distributed if it refers to everything that it denotes, and undistributed if it refers to only some of the things that it denotes.

He argues that the notion, so explained, is incoherent. He claims that the doctrine of distribution originates from a degenerate use of the notion of 'distributive supposition' in medieval supposition theory sometime in the 16th century. This paper proposes instead that the doctrine of distribution occurs at least as early as the 12th century, and that it originates from a study of Aristotle's notion of a term's being 'taken universally', and not from the much later theory of distributive supposition. A detailed version of the doctrine found in the *Port Royal Logic* is articulated, and compared with a slightly different modern version. Finally, Geach's arguments for the incoherence of the doctrine are discussed and rejected."

61. ———. 2008. "The Development of Supposition Theory in the Later 12th through 14th Centuries." In *Mediaeval and*

Renaissance Logic, edited by Gabbay, Dov and Woods, John, 157-280. Amsterdam: Elsevier.

Handbook of the history of logic: Vol. 2.

62. Perini-Santos, Ernesto. 2000. "Linguagem E Interpretação: O Recurso À Linguagem Mental Em Ockham." *Veritas.Revista de Filosofia* no. 45:339-348.
"According to William Ockham's semantics it is crucial to resort to mental language. In this article, having recourse to mental language is examined so as to show one arrives at composed sentences which signify without any commitment to the psychic reality of the attained acts."
63. ———. 2005. "A Composição Real Da Proposição Mental Ockhamiana." *Analytica.Revista de Filosofia* no. 9:67-92.
"Mental language explains the significative character of written and spoken languages; its elements and structures are identified by criteria that belong to a theory serving this purpose. It seems that these criteria allow a certain indeterminacy, if we expect to choose among different possible canonical presentations of mental language. But such a choice is not necessary at all for mental language to serve its theoretical purposes. There is a kind a indeterminacy, concerning tokens of mental propositions, that can really be found in Ockham's texts: a mental proposition can be a simple mental act, and have a compositional semantics. This astonishing thesis reminds us that although semantical analysis that identify structures of mental language describes a psychological reality, the psychological description itself must also take account of other domains of Ockham's philosophy, in particular his theory of mental acts"
64. ———. 2007. "La Structure De L'acte Intellectif Dans Les Théories Ockhamiennes Du Concept." *Vivarium*:93-112.
"William of Ockham held in his career two different theories about the nature of concepts. According to the first theory, concepts are forged by the mind and "terminate" the mental acts which produce them. This so called "fictum"-theory was

abandoned, and Ockham held another theory, according to which concepts are identified with the mental acts themselves. While I think this is a correct description of the evolution of his philosophy, there is one aspect that has gone so far (almost) unnoticed : in his later theory, not only concepts do not terminate mental acts, but nothing seems fit to play this role. Mental acts are no longer "terminated" by anything. Therefore, as the theory of concepts changes, there is also a change in the theory of mental acts. This last change explains the disappearance of the vocabulary associated with the verb "terminare" in the exposition of the mental act theory."

65. Perler, Dominik. 1997. "Crathorn on Mental Language." In *Vestigia, Imagines, Verba. Semiotics and Logic in Medieval Theological Texts (XIth-XIVth Century)*. *Acts of the Xth Symposium on Medieval Logic and Semantics*. San Marino, 24-28 May 1994, edited by Marmo, Costantino, 337-354. Brepols.
66. Perreiah, Alan Richard. 1967. *Is There a Doctrine of Supposition in the Logica Magna?*, Indiana University. UMI Dissertation Express. Order number: 6715146
67. ———. 1971. "Approaches to Supposition Theory." *New Scholasticism* no. 45:381-408.
 "The past 25 years have seen an increasing interest in later medieval logic and in the theory of supposition. A review of literature reveals, however, wide differences of interpretation of supposition-theory. Taking the theory in the widest sense as a contribution to semiotic or the theory of signs, this study shows how supposition has been variously treated as a syntactical, semantical and even pragmatical theory. The main views of P. Boehner, E. Moody, P. Geach, D. P. Henry, W. C. Kneale and L. M. De Rijk are examined, compared and appraised with respect to overall progress in the elucidation of supposition theory."
68. ———. 1986. "Supposition Theory: A New Approach." *New Scholasticism* no. 60:213-231.

69. Piché, David. 2001. "Philosophie Médiévale. Anselme De Cantorbéry, Thomas D'aquin Et Guillaume D'ockham Sur Le Thème Du Discours Intérieur: Quel Est Le Problème?" *Laval Théologique et Philosophique* no. 57:243-249.
"The notion of internal discourse (*locutio mentis*, *verbum mentis* or *oratio mentalis*), as it was worked out in the Latin Middle Ages, fulfilled different theoretical functions and aims, depending on the authors who had recourse to it. The following text asks Claude Panaccio a simple question: what problem(s) exactly do Anselm of Canterbury, Thomas Aquinas and William Ockham attempt respectively to solve by appealing to this notion?"
70. Poveda, E. 1963. "El Tratado "De Suppositionibus Dialecticis" De San Vicente Ferrer Y Su Significación Historica En La Cuestión De Los Universales." *Anales del Seminario de Valencia* no. 3:5-88.
71. Price, Robert. 1970. "William of Ockham and *Suppositio Personalis*." *Franciscan Studies* no. 30:131-140.
72. Priest, Graham, and Read, Stephen. 1977. "The Formalization of Ockham's Theory of Supposition." *Mind* no. 86:109-113.
"The point of the paper is to show that the medieval theory of personal supposition can be formalised using the standard tools of modern logic. A formal account of the modes of supposition is given and it is shown how these can be used to obtain the descensus in standard cases. The formalisation is used to show that Ockham's views on the supposition of the predicate in the "o" form are mistaken, and to refute the following claims: (a) the medievals omitted some modes of supposition; (b) they had too many modes of supposition; and, (c) their theory is incapable of handling multiple quantification."
73. ——. 1980. "Merely Confused Suppposition. A Theoretical Advance or a Mere Confusion?" *Franciscan Studies* no. 40:265-297.

"Our task is an extended defence of the notion of merely confused supposition in medieval semantic theory. For the nominalist it provided a complete apparatus for detailing truth-conditions. A formalisation of the mature theory is given and used to relate the notion to modern philosophy of language. The lack of need for further modes of supposition is detailed both theoretically and historically. The extension of the notion to intensional contexts is discussed briefly."

74. ———. 1981. "Ockham's Rejection of Ampliation." *Mind* no. 90:274-279.

"The standard mediaeval account of the truth-conditions of modal and tensed sentences used a notion of "ampliation", whereby the class of objects for which a term supposits could be extended beyond the class of things of which it could be truly predicated. Ockham did not use the notion in his account. We examine why this was, explain Ockham's account, and argue that it is preferable to the ampliative one. In particular, the authors show the ambiguities found in modal and tensed sentences to be, contrary to popular opinion, different, and support Ockham's contention that the ambiguity in the tensed case is not one of sense (signification) but of reference (supposition)."

75. Prieto del Rey, Maurilio. 1963. "Significación Y Sentido Ultimado. La Noción De "Suppositio" En La Logica De Juan De Santo Tomás (First Part)." *Convivium (Barcelona)* no. 15-16:33-73.

76. ———. 1963. "Significación Y Sentido Ultimado. La Noción De "Suppositio" En La Logica De Juan De Santo Tomás (Second Part)." *Convivium (Barcelona)* no. 19-20:45-72.

77. Read, Stephen. 1991. "Thomas of Cleves and Collective Supposition." *Vivarium* no. 29:50-84.

"In the nominalist theories of language in the first half of the fourteenth century, it was common practice to distinguish three modes of common personal supposition. Considerations of symmetry lead one naturally to consider the possibility of a fourth mode, corresponding to a nominal

conjunction. Investigation of little known writings of the late fourteenth century and later reveal that two schools of thought developed, one originating from a Parisian logician Thomas of Cleves, who supported the addition of a fourth mode, the other vigorously rejecting it."

78. ———. 1999. "How Is Material Supposition Possible?"

Medieval philosophy and theology no. 8:1-20.

"In the early fourteenth century, material supposition was characterized as nonsignificative, when a term supposits for itself or other terms contrary to its normal signification. But this characterization is in tension with the doctrine of signification, which picks out the concept uniting the things for which the term supposits. This tension was appreciated by Thomas Maulfelt and others so that by the end of the century, in John Dorp for example, a further concept was associated with each term, the concept of the term itself and its equiforms. Material supposition can then be subsumed under the theory of signification."

79. Rearden, Myles. 1982. "On Teaching Students Logic."

Philosophy no. 57:130-132.

"Is Peter Geach right to dismiss the medieval theory of distribution? Arguably, the distinction between "suppositio distributiva et confusa" and "suppositio confusa tantum" is more durable than all the rest of supposition theory. There is still valid point about how general terms stand for individuals. "some man runs" and "every man runs" both stand for everyone. The difference is that the former does so disjunctively, the latter, conjunctively. That seems enough to salvage the essence of distribution theory. Geach's rejection of distribution stems from his view that it involves assimilating nouns to proper names as regards their manner of signification. Quite the contrary, medieval distribution theory accepted the difference between a name-like referring and a more general standing-for. Distribution theory continues to make sense, and so consequently does much of the logic of categorical propositions."

80. ———. 1984. "The Distribution of Terms." *Modern Schoolman* no. 61:187-195.
"The traditional doctrine of distribution retains some validity, contrary to the view of Geach in reference and generality. The history of the doctrine is outlined. The medieval distinction between descensus copulativus and descensus disiunctivus is the core of distribution. The class interpretation of categoricals obscures the doctrine. Contemporary quantifier theory reveals it again. Geach's arguments against it are analysed and criticised."
81. Richards, T.J. 1971. "The Two Doctrines of Distribution." *Australasian Journal of Philosophy* no. 49:290-302.
82. Rijk, Lambertus Marie de. 1967. *Logica Modernorum. Vol 1. A Contribution to the History of Early Terminist Logic*. Assen: Van Gorcum.
"This book deals with some doctrines in the work of mediaeval logicians which cannot be traced back to Aristotle. This 'modern logic' deals with the "proprietaes terminorum". De Rijk studies its origination in the period between Abailard and Petrus Hispanus. In this first volume he concentrates upon the theory of fallacy as preserved in Abailard, the School of Parvipontani, commentaries and glosses on "Sophistici Elenchi" and "Perihermeneias" and several anonymous Twelfth Century treatises. A separate chapter is devoted to applications of this doctrine in Twelfth Century theology. In most theories, fallacies enumerated by Aristotle and Boethius are reconciled, original cases are classed under traditional headings or original interpretations are inserted."
83. ———. 1967. *Logica Modernorum. Vol 2. Part One: The Origin and Early Development of the Theory of Supposition*. Assen: Van Gorcum.
84. ———. 1967. *Logica Modernorum. Vol 2. Part Two: The Origin and Early Development of the Theory of Supposition. Texts and Indices*. Assen: Van Gorcum.

"This book deals with some doctrines in the work of mediaeval logicians which cannot be traced back to Aristotle. This 'modern logic' deals with the "proprietas terminorum". De Rijk studies its origination in the period between Abailard and Petrus Hispanus. In this first volume he concentrates upon the theory of fallacy as preserved in Abailard, the School of Parvipontani, commentaries and glosses on "Sophistici Elenchi" and "Perihermeneias" and several anonymous Twelfth Century treatises. A separate chapter is devoted to applications of this doctrine in Twelfth Century theology. In most theories, fallacies enumerated by Aristotle and Boethius are reconciled, original cases are classed under traditional headings or original interpretations are inserted."

85. ———. 1969. "Significatio Y Suppositio En Pedro Hispano." *Pensamiento* no. 25:225-234.
86. ———. 1971. "The Development of *Suppositio Naturalis* in Medieval Logic (First Part)." *Vivarium* no. 9:71-107.
87. ———. 1973. "The Development of *Suppositio Naturalis* in Medieval Logic (Second Part)." *Vivarium* no. 11:43-79.
88. ———. 1982. "The Origins of the Theory of the Properties of Terms." In *The Cambridge History of Later Medieval Philosophy*, edited by Kretzmann, Norman, Kenny, Anthony Patrick and Pinborg, Jan, 161-173. Cambridge: Cambridge University Press.
89. ———. 1985. "La Supposition Naturelle: Une Pierre De Touche Pour Les Points De Vue Philosophiques." In *La Philosophie Au Moyen Âge*, 183-203. Leiden: Brill.
Translated in Italian in: *Logica e linguaggio nel medioevo* - Edited by Fedriga Riccardo and Puggioni Sara
90. Roberts, Louise Nisbet. 1956. "Classification of Suppositions in Medieval Logic." *Tulane Studies in Philosophy* no. 5:79-86.

"Classifications of supposition are a characteristic portion of the terminist logic of the Thirteenth and Fourteenth centuries. The article contains a brief explanation of

classifications to be found in the texts of such logicians as Peter of Spain, Albert of Saxony, and John Buridan."

91. ———. 1960. "Supposition: A Modern Application." *Journal of Philosophy* no. 57:173-182.

"A few Twentieth Century issues found in the analysis of ordinary language are explored in terms of Fourteenth Century logic. The late medieval theory of supposition is applied to problems appearing in the work of such recent thinkers as W. V. O. Quine and P. F. Strawson."

92. Roncaglia, Gino. 2000. "Mesino De Codronchi's Discussion on Syncategoremata and Mental Language in His *Quaestiones on De Interpretatione*." In *Ob Rogatum Meorum Sociorum. Studi in Memoria Di Lorenzo Pozzi*, edited by Caroti, Steano and Pinzani, Roberto. Milano: Franco Angeli.

93. Ross, James, ed. 1971. *Inquiries into Medieval Philosophy. A Collection in Honor of Francis P. Clarke*. Westport: Greenwood.

94. Sagal, Paul Thomas. 1967. *The Concept of Supposition and Its Place in the Development of Medieval Semantology*, Ph. D. University of Pennsylvania.

UMI Dissertaion Express reference number 6809232

95. ———. 1973. "On Refuting and Defending Supposition Theory." *New Scholasticism* no. 47:84-87.

"P. T. Geach's critique of medieval supposition theory has generated much controversy. Supposition theory is neither as guilty as Geach claims, nor as innocent as Scott, one of Geach's critics, claims. Geach takes a medieval account of supposition, the "Ockham-Buridan" account, and attempts to show that it provides us with unacceptable semantic analyses of certain propositions. According to him, supposition theory treats applicatives as associating with common nouns to form referring expressions. However, there is no way to render intelligible the referents of expressions like 'some dancers' and 'all dancers'. Geach sees this semantic foul-up as a consequence of supposition

theory's failure to assign applicational expressions to the proper grammatical category. T. K. Scott counters that the medieval treatment of applicatives parallels modern logic's treatment of quantifiers."

96. Schaeffer, F. 1987. "Syntax and Semantics in Supposition Theory." In *Ockham and Ockhamists.*, edited by Bos, Egbert Peter and Krop, H.A., 63-69. Nijmegen: Ingenium Publishers.

Acts of the Ockham-Symposium at the occasion of the 10th anniversary of the Dutch Society for Medieval Philosophy Medium Aevum (10-12 September 1986)

97. Schoot, Henk J.M. 1993. "Aquinas and Supposition. The Possibilities and Limitations of Logic *in Divinis*." *Vivarium* no. 31 (2):193-225.

"A study of "(modes of) signification" and "supposition", key terms in 13th century semantics, in the work of Thomas Aquinas, with special focus on "suppositio naturalis". It is argued that in Aquinas the distinction between signification (connotation) and supposition (denotation) is maintained, even though the terms "supponere pro" and "suppositio naturalis" are used to indicate sometimes the one and sometimes the other semantical function. This feature is explained from the theological purposes that semantics serves. The study forms part of an investigation of Aquinas' use of semantics in theology, published in "Christ the Name of God. Thomas Aquinas on Naming Christ," Louvain 1993"

98. Scott, Theodore Kermit. 1966. "Geach on Supposition Theory." *Mind* no. 75:586-588.

99. Seung-Chan, Park. 1999. *Die Rezeption Der Mittelalterlichen Sprachphilosophie in Der Theologie Des Thomas Von Aquin. Mit Besonderer Berücksichtigung Der Analogie*. Leiden: Brill.

"One of Thomas Aquinas's central ideas is his attempt to show how it is possible to speak about the incomprehensible God. To reach a better understanding of this project, it is necessary to gain some insight into how he used the theories

he acquired during his time in the faculty of arts in his philosophical-theological works.

Park's book deals with the question which, despite the current flourishing of the studies of the medieval philosophy of language, has not received much attention. The application of the theories of signification and supposition as well as the doctrine of the *modi significandi* is reconstructed systematically. Consequently, the traditional doctrine of analogy appears in a new light.

The interpretations of the texts in question are exemplary for the work of philosophical interpretations. The reader is guided by overviews, schematical drawings and references."

100. Smithka, Paula J. 1991. "Ampliation and Natural Supposition in Albert of Saxony's *Quaestiones Super Logicam*." In *Itinéraires D'albert De Saxe, Paris-Vienne Au Xiv Siècle*, edited by Biard, Joël, 137-148. Paris: Vrin.
101. Spade, Paul Vincent. 1974. "Ockham's Rule of Supposition: Two Conflicts in His Theory." *Vivarium* no. 12:63-67.
Reprinted in *Lies, language and logic in the late Middle Ages* - chapter IX
102. ———. 1974. "Five Logical Tracts by Richard Lavenham." In *Essays in Honour of Anton Charles Pegis*, edited by O'Donnell, Reginald, 70-124. Toronto: Pontifical Institute of Mediaeval Studies.
"This article is an edition of Richard Lavenham's *Suppositiones, Consequentiae, Tractatus exclusivarum, Exceptivae, and Tractatus qui Differt et Aliud Nuncupatur*, based on the British Museum Sloane ms. 3899."
103. ———. 1975. "Some Epistemological Implications of the Burley-Ockham Dispute." *Franciscan Studies* no. 35:212-222.
Reprinted in *Lies, language and logic in the late Middle Ages* - chapter XIII
"The Fourteenth century debate between Walter Burley and William of Ockham is usually viewed as a metaphysical dispute between a realist and a nominalist. But there are

epistemological questions at stake too. I argue that Burley's and Ockham's answers to the question "what kind of supposition is it in which a term supposits for what it signifies" are independent of their metaphysical views, and have epistemological consequences. I explore some of these consequences, and argue that Ockham's position allows us in principle to have knowledge of anything in his ontology, whereas Burley's does not."

104. ———. 1975. "Ockham's Distinctions between Absolute and Connotative Terms." *Vivarium* no. 13:55-76.
Reprinted in Spade *Lies, language and logic* - chapter XI
"A philosophical analysis of the distinction between absolute and connotative terms, drawn mainly from Ockham's "summa logicae". The article explores the implications of this distinction on Ockham's theory of mental language."
105. ———. 1976. "Priority of Analysis and the Predicates of O-Form Sentences." *Franciscan Studies* no. 36:263-270.
Reprinted in *Lies, language and logic in the late Middle Ages* - chapter XII
"Ockham claims that the predicates of particular negative (o-form) sentences have confused and distributive supposition. This view conflicts with the view that the modes of personal supposition are meant to provide analyses. I argue that the same problem emerges whenever a term in merely confused term is put within the scope of a negation, and that a "priority of analysis" rule (Swiniarski) will not avoid this general problem."
106. ———. 1980. "Synonymy and Equivocation in Ockham's Mental Language." *Journal of the History of Philosophy* no. 18:9-22.
Reprinted in *Lies, language and logic in the late Middle Ages* - chapter XIII
"A textual and philosophical study of the claim that according to Ockham there is no synonymy or equivocation in mental language. It is argued that Ockham is committed

to both claims, either explicitly or in virtue of other features of his doctrine. Nevertheless, both claims lead to difficulties for Ockham's theory."

107. ———. 1982. "The Semantic of Terms." In *The Cambridge History of Later Medieval Philosophy*, edited by Kretzmann, Norman, Kenny, Anthony Patrick and Pinborg, Jan, 188-196. Cambridge: Cambridge University Press.
108. ———. 1988. "The Logic of the Categorical: The Medieval Theory of Descent and Ascent." In *Meaning and Inference in Medieval Philosophy*, edited by Kretzmann, Norman, 187-224. Dordrecht: Kluwer.
109. ———. 1990. "Ockham, Adams and Connotation: A Critical Notice of Marilyn Adams *William Ockham*." *Philosophical Review* no. 99:593-612.
110. ———. 1997. "Walter Burley on the Simple Supposition of Singular Terms." *Topoi* no. 16 (1):7-13.
"This paper argues that Burley's theory of simple supposition is not as it has usually been presented. The prevailing view is that Burley and other authors agreed that simple supposition was in every case supposition for a universal, and that the disagreement over simple supposition between, say, Ockham and Burley was merely a disagreement over what a universal was (a piece of the ontology? a concept?), combined with a separate disagreement over what terms signify (the speaker's thoughts? the objects the thoughts are about?). In fact, however, Burley explicitly allows that some instances of simple supposition are for an individual, and that in certain cases personal supposition and simple supposition coincide. The present paper explores Burley's theory on this topic, and proposes a way of thinking about the metaphysics and the semantics that makes sense of what he says."
111. ———. 1997. "Walter Burley, from the Beginning of His *Treatise on the Kinds of Supposition (De Suppositionibus)*." *Topoi* no. 16 (1):95-102.

"An annotated translation from the beginning of the fourteenth century logician Walter Burley's (or Burleigh's) early treatise on supposition or reference (dated 1302). The Translation is from Stephen Brown, ed., "Walter Burleigh's Treatise "De Suppositionibus" and Its Influence on William of Ockham," "Franciscan Studies" 32 (1972), 15-64. The translation is from pp. 31-43 (paragraph 1.1-2.425) of the edition, concerning the supposition of "absolute" terms. The remainder of Burley's treatise concerns the supposition of "respective" or "relative" terms and is not translated here."

112. ———. 1999. "Walter Burley on the Kinds of Simple Supposition." *Vivarium* no. 37 (1):41-59.
113. Sweeney, Eileen C. 1995. "Supposition, Signification, and Universals: Metaphysical and Linguistic Complexity in Aquinas." *Freiburger Zeitschrift für Philosophie und Theologie* no. 42 (3):267-290.

"This essay places Aquinas's use of supposition theory in its metaphysical and linguistic contexts, showing, first, how Aquinas's use of supposition in the problems surrounding terms said of God illustrates Aquinas's theological and metaphysical commitments. Second, I argue that Aquinas's supposition theory organizes but does not dissolve the ambiguities and complexities of language, taking the multiplicity of meanings and references as intrinsic rather than curable aspects of language. These complexities are, for Aquinas, reflections of our imperfect imitation of the immediate and complete understanding of the divine intellect, and the composite and fragmented metaphysics of created being."
114. Swiniarski, John J. 1970. "A New Presentation of Ockham's Theory of Supposition with an Evaluation of Some Contemporary Criticisms." *Franciscan Studies* no. 30:181-217.

"This is a critical evaluation of Ockham's theories of meaning and reference based on extensive primary source materials and especially concerned with Ockham's

procedures for the extensional analysis of general propositions. The Kneales' contention that absurd conclusions follow from the application of Ockham's procedures is shown to be ill-founded. Geach's claim, that Ockham's notion of purely confused supposition is unnecessary, is supported. Some of Moody's views on supposition are upheld."

115. ———. 1971. *Theories of Supposition in Medieval Logic: Their Origin and Their Development from Abelard to Ockham*. Ph. D. Dissertation, State University of New York at Buffalo.
116. Synan, Edward A. 1955. "The Universal and Supposition in a *Logica* Attributed to Richard of Campsall." In *Nine Medieval Thinkers: A Collection of Hitherto Unedited Texts*, edited by O'Donnell, J.R., 183-232. Toronto: Pontifical Institute of Mediaeval Studies.
117. Tabarroni, Andrea. 1989. "Mental Signs and the Theory of Representation in Ockham." In *On the Medieval Theory of Signs*, edited by Eco, Umberto and Marmo, Costantino, 195-224. Amsterdam, Philadelphia: J. Benjamins. English translation of: *Segno mentale e teoria della rappresentazione in Ockham - VS Versus*. Quaderni di Studi Semiotici, 38-39, 1984, pp. 63-90.
118. Tachau, Katherine. 1988. *Vision and Certitude in the Age of Ockham. Optics, Epistemology and the Foundations of Semantics 1250-1345*. Leiden, New York: E. J. Brill.
119. Theron, Stephen. 1999. "The Supposition of the Predicate." *Modern Schoolman* no. 77:73-78. "Supposition theory (chiefly that of Aquinas) is contrasted with theories of reference. It is argued that the predicate "stands for" (supponit pro) what the subject stands for. It has the same supposition, that is, but according to its predicative mode. Supposition can be varied "ad placitum." The role of the copula is crucial, as is the principle that "only wholes can be predicated of wholes" (Aquinas: De ente et essentia). The context is a discussion of writings by Peter Geach."

120. Thomas, Ivo. 1952. "St. Vincent Ferrer's *De Suppositionibus*." *Dominican Studies* no. 5:88-102.
121. Trentman, John Allen. 1964. *Simple Supposition and Ontology: A Study in Fourteenth-Century Logical Theory*, Ph. D. Dissertation. University of Minnesota.
UMI Dissertation Express reference number: 6500162
122. ———. 1970. "Ockham on Mental." *Mind* no. 79:586-590.
"Mental language, according to Ockham, consists of mental acts or capacities for performing mental acts. Its structure is analogous to that of spoken or written language and is the structure of a logically ideal language. Hence its study is useful for philosophy. Ockham's concern about the apparent closeness of the analogy is also considered with reference to his discussion of the possibility of angelic (and hence nonphysical) language."
123. ———. 1986. "Mental Language and Lying." In *L'homme Et Son Univers Au Moyen Age. Actes Du Septième Congrès International De Philosophie Médiévale (30 Aout - 4 Septembre 1982 (Volume Ii))*, edited by Wenin, Christian, 544-553. Louvain-la-Neuve: Editions de l'Institut Supérieur de Philosophie.
124. Valdivia, Benjamin. 1987. "La Suposición Semántica En Vicente Ferrer." *Analogia* no. 1 (2):85-91.
125. ———. 1993. "Ockham: Suposición Y Ontología." *Analogía Filosófica. Revista de Filosofía*:141-151.
"Based on Ockham's "Summa Logicae", this article is intended to present the terms classification related to individual entities and inserted in propositions. Essence of signs is discussed, the same as reference to the world. Ockham states that sign is that which supposes a thing making it comprehensible. Supposition is made clear only in a sentence as a whole, for it is the smallest signification unit (and not the separated terms). It presents, too, conceptions of significativity and truth as qualities of sentences, composed by terms which suppose for an individualized reality."

126. Vera Cruz, Alonso de la. 1982. "Sobre La Suposición." *Revista de Filosofia (Mexico)* no. 15:349-393.
127. Versace, Giovanni. 1974. "La Teoria Della *Suppositio Simplex* in Ockham E in Burley." In *Atti Del Convegno Di Storia Della Logica (Parma 8-10 Ottobre 1972)*, 195-202. Padova: Liviana Editrice.
128. Wagner, Michael F. 1981. "Supposition Theory and the Problem of Universals." *Franciscan Studies* no. 41:385-414. "I examine Burleigh's and Ockham's positions on universals through explaining their theories of signification and supposition. I argue for a representational analysis of these theories, which i distinguish from prevailing interpretations of these theories; and i argue, in particular, that when Burleigh's theory of the signification and supposition of general terms is properly understood, he is not an extreme realist (at least as this view is normally understood) and his disagreement with Ockham over universals is much more subtle than it is normally conceived by historians of philosophy."
129. Weidemann, Hermann. 1979. "Wilhelm Von Ockhams Suppositionstheorie Und Die Moderne Quantorenlogik." *Vivarium* no. 117:43-60. "This article is the enlarged German version of William of Ockham on particular negative propositions, published in "Mind", volume 88, April, 1979, pages 270-275. The views of the following authors are discussed: P. T. Geach, G. B. Matthews, A. R. Perreiah, R. Price, G. Priest, S. Read, N. Rescher, J. Swiniarski, R. G. Turnbull."
130. ———. 1991. "*Scholasticorum Taediosa Circa Suppositiones Praecepta*: Leibniz Und Die Problematik Der Suppositionstheorie." *Archiv fur Geschichte der Philosophie* no. 73 (3):243-260.
131. Yrjönsuuri, Mikko. 1997. "Supposition and Truth in Ockham's Mental Language." *Topoi* no. 16 (1):15-25. "In this paper, Ockham's theory of an ideal language of thought is used to illuminate problems of interpretation of

his theory of truth. The twentieth century idea of logical form is used for finding out what kinds of atomic sentences there are in Ockham's mental language. It turns out that not only the theory of modes of supposition, but also the theory of supposition in general is insufficient as a full theory of truth. Rather, the theory of supposition is a theory of reference, which can help in the determination of truth values within the scope of simple predications. Outside this area, there are interesting types of sentences, whose truth does not depend on whether the terms supposit for the same things or not for the same things."

132. Zarka, Yves Charles. 1988. "Signe, Supposition Et Dénomination. Figure Du Nominalisme Au Xvii Siècle." *Revue des Sciences Philosophiques et Théologiques* no. 72 (2):263-272.
133. Zheng, Yiwei. 1998. "Metaphysical Simplicity and Semantical Complexity of Connotative Terms in Ockham's Mental Language." *Modern Schoolman* no. 75:253-264. "In this paper I offer a formal presentation of Ockham's connotation theory, based upon a distinction between metaphysical simplicity and semantical complexity of connotative terms, that I argue render consistent Paul Spade's claim (1975) that Ockham needs and adopted a recursive semantics for his ontological elimination and Claude Panaccio's observation (1990) that there is no simple connotative term in Ockham's mental language."

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Logic, Semantics and Ontology in the Philosophical Works of Abelard

INTRODUCTION

"Abelard composed four works on logic:

- 1) *Introductiones Parvulorum*, which consists of short glosses on Porphyry *Eisagoge* and Aristotle *Categories* and *De Interpretatione*;
- 2) *Logica Ingredientibus* (so called because *ingredientibus* is the first word of its text), which consists of longer glosses on the texts covered by the previous work together with Boethius' *De Differentiis Topicis* and was probably written while Abelard was teaching in Paris before 1120;
- 3) *Logica Nostrorum Petitioni* (so called because *nostrorum petitioni* are the first words of its text), which consists of longer glosses on the *Eisagoge* and may date from the time of his teaching at the hermitage of the Paraclete;
- 4) *Dialectica*, which has the form of an independent work about the subjects covered by Boethius' logical writings and Victorinus' treatise *De Definitionibus* and seems to contain materials from different periods of Abelard's life but probably did not reach its final form until a late date, perhaps the time of his stay at Cluny shortly before his death. Of these the second and the fourth are the most valuable.

The *Dialectica* indeed, though based, like that of Garland, chiefly on the works of Boethius and written with the prolixity which was all too common among medieval authors, is an original composition of great importance for the development of logic. Abelard's mind was the keenest (though not in all respects the most admirable) that had been devoted to the subject for more than a thousand years, and he approached his task with the belief that it was still possible to make discoveries: '*Non enim tanta fuit antiquorum scriptorum perfectio ut non et nostro doctrina indigeat studio, nec tantum in nobis mortalibus scientia potest crescere ut non ultra possit augmentum recipere.*' (1) The *Dialectica* survives in a single manuscript which lacks the opening sections. Excerpts from it were published by Victor Cousin in 1836 in his *Ouvrages inédits d'Abelard*. But unfortunately the text was not printed in full until 1956, and before that date it was therefore not possible to appreciate the magnitude of Abelard's contribution to the doctrines we regard as characteristically medieval. (...).

The text is divided into five *tractatus* which correspond to groups of Boethius' writings and are called respectively: I *Liber Partium*, II *De Categoricalis*, III *Topica*, IV *De Hypotheticis*, and V *De Divisionibus et Definitionibus*. Of these the first is subdivided into three *volumina* dealing with the *antepredicamenta* (or *quinque voces* of Porphyry), the *predicamenta* (or categories of Aristotle), and the *postpredicamenta* (or questions about meaning raised in the *De Interpretatione*). (2) But our sole surviving manuscript lacks the whole of the first volume and the opening of the second. This is unfortunate, since the missing part probably contained Abelard's last thoughts about universals. We can be reasonably sure also that it contained an account of the distinction between words of first and words of second imposition, since this was mentioned by Boethius in his commentary on the *Categories* and is taken for granted later by Abelard." (pp. 203-204, some notes omitted)

Notes

(1) *Dialectica* p. 535.

(2) In later times the name *antepredicamenta* was used (more naturally) for the subjects treated by Aristotle in his *Categories*, 1-3 (i.e. equivocal and univocal naming, simple and complex expressions, etc.), and the name *postpredicamenta* for the subjects treated by Aristotle in his *Categories*, 10-15 i.e. kinds of opposites, kinds of priority, etc.).

(3) *Dialectica* p. 122.

From: William & Marta Kneale, *The Development of Logic*, Oxford: Clarendon Press 1962.

THE MODERN REDISCOVERY OF ABELARDIAN LOGIC

See the page [Editions and Translations of the Logical Works](#) for the bibliographical details.

"Geyer's editions [...] gave the first decisive stimulus to the study of the Palatine Master's philosophical writings.

Up to 1919 (the year of Geyer's first edition) the known Abelardian writings were limited to those edited by Cousin (7): this French scholar attached the most importance to the comments on Porphyrius, the *Categorie* and the *Topici* of Boetius and the passages of the *Dialectica*. On the whole the material was fragmentary, uncritically sifted and confused with fragments of non-Abelardian comments, which Cousin nonetheless considered were his. De Rémusat's incomplete paraphrase in French of a comment on the *Isagoge* was then added to these texts.

In 1919 Geyer began publishing *Ingredientibus* (8): under this name he has edited a comment on the *Isagoge*, a second on the *Categorie*, and a third on *De Interpretatione*. A prologue (from the beginning of which Geyer took the name *Ingredientibus*)

presents these comments as a unit which has a certain compactness; this is confirmed by other observations which are intrinsic to the work, such as the internal cross-references from comment to comment, the persistence of a similar attitude and of an identical -- terminologically as well -- solution when confronted by the problem of universals in all the comments (9), the 'dictum' theory present in the three comments. (10) From internal cross-references that Abelard makes to an essay *De Hypotheticis* (11), Geyer concludes that the work must have included other comments as well as these. From hints dropped by Abelard in *De Interpretatione*, it seems highly likely to me that a comment on *De Categoricalis* also belonged to *Ingredientibus*. (12) Dal Pra has shown that the comment on *De differentiis topicis*, edited by him, is clearly distinct from the literal comments, and concluded that this is a comment that comes within the framework of *Ingredientibus*. (13) We thus have four of the seven comments on the usual 'septem codices' (14) that Abelard considered fundamental.

Also part of the *Philosophische Schriften* edited by Geyer is a comment on the *Isagoge* of which Rémusat had edited an incomplete paraphrase in French. In the prologue Geyer singled it out as part of an organic work, called *Nostrorum* (15) by him from the words at the beginning: here too Abelard proposed an entire treatment of the logical corpus usually used by him. Today we still have only the comment on the Porphyrian *quinque voces*. In 1954 Geyer's edition was joined by the edition of the literal comments edited by M. Dal Pra. In this edition the comments are arranged in the order which Abelard himself indicates at the end of the logical treatise and to which he also holds in *Dialectica*. The comments on the *Categorie* and on *De Interpretatione* thus come after the comment on the *Isagoge*. The presence of a comment on the Boetian *De Divisionibus* indicates that Abelard used the 'seven codes' from the outset and leads one reasonably to suppose that he had worked on other comments of the same type as *De Syllogismis categoricalis*, *De Syllogismis Hypotheticis*, and *De Differentiis topicis* which we do not have now. This seems to

me to be confirmed by certain references of *Dialectica*, which are remade in the comments on *De Differentiis topicis* and *De hypotheticis* in the *Introductiones parvulorum* (16), identified by Geyer with the literal notes. We have already seen how the comment on *De Differentiis topicis* edited by Dal Pra in the *Scritti Filosofici* must be assimilated, on the contrary, to the corpus of notes in *Ingredientibus*.

In 1956 De Rijk published an edition of *Dialectica* which enhances the picture of the Palatine Master's logical work. *Dialectica* is not a comment but an organic treatise based nonetheless on the 'septem codices'. The most serious gap, by extension and importance, is that which deprives us of the treatise on the Porphyrian *quinque voces* which was certainly included in the work, because Abelard hints at it. Two passages in this work show us Abelard's concept of it (17): the Palatine Master here presented himself as an auctor in line with Aristotle, Porphyrius and Boetius, whose works he would perfect, as he proudly declares.

In *Abaelardiana inedita* edited by Minio Paluella (18), two texts are edited, the first contained in a manuscript now in Berlin, and the second belonging to a manuscript in the monastery of Fleury, both from the 12th century. The existence of these two manuscripts was not unknown to us. (19) The text of the Berlin manuscript, a commentary on *De Interpretatione*, is three-quarters identical to the Ambrosian manuscript edited by Geyer as a section of *Ingredientibus* and the part that differs is without any doubt more coherent with the preceding part than the Ambrosian manuscript which contained a noteworthy break. The contribution of this new edition consists in a rigour and a greater accuracy in the reading of the Abelardian text: it does not, however, appear that in this last part of the commentary there are motives that complete or at least modify the weight and the general meaning of the commentary itself.

The text of the Fleury manuscript is more interesting, even if, with regard to the attribution, it is more uncertain. This concerns the analysis of a paralogism and of five sophisms that emerge

from a nominalistic interpretation of the concept of *totum*." (pp. 2-4)

Notes

(7) Cousin, op. cit., and *Petri Abaelardi opera hactenus seorsim edita* ..., Paris 1859.

(8) *Philosophische Schriften*, Münster 1919, 1921, 1927.

Abbreviated to G.G.

(9) See G.G., pp. 16, 127, 403, and G.L., p. 235; G.G., pp. 38, 246, 334-5, and [*Scritti filosofici*, Milan 1954, abbreviated] G.L., p. 221.

(10) See p. 79, note 39.

(11) G.G., pp. 291 (25) and 389 (7).

(12) G.G., p. 394 (10-26).

(12) Dal Pra, 'Introduzione', in G.L., pp. XXIX-XXXII.

(14) *Dialectica*, p. 146 (10-7).

(15) G.G., p. 505 (3-5).

(16) *Dialectica*, pp. 269 (1-3), 329 (4), 482 (4-6).

(17) *Dialectica*, pp. 146 (10-20), 496 (18-26).

(18) *Abaelardiana inedita*, Rome 1958.

(19) *Id.*, pp. XIIff., XLI.

From: Maria Teresa Beonio-Brocchieri Fumagalli, *The Logic of Abelard*, Dordrecht: Reidel 1970.

THE ANCIENT LOGICAL WORKS KNOWN AT THE TIME OF ABELARD

"...of whose seven books everyone in this art with an education in Latin should be armed. Only two of Aristotle's books are still known to the use of the Latins, namely the *Categories* and the *De Interpretatione*. One book is Porphyry's: that is the one written about the five 'predicables' (genus, species, difference, property

and accident) [the *Isagoge*]; this is an introduction preparatory to the *Categories*. We usually treat Boethius as four books: that is the *De Divisione*, the *De Topicis*, the *De Syllogismo Categorico* and the *De Syllogismo Hypothesico*. The text of my *Dialectica* will include a very full summary of all of these, and it will see the light -- so that readers can use it -- provided the Creator of our life grants us a little time and Envy relaxes her grip on our works."

From: Petrus Abaelardus, *Dialectica*. *First complete edition of the Parisian manuscript with an introduction by L.M. de Rijk*, Assen: Van Gorcum, 1970 (second edition), p. 146, lines 10-20 (cited from M. T. Clanchy, *Abelard. A Medieval Life*, Malden: Blackwell, 1997, p. 98).

"*The Aristotelian texts available to Abaelard.*

The *Introductiones parvulorum* contain short glosses on Porphyry's *Isagoge*; Aristotle's *Categories* and the *Peri Hermeneias*; and Boethius' *De topicis differentiis* and the *De divisionibus et definitionibus*. The *Ingredientibus* contains longer glosses on the texts of Porphyry and Aristotle. The *Nostrorum petitione sociorum* elaborates on Porphyry alone. Additional texts available to Abaelard were Boethius's *Introductio ad categoricos syllogismos*, the *De syllogismis categoricis*, the *De syllogismis hypotheticis* and Cicero's *Topics*. Abelard was surely using the extended, newer Boethian translation of the *Isagoge* (secunda editio) rather than the older translation based on Marius Victorinus. The glosses of the *Categories* relied on a copy of the *editio composita* of Minio-Palüello (Aristoteles Latinus I) — probably the close redaction, Ms. Chartres 497. Both Minio-Paluello and de Rijk find similarities between Abaelard's and Thierry of Chartres' use of Ms. Chartres 297, in part, a Boethian translation of the *Peri Hermeneias*.⁽¹⁾ With respect to the *nova*-texts available to Abaelard, it is certain that he had some acquaintance with both the *Prior Analytics*, cited in the

Dialectica, and the *De sophistici elenchi*, cited in the *Ingredientibus*. As his acquaintance with the *Prior Analytics* is certainly not from indirect sources, he most likely used the *recensio Carnutensis* Boethian translation found in Ms. Chartres 497 which also contained the *Categories*. A translation of Aristotle's *Topics* is also found in the same codex. While the text is not quoted in any of Abelard's extant writings, it seems probable that he reviewed the text. The *De sophistici elenchi* is found in Ms. Chartres 498. While Abaelard states that he did not always have access to the work (*Incred.* 400,33-4), it is evident that he knew the text-- probably from this manuscript. While there was an anonymous translation of the *Posterior Analytics* circulating in Abaelard's day, it is highly unlikely that he had ever seen the work. It is not quoted in any of the extant writings. He was certainly unacquainted with the *nova* translations of James of Venice which started to circulate sometime after 1130. Unfortunately, James' translations of the *De anima* and the *Metaphysics* first appeared a few years after Abaelard's death (and, in fact, they had few readers at the time). Aristotle's *Ethics* was not translated until early in the thirteenth century.

From: Daniel F. Blackwell, *Non-Ontological Constructs* Bern: Peter Lang, 1988, pp. 309-310.

DIALECTICS AT THE TIME OF ABELARD

"When the medievals dealt with dialectics, they meant logic as such, and dialectic in the historic Greek sense of the term that was at issue from the Sophists through Aristotle largely fell by the wayside. For the medievals, then, dialectics was logic at large, the science of demonstration through which rational inquiry sought *veritatis seu falsitatis discretio*.(16) And as such dialectic constituted a key part of the institutional *trivium* of grammar,

rhetoric and dialectic (i.e., logic). Thus while the medieval treatment of "dialectic" forms an important chapter in the history of logic, it can be left aside in the context of the history of dialectic as traditionally understood in its relation to philosophical methodology.(17) However, insofar as dialectic is a feature of the actual practice of academic disputation, it continued to play an important role in higher education throughout the middle ages. (18)" (p. 137)

Notes

(16) Abelard, *Dialectica*, p. 435. For an English translation of a typical medieval treatise on dialectic see John Buridan, *Summulae de dialectica* tr. by Gyula Klima (New Haven, Conn: Yale University Press, 2001). A look at the elaborate table of its Contents shows that with regard to topics that the treatise remains well within the boundaries of Aristotle's logical organon. Not until the Renaissance did Petrus Remus reconstitute the idea of dialectic as the art of disputation (*doctrina disputandi*. See his *Dialecticae Constitutiones* (1543).

(17) Over and above the standard histories of logic, the following treatments of medieval dialectic are highly instructive: T. J. Holopainen, *Dialectic and Theology in the Eleventh Century* (London: Brill, 1996); J. A. Endres, "Die Dialektik und ihre Gegner im 11. Jahrhundert," *Philosophisches Jahrbuch*, vol. 19 (1906), pp. 20-33; N. J. Green-Pedersen, *The Tradition of the Topics in the Middle Ages* (Munich, Philosophia Verlag, 1984); and above all, Eleanore Stump, *Dialectic and its Place in the Development of Medieval Logic* (Ithaca, NY: Cornell University Press, 1989).

(18) On medieval academic disputation see A. G. Little and F. Pelster, *Word Theology and Theologians* (Oxford: Clarendon Press, 1934), pp. 29-56. A vivid account of scholastic disputation is given in Thomas Gilby, O. P., *Barbara, Celarent. A Description of Scholastic Dialectics* (London, New York: Longmans, Green, 1949), see especially Chapter XXXII on "Found Dialectic," pp.

282-93; and see also Bromley Smith, "Extracurricular Disputation: 1400-1650," *Quarterly Journal of Speech*, vol. 34 (1948), pp. 473-96. On medieval and renaissance discussions of Platonic dialectic see Raymond Klibansky, "Plato's Parmenides in the Middle Ages and the Renaissance" in *Medieval and Renaissance Studies*, vol. I (1941/43), pp. 288ff.

From: Nicholas Rescher, *Studies in Idealism (Collected Papers, volume III)*, Frankfurt: Ontos Verlag, 2005.

THE SEMIOTICS OF ABELARD

"3. The linguistic theory of Abelard is centred around the correlation or correspondence between the "word" and the "thing" or the *signifiant* and the *signifié* as we would have them today. According to Abelard, if a word or a sound signifies, it is because something is added to its physical being, *essentia*; this something is the significative function, *officium significandi*. The sound, just like the thing that it represents in a given language, remains the same from one community of speakers to another, it belongs to the sphere of things, which is natural; the significance, on the other hand, changes due to the diversity of languages, it depends upon institution, upon a human convention, *positio hominum, voluntas hominum*.⁽¹⁾ We have already the distinction between the sphere of significance and the sphere of things. The sound or the physically pronounced utterance is of the order of nature while significance is created when "something" is added to its being, and, this "something" is due to human intervention in a human, social institution. For Abelard, words give birth to or "generate" intellection which then correspond to things. Thus, argues Abelard, there is a double series of correspondence between words and intellections, and between intellections and

things, and consequently, between words and things. These are three distinct but related spheres.(2)

In *Peri Hermeneias*, Abelard insists that first of all the words signify "intellections" and only by implication and consequently, the things, otherwise there would be no logic. At the level of utterance, we deal with ideas which are "abstracted" from things but which are not found in any one thing. The reference to things is always indirect, intellective.(3)

Words are imposed upon things by human convention and they do not carry the same significance from one language to another, hence they are "arbitrary", but as they signify "intellection" of a given thing, they operate within the sphere of logic. Words constitute intellections, or what are called "analyses" in the eighteenth century by Condillac and his followers, they represent logical propositions on the object under study. They do not correspond to the physical, empirical reality of the thing (object) but to its intellective reality. Hence, the move from one word (utterance) to another is in fact a move from one intellection to another. This is why, for Abelard, to say that a word signifies is to say that it manifests an intellection of the one who pronounces it, and that it generates a similar intellection for the one who hears it. To signify is to constitute intellection but the act of communication requires a speaker and a hearer where there must be a similarity of intellection.(4) Abelard continues the argument in *Super Peri [Hermeneias]* and explains that linguistic communication is an affair between two thinking beings. (5)

Language thus is not only a matter of forming logical propositions on the perceived reality of things, it is an institution where two thinking beings, beings who reflect upon the nature of things, exchange their intellections or analyses. But the so-called perfect exchange can take place if the same intellection is generated between two persons.

There are three degrees of knowledge, argues Abelard in *Peri Hermeneias*: sensation, *sensus*, imagination, *imaginatio*, intellection, *intellectus*. One can feel without imagination,

imagine without thinking but imagination presupposes sensation and, there can be no intellection without image.

Our words turn our attention towards the resemblance of a thing so that it may be applied, not to this resemblance, but to the thing that it represents. This is the role of the image. One may compare it with a statue of Socrates. We apprehend it not as a thing but as a resemblance. Our intellection is not concerned with it, it only represents Socrates. When our sensation perceives it, it orients it towards the real Socrates. Image is thus situated within the mental operation which leads to knowledge. It serves as a substitute for the thing that is absent. An image alone can also be the object of thought, but in that case, it is not really an image, it has to be considered as an object in itself without another image serving as an intermediate. In any case, we see that feeling or sensation, in itself or across an image, serves as the basis of our intellection. But neither sensation nor image is sufficient for our knowledge; in the first case, we remain at the surface, manifest level, in the second, there is confusion. It is through the application of our esprit that we pass on to intellection. It leads us to the knowledge of the nature and the properties of things which are imperceptible to senses or to imagination.

Our reason leads our esprit to intellection, without it we remain in the domain of confusion which is the characteristic of imagination.

To think is not to subject a given thing (object) to our intellection, but a nature or a property of that thing.

In its simplest form, an image presents only a resemblance of a thing perceived, it is confused, and like sensation, it does not allow us to distinguish the various properties of the thing. It is only a material to work on, to apply our intellection. Moreover, the validity or invalidity of an intellection has nothing to do with the specific characteristics of an image. These images serve only as signs. Two persons may think of a non-sensible object, like rationality, across two different images, and both of them may formulate valid propositions. What matters is what is aimed at across these images, *attentio rerum per imagines*, and not the

arrangement or the aspects of these images, *dispositio imaginum vel forma*.

Intellections may be simple or complex. A simple intellection corresponds to a noun (name), its object is composed of matter and form but it is apprehended in one unique perception, it is thus without any parts. A complex intellection corresponds to *oratio* as animal, rational, mortal; it groups several intellectual acts. The second division refers to an intellection of related or divided things, *intellectio conjunctorum vel divisorum*, on the one hand, and on the other, the intellection that relates or divides, *intellectus conjungens vel dividens*. The former refers to a reunion or a separation already made within the language. It is thus a simple idea, it corresponds to a definite or an indefinite noun as the things are related or divided. The intellection that relates or divides is, on the other hand, a composed or complex intellection; to a term already thought (analysed), it relates another. Such an intellection corresponds to animal + rational + mortal. Furthermore, there is the intellection that divides and the other that abstracts. The former separates one characteristics from the other but considers both in conjunction or disjunction. The latter considers only one term at a time, neglecting the other. As the primary interest of Abelard is the interpretation of old sacred texts, he argues that as the ancient texts represent specific intellections of the authors, their true understanding would lead us to the understanding of the texts or the intellections, which are different from those of ours, but they would not shed light on the real nature of things, of the objects they refer to, of the mysteries of the Church. Before Abelard, Isidore had taught in the seventh century that once you know the etymology of a word, you know the "reality" of the thing. For Abelard, etymology informs us only of the intellection of the previous author. That intellection is no more related to the reality of the thing than our intellections are today. The etymological analysis gives only a "partial" view of what is really the thing. The etymology, says Abelard, sheds light more on the composition of the word than on the substance of the thing.(6) No wonder, he was excommunicated. For the logician

Abelard, there is absolutely no confusion. For him, the science of logic is concerned only with the enunciative propositions and hence finds its precise object at the level of language, and not, at the level of the impression of things. The sphere of ideas is clearly distinct from the sphere of things.(7) It is interesting to note that following this reasoning, Abelard comments upon the ten categories of Aristotle and states that they are due to "human initiative", and hence due to the nature of language, otherwise such a homogeneity between the categories of language and that of the things of the world could not be envisaged.(8) Eight hundred years later, in a now celebrated article, Emile Benveniste makes the same point with the help of the modern Saussurian linguistics.(9) Abelard insists that the formation of words must be understood as a resultant of a certain mental activity and not as a perfectly adequate translation of the nature of things.(10) Furthermore, as the logical proposition is not a transposition of the natural rapports between things, we cannot talk simply of the differentiation between language and logic. Language regulated by simple grammar at the complex but spontaneous level of the construction of words does neither correspond to the logical structures, nor to the nature of things.(11) This three-way interrelation becomes even more complex when we realise that at times, the reference to a thing may be composed of several intellections and as such the utterance that describes this grouping may have a multiple signification. This multiplicity of reference is the crux of the problem of signification, not sufficiently emphasized in modern semiotics.

A proposition is both simple and multiple. It should therefore lead us, across several terms, to something that is unique, that is numerically one. It expresses something with the help of several words, but this something is not a thing. A proposition is materially composed of a noun and a verb; similarly, the corresponding intellection is constituted with the relations of the intellections of its parts. But what corresponds, in reality, with a proposition, not having any thing as its basis, is not composed of what corresponds, in reality, with the words, *res autem*

propositionis, cum nullam habeat rem subjectam, ex rebus vocabulorum non constat. (12) In the sphere of intellection (analysis) of a thing, Abelard insists that it is "nothing", *nil omnino*, "absolutely nothing", *nullam omnino rem*, it is not an existing thing.(13) But what does not exist intellectually is the corporality of the thing. Intellection deals with what is called, the state of things, something like the *sachverhalt* [state of affairs] of phenomenology which corresponds well with the proposition of Abelard: *quidam rerum modus habendi se.*(16)

All experimentation in modern art in the sphere of the correspondence, between form and content point to what Abelard emphasized that there is no such thing as absolute reality, every thing, every object, is under some impact, physical or psychological, whether it is the impact of light for the impressionists or the impact of psychic turbulations for the cubists or surrealists, or economic or social impact for the Marxists. Abelard had realised in the early years of the twelfth century that the object of study is not already given, it has to be defined, it has to be constituted within a specific universe of discourse, and, all intellection and comprehension of this object has to be in the sphere of ideas, in the sphere of the logical propositions of reality. This is what he tried to do with Holy Trinity and he got into trouble with the Church. For Abelard, at the level of things, Father, Son and the Holy Spirit are three different things because there is no such thing as a universal thing. It is only at the level of intellection, at the abstractive level where a certain unity is envisaged in terms of certain definitions of a perceived characteristics that the Trinity becomes *metaphorically* one. It is only in the *enunciative* field of the Christian discourse that the metonymic sequence of Father and Son is obliterated. The move from individuality to universality is a move in the realm of intellection and not in the realm of empirical realism which the Church wanted to impose purely on the basis of Faith. For Abelard it is a problem of language, which is a problem of intellection par excellence. In fact, it is only in the realm of semiotics that the Unity of the Holy Trinity could be

established as indeed did Abelard, but unfortunately he was too advanced for his times.

4. In his *Logica*, Abelard discusses the intellection of the universals and individuals.⁽¹⁵⁾ When intellection acquires a universal term, argues Abelard, we have a common and confused image formed from several realities. On the other hand, when there is an individual term, we have before us a form of one and unique being, a form that has a rapport with only one individual; when we hear the word, man, a certain representation emerges whose rapport with each of the men is such that it is common to all but specific to none. When we hear the word, Socrates, a certain form emerges which expresses a similitude with a given being. This vocable, Socrates, gives birth to a form of a being who is unique, it is a real thing which is certified and determined. For the vocable, man, on the contrary, the implied community leads us to confusion and we do not know which man is in question. In fact, the word, man, signifies neither Socrates nor any other man, it does not refer to any man even though it denominates all.

A real thing abstracted by intellection may signify either a veritable substance of a thing, when for example intellection is based on a sensible perception, or a mental conception of form corresponding a given thing, which, in the absence of such a thing, may correspond to a common or a specific form. By common form is meant a form which has the common similitude of a multiplicity of beings, but which, in itself, is considered as a unique thing.

As for the mental or conceptual forms, Abelard makes a distinction between the divine forms and human forms. He compares God with artisan who conceive mentally the form of the work that they are going to realise later in a specific body. But there is a difference, says Abelard, it is God who creates man, soul or stone, while man creates a house, a statue or a sword. Neither statue nor sword are natural works, the names which designate them are not based on substance but on accidents, they do not correspond to genres or species. Thus one can say that the Divine thought conceives by abstraction, the natural realities of universal

character, while men know things only through senses. Abelard thus rules out the innate faculty of man in the realm of conceptualisation as proposed later by Descartes and further developed in the Port Royal School.(16) In this respect he is the precursor of the empirical school of Condillac in the eighteenth century(17), and consequently, of the basic hypothesis of modern social sciences where all creation is due to bricolage or due to establishing new relationships within the material culture which is already present. Apart from the works of Claude Levi-Strauss, we see this most clearly in the writings of A.G. Haudricourt where he demonstrates a relationship between the methods of plantation and cosmological conceptualisation in New Caledonia. (18)

Our intellection is based on two distinct operations: attraction and synthesis. Form and matter, argues Abelard, do not exist in isolation from each other but our "esprit" has the faculty to consider one or the other at a time or even together in a certain relationship. We abstract a certain element of a synthesis and examine it in its proper nature. When we re-establish a certain specific relation, we operate a synthesis. For example, we may consider the substance of a man, it may be body, animal, man, rationality etc. When we pay attention to any one of these in its material essence excluding all other forms, this operation is abstractive. Inversely, if we pay attention to only the corporality which we relate with the substance, the operation is synthetic. These abstractive operations could be considered false, for here we perceive things not as they exist in reality; no abstracted element can exist in isolation. However, it is not so, for it is a question of intellection, of paying attention at a time to a specific element. The isolation of an element, substance or form is only intellectual and not in its subsistence. It is a matter of considering a certain quality or characteristics separately and not as separated. For example, if we have a statue made of half gold and half silver, we can consider separately either gold or silver even though within this statue they do not have separate existence. The same is true of all complex realities whose comprehension is

possible only if at times, we consider their constituents in their abstracted forms, and at others, by operating certain specific syntheses.

The same principle operates in the prevision of the artisan who conceives forms in advance of their realisation. This prevision is of the order of senses as it is based on establishing intellectual relationships within the elements of things already present. These so-called pre-conceived forms of the artist are thus not based on nothing. It is simply an affair of the mental application of the operations of abstraction and synthesis. The creative process or the prevision of the artist involves the establishment of metaphoric relations, the relations which bypass the sequential relations of time and space in a metonymic, sequential or syntactic realisation within a given enunciative field." (pp. 4-12)

Notes

This study in Abelardian Semiotics was conducted during my stay at the Maison des Sciences de l'Homme, Paris as a Visiting Professor of Semiotics in 1987.

(1) *Glossae super Peri Hermeneias*, 320, 12,27, ed. B. Geyer, Munster i.w. 1919-23.

(2) *Glossae super Prophyrium* III, 524, 3-10, ed. B. Geyer, Munster, i.w. 1919-23.

(3) *Peri Hermeneias*, 309, 1-13, V. Cousin, *Ouvrages inédits d'Abélard*, Paris, 1836.

(4) *Glossae super Peri Hermeneias*, 307, 31 ed. B. Geyer, Munster, i.w. 1923.

(5) *ibid*; 374, 21.

(6) *Dialectica*, 128, 29-32, ed. L.M. De Rijk, Assen, 1956.

(7) *Sup. Per.* 3674, 21.

(8) *Sup. Porph.* 11, 24.

(9) E. Benveniste: *Problèmes de linguistique générale* I, Gallimard, Paris, 1966, pp. 63-74. [the essay is: "Catégories de pensée et catégories de langue", first published in *Les Etudes Philosophiques*, 13: 1958 pp. 419-429 and translated in: E.

Benveniste, *Problems in General Linguistics*, Coral Gables: University of Miami Press, 1971]

(10) *Sup. Per.*, 72-74.

(11) *Sup. Porph.* 11, 54, 34.

(12) *Sup. Per.* 308, 36.

(13) *Dial.* 157, 15

(14) *Dial.*, 160, 35.

(15) *Oeuvres choisies d'Abélard*, M. De Gandillac, Paris, 1945, pp. 110-26.

(16) A. Arnauld and P. Nicole: *La logique*, 1644 edition, reprinted by Vrin, Paris, 1981.

(17) Condillac: *Traité de l'art de penser*, 1796 edition, reprinted by Vrin, Paris, 1981.

(18) *Nature et culture dans la civilisation de l'Islam*, L'Homme, 4, 1964: 93-104.

From: Harjeet Singh Gill, *The Abelardian Semiotics*. In *Abelardian Semiotics and Other Essays*. New Dehli: Bahri Publications 1989. pp. 1-29.

ABELARD'S MODES OF SIGNIFICATION

"For Abelard there are primarily six modes of signification.

1. *By imposition*. The word, man, signifies mortal rational animal, for this signification is imposed on the word, man. The signification is thus due to human or cultural fact.
2. *By determination*. Rational or man referring to the substances whose predicates they are, also determine the characteristics of rationality. This is why Aristotle states in his *Categories* that the genus and species determine a quality with reference to a substance, a substance on which their names are imposed because of a given quality.

3. *By generation.* The intellection constituted in the word pronounced generates a similar intellection for the one who hears it.
4. *By negation.* A thing designated by a definite noun is in a way signified by an indefinite word. The word, non-man, attributed to an object because it is not a man, signifies in a way also the notion of man. It may signify many other things not covered by the word, man.
5. *By adjunction.* The name Socrates, signifies also a number of his accidental characteristics. The barking of a dog refers to its anger.
6. *By consecution.* When I say that I am his father, it is understood that he is my son. The signification is created within a relational space of reciprocity and simultaneity (*)

It is in the discussion of the nature of universals that we follow the development of Abelardian theory of signification. The problematic revolves around the relation between the signifier and the signified, the word and the thing, and its numerous implications for the general theory of semiotics (9). To signify or to designate is the function of words, to be signified is that of the things. A universal is that which by nature can serve as a predicate of several subjects, a singular, which cannot. It seems that both words and things can be considered as universals, one has to see how the definition of universal can be applied to things. Abelard states that some thinkers attribute universality to things by arguing that there is essentially the same substance in things which are different on in form. If we take away the forms, there would be no difference in things. The difference lies in form or accidents and not in essence. There is the same substance of man which becomes here Plato, there, Socrates, due to their respective accidents.

Abelard argues that this theory does not stand the test of "physics". Suppose that there is in fact a being essentially the same, even though it appears in different forms, exists in different subjects. It must follow that the thing that is within this form be

the same in another form. For example, an animal inhabited by rationality be also the animal inhabited by irrationality, thus the rational animal is at the same time, the irrational animal; is such the two contraries exist in the same subject. Moreover, they will not really be contrary as they would co-exist in the same absolutely identical essence. In fact, the contraries cannot be together in the same subject, even under different rapports, as it is the case with relational and other attributes.

These contraries are presented by some thinkers under different perspective by stating that one should not formulate the proposition as "rational animal is irrational animal". A being can be rational from a certain point of view and irrational from another, the forms which correspond to the same subject are no more opposing forms. And, one does criticize propositions such as "rational and mortal animal" or "white animal and animal that walks", for man is not mortal inasmuch as he is rational or he is white inasmuch as he walks. The one and the same animal can have two properties under different rapports.

Then we come to the Aristotelian theory of ten essences or ten most general genres, for in each case we find the same essence diversified only due to different forms. Thus substances are absolutely the same beings, the same is true of all qualities and all quantities. The realities signified by Socrates and Plato are absolutely the same for essentially they are no more different than the substances to which they are attached as the quality of Socrates and the quality of Plato, for both are qualities. They do not differ from each other in the nature of their qualities or the nature of their substances as the essence of their substance is the same.

Abelard refutes this theory. First of all, why should one restrict only to ten essences. There can be more or less. And, how can we perceive a numerical multiplicity in substances if only the forms are different? We do not consider Socrates as numerically multiple just because he may have multiple forms. Another affirmation that does not stand the test of verity is the statement that the individuals are made by their proper accidents. If the

individuals derive their being from their accidents, the accidents should precede them. If man differs from other species because of the difference in form, the individual named, Socrates, is distinguished by his accidents. Socrates thus cannot exist without his accidents nor man without his differences. Socrates is not the substratum of his accidents. If the accidents are not in the individual substances, they are not in the universal substances also. The theory that states that an absolutely identical essence is found simultaneously in different beings is illogical, asserts Abelard.

There are others who have a slightly better theory of universality when they state that the individuals do not differ from each other only due to their forms, they are also individually distinct in their very essence. Matter and form are both different in every individual. Even if the forms are suppressed, their individual distinctions stay because of the diversity of essences. But there is an impasse, for the theory of universality is not abandoned in this case. It is argued that the distinct beings are the same thing, not by essence but by non-difference. Thus the individual men are distinct from each other but they have the same being in man. They do not differ in the nature of humanity. This universality is due to this non-difference.

Abelard continues to present the divergent views within this doctrine of non-difference. There are some thinkers, he says, who perceive this universal element in the collection constituted of several elements. For them, Socrates and Plato by themselves do not represent a species, but all men taken together constitute the species, man, and all animals together form a genre. A certain unity is attributed to this collectivity, for without this one cannot have a predicate of several individuals. A universal thing will not have multiple subjects and the universals will not be as numerous as the singulars. As such, Socrates inasmuch as he is a man is dissociated from himself as Socrates. He cannot be his own genre or his own species if he is not in one way or the other different from himself, for the relative terms must oppose each other.

Abelard thus refutes this theory of collection. How can a collection of men taken together as one species be a predicate of several subjects and thus be universal while taken in its totality we do not attribute it to subjects taken one by one. If we accept that there is a predicate of different subjects according to its parts, it has nothing to do with the community of the universals, which according to Boethius, should entirely be in each subject. It is this that distinguishes it from the common base, which following its parts, is like a field whose different parts belong to different masters. We could then attribute the predicate, Socrates, to several subjects which would be his different parts, and he would himself be universal. Moreover, we will have to consider a universal any plurality of men put together. Similarly, we will make a unique universal substance from any collection of bodies and souls, and in that case the entire collection of substances will be one of the most general genres. In fact, argues Abelard, if one of the substances is subtracted, the remaining collection is not the most general genre while it is a universal substance. It must be a species of the genre of substance and should have a species which corresponds to it under the 1 same genre. A part is not identical with the whole but the species is always identical with the genre. How can then the entire collection of men be equivalent to an ensemble of animals?

Finally, Abelard presents the theory of those who consider individuals as universals inasmuch as they correspond with others, and accept that they are predicates of several subjects not because they are essentially multiple but because these multiple subjects correspond with them. But argues Abelard, if to be predicated of multiple subjects is equivalent to corresponding with these multiple, how can we say that the predicate individual is accorded to another that is isolated? How the fact of being predicate of several subjects distinguishes the universal from the singular? For, man, inasmuch as he is a man, corresponds with several subjects, but neither man, inasmuch as he is Socrates, nor Socrates inasmuch as he is Socrates, corresponds with others.

Man in Socrates and Socrates himself do not differ from each other. Nothing can be different from itself. This is why Socrates as white and Socrates as grammarian, even though with two different characteristics, is not different from himself, for he is not a grammarian in a way that he is not himself, nor when he is considered white. When they say that Socrates and Plato correspond with each other in "man", how can we believe this, for it is certain that all men are different from each other in matter and in form.

It is obvious that the things, whether they are taken one by one or together, cannot be considered universals, i.e., predicates of several subjects. Thus we must attribute this universality, argues Abelard, to words alone. The grammarians consider some nouns as "appellative", others, "proper". Similarly, for the dialecticians, some simple terms are "universals", others, "particulars", or "singulars". The universal is a vocable that is instituted to serve as a predicate of several subjects taken separately, as the noun, man, that one can join with specific men due to the nature of the real subjects to whom it is attributed. The singular is that which can be a predicate of any one subject, like Socrates." (pp. 38-41)
(...)

"Abelard's theory of signification is further crystallized in *Logica Nostrorum* where he makes a distinction between *vox* and *sermo*. The universals are neither things nor sounds, *voxes*, they are due to *sermones* which may be singular or universal. A noun or a term is due to human institution but a thing or a sound is due to nature. The signifying act is thus a human fact, a cultural fact, as opposed to the physical aspect of the word that is purely natural. Abelard compares this phenomenon with the creative act. A stone and a statue are one and the same "thing" but they are derived from different sources. The stone is the work of God (nature) while the statue is the work of man (culture). The *sermones* are universal because they are created by man, they are predicates of several subjects. The sounds and things are not at all universal even if in physical reality *voxes* and *sermones* are not different. Abelard's theory of signification is presented in an important

article by L. M. De Rijk (**) where he distinguishes between Abelard's views on the signification of words and propositions. To signify, *significare*, with words, *dictiones*, is to generate an intellection in the soul of the hearer. The same is applicable to the denotation of external things, and in this case, the verb is synonymous with *appellare, nominare, demonstrare, designare*. To signify with complete sentences, *propositiones*, is to generate an intellection which is constituted with the liaison of the intellections with its parts, *dictiones*. For Abelard the words first signify intellections, then the things which correspond them. The words generate intellections and with these we arrive at the knowledge of things. Intellections thus play an intermediary role. We have now to enquire about the exact status of things. For Abelard, the race, *cursus*, and he runs, *currit*, refer to the same things as it is considered in *essentia*, the race, and in *adiacentia*, he runs. Jean Jolivet believes that this linguistic approach is more concerned with the mental activity than with the exact nature of things. This is true if we think only of the external aspect of things. In this case, Abelardian theory is different from that of Aristotle. Aristotle's emphasis is on the external things and Abelard is primarily interested in the domain of the spirit or the domain of intellections. As such, we can say that the things signified by words are things as thought of or as produced by intellection. This difference with Aristotle is manifest most clearly in Abelardian theory of the proposition, *propositio*. Even though for Abelard the signification of a proposition is definite, its signified, *significatum*, is not a thing, it is a sort of a half-thing, quasi-res. It depends upon three aspects of the proposition. One may consider it as a verbal phrase, as an intellection expressed by words, or as a thing that is the object of the verbal phrase or the intellection. Abelard states that our expressions have a *consignificatum* rather than a signification so-called, and the task of the proposition is to present a mode of conception, *modus concipiendi*. It does not have a specific content, *in istis nulla imagine nititur intellectus*, but it is derived from it.

The signification of a proposition is further explained by means of the logic of implication, *si rosa est, flos est*. The logic of this necessity lies in the fact that what is stated by the antecedent, *rosa est*, cannot be stated without what is stated by the consequent, *flos est*. If the antecedent is taken either as a grammatical construct or as an act of intellection, it can be without the consequent which can be taken separately as a grammatical or an intellectual construct. On the contrary, the antecedent taken as a fact of logic implies the logical existence of the consequent. This necessity is purely relational, *quidam rerum modus habendi se* and it does not concern the relation between the external aspect of things, nor between intellections taken as psychological or rational acts. It is a relation between the contents of intellections. In other words, these relations are purely logical or formal. The dictum of Abelard is neither an external thing, *res*, nor a mental act as such, but the objectivated content of this act, which being neither a thing nor an act, is called half-thing, *quasi-res*." (pp. 43-44)

Notes

(*) CF. Petrus Abaelardus, *Dialectica*, ed. L. M. de Rijk.

(**) L. M. de Rijk, "La signification de la proposition (*dictum propositionis*) chez Abélard", in: Jean Jolivet, Louis René (eds.), *Pierre Abélard - Pierre le Vénérable. Les courants philosophiques, littéraires et artistiques en Occident au milieu du XII siècle*, Paris: Editions du Centre national de la recherche scientifique 1975, pp. 547-555.

From: Harjeet Singh Gill, "The Abelardian Tradition of Semiotics", in: Harjeet Singh Gill and Giovanni Manetti (eds.), *Signs and Signification*. Vol. I, New Delhi: Bahri Publications 1999, pp. 35-67.

THE SIGNIFICATION OF THOUGHTS AND THE SIGNIFICATION OF THINGS

"Although Abelard draws the material for his studies on logic from such traditional sources as Boethius in the field of dialectic and Priscian in the field of grammar, many of his reflections are so fresh and original that in the history of the problems concerning the bearers of truth and falsity he belongs among the few pioneers who really broke new ground and contributed insights which were a lasting source of inspiration for later generations. The following survey is based upon his glosses on Porphyry's introduction to the *Categories* and Aristotle's *Categories* and *De interpretatione*, which are found in the so-called *Logica ingredientibus* (1), and upon his systematic treatise *Dialectica* (2).

Abelard defines a word (*dictio*) as a sound significant by convention none of whose parts is significant in separation (*D* 147, 21). Some words, namely nouns and verbs, have a definite signification by themselves; other words, namely conjunctions and prepositions, have an indefinite signification by themselves (*D* 117, 26). The definite signification of nouns and verbs, which for certain purposes include also pronouns, adverbs, conventional interjections, and participles (*D* 121, 8, 18; *G* 334, 23), is twofold: they signify thoughts (*intellectus*) and they signify things (*res*). Thoughts are the affections of the soul or the *noemata* of which Aristotle speaks in the first chapter of *De interpretatione*; Abelard interprets *an intellectus* as an act of attending to the nature or a property of a thing which is either present to the senses or put before the mind by means of a mental image (*G* 20, 30; *G* 312, 36; *G* 328, 18). In connection with a thought the verb *significare* either has the same meaning as *exprimere* or *manifestare intellectum* -- the speaker or the word he uses expresses the speaker's act of thinking -- or, more often, it has the same meaning as *constituere* or *generare intellectum*: the speaker or the word he uses produces a certain act of thinking in

the hearer's mind (G 307, 30). For this meaning of *significare* I shall commonly use the phrase 'to produce a thought'. Further, nouns and verbs signify things; for this kind of signifying Abelard uses, apart from *significare*, such verbs as *appellare*, *demonstrare*, *denotare*, *designare*, and *nominare*. For this meaning of *significare* I shall employ the phrase 'to denote a thing'. Although for several reasons Abelard regards the signification of thoughts as more important, in the context of his reflections on *De interpretatione*, than the signification of things (G 308, 19), there is some difference between his conception of the signification of nouns and verbs and Aristotle's. For the latter nouns and verbs primarily signify thoughts; they can only be said to signify things because of the fact that the thoughts which they signify are the likenesses of things. In Abelard, on the other hand, this difference between the directness of the signification of thoughts and the indirect character of the signification of things is less prominent; both significations are treated, so to speak, on the same level. That conjunctions and prepositions have an indefinite signification is the view defended by Abelard in his *Dialectica* (118-120). When, for instance, the preposition *de* and the conjunction *et* are uttered in isolation, they have a signification which is vague and undetermined: the hearer's mind is kept in suspense about that to which they are to be attached. Only when the open places by which they are accompanied have been filled is their imperfect and indefinite signification rendered precise and definite. In the *me* of *homo et lapis*, for example, the general signification of *et*, namely that things are conjoined, has been made specific by the meanings of the two nouns: we now know that we are dealing with the conjunction of a man and a stone. In the glosses on *De interpretatione*, however, Abelard objects that this view makes it impossible to draw a clear distinction between, on the one hand, conjunctions and prepositions and, on the other hand, nouns and verbs; for the latter, too, can be said to have a signification which is not precise until they are combined with other words (G 337, 41). He therefore prefers to say that conjunctions and prepositions when uttered by themselves have

no signification at all; they signify only in combination with other words (*consignificant*), but in that case they contribute a clearly distinguishable part to the meaning of the whole. It is necessary to hold that they have a signification of their own when they are used in combination with other words, since otherwise they cannot be differentiated from letters and syllables.

Whichever of the two views one adopts, there is a problem about the *intellectus* and the *res* which are produced and denoted by conjunctions and prepositions. If those words have a signification, either in isolation or only in combination with other words, they must produce some thought; and they can produce a thought only if there is a thing or a mental image of a thing to which the thought is directed (*G* 338, 41). According to Abelard some authors held that words with an indefinite signification produce a thought but do not denote a thing, in the same way as *propositiones* (*D* 119, 3). But it is hard to see how they could produce a thought if there is nothing to which the thought is related. Some grammarians tried to solve this difficulty by suggesting that prepositions denote the thing which is denoted by the noun to which the preposition is attached; but in that case the denotation of the noun would be superfluous. Abelard's own view is that conjunctions and prepositions denote a certain characteristic (*proprietas*) with regard to the thing that is denoted by the adjoining nouns or verbs. In the combination *in domo*, for instance, the preposition *in* denotes the characteristic of the house that consists in its containing something; and the conjunction *ergo*, placed between statements, denotes the characteristic that consists in the circumstance that the premisses prove the conclusion and the conclusion is proved by the premisses. Abelard finds it difficult, however, to state clearly the thought which belongs to each preposition and conjunction; it is as hard, he says, as stating explicitly the thought that belongs to utterances that are not used for the purpose of making a statement, such as 'Come to me' (*D* 118, 29).

The copulas *est* and *non est* get a separate treatment. They neither produce a thought nor denote anything, but they

contribute to the affirmative or negative import of a *propositio* (*ad vim affirmationis* or *ad vim negationis proficit*) by causing the mind to combine or separate the things thought of (the *intellecta* or *intellectae res*; cf. *D* 154, 25-27). In understanding a *propositio* the mind performs three acts: it thinks of each of the two parts, the subject and the predicate, and it combines or separates the things thought of. Although the act of combining or separating the things thought of is not itself an *intellectus*, it nevertheless is part of the thought produced by the whole *propositio* (*G* 339, 20). Similarly, the conjunctions *si* and *non si* have no signification, but they unite or separate significant sounds by inclining the mind to a certain mode of conceiving (*animum inclinant ad quendam concipiendi modum*; cf. also *G* 329, 29).

The same expression *modus concipiendi* is used in connection with the difference between a finite verb such as *currit* and a noun such as *cursus*. The verb and the noun denote the same thing, running, but the different mode of conceiving it causes a difference in the thought produced (*diversus modus concipiendi variat intellectum*). The distinction between parts of speech pertains to a difference in thought produced rather than to a difference of denotation (*G* 308, 25).

In *D* 124, 11, a distinction is made between the principal signification of a noun and its accidental significations, which have to do with the modes of signifying. The difference between singular and plural is said to be a difference of accidental signification. Differences in case and gender, on the other hand, are not related to any difference in signification, but only to the position which nouns can occupy in constructions (Cf. *G* 364, 2). Similarly, such pairs as *comedere/vesci* ('to eat') and *carere/non habere* ('to lack') have the same signification but they play different roles in constructions (*D* 125, .33; *G* 369, 27). The same is true of such forms as *curro*, *curris*, *currit*, *curritur*. They all have the same signification but the ways in which they are completed into a full *propositio* by the addition of such pronouns as *ego*, *tu*, *ille*, *a me*, *a te*, *ab illo* are different. In other words,

differences in person are not connected with any difference in signification, whereas differences in number, tense, and mood are differences in (accidental) signification (G 138, 31)." (pp. 139-142)

Notes

(1) Edited by B. Geyer, *Peter Abaelards philosophische Schriften, Beitrage zur Geschichte der Philosophie and Theologie des Mittelalters* XXI, 1-3, Münster, 1919-1927; I shall refer to this work by means of the letter *G*, followed by page and line.

(2) Edited by L.M. De Rijk, Assen, 1956 (revised edition 1970); I shall refer to this work by means of the letter *D*, followed by page and line.

I Abelard *D* 112, 6; *G* 308, 11; *G* 357, 29) and others connect the phrase *continuere intellectum* with Aristotle, *De int.* 16 b 21: *histesi -- ten dianoian* had been translated by Boethius as *constituit intellectum*. They apparently took *intellectum* as referring to the hearer's thought.

From: Gabriel Nuchelmans, *Theories of Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Amsterdam: North-Holland 1973.

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Theories of the Copula in the Logical Works of Abelard

THE USE OF THE COPULA IN ABELARD'S LOGIC

"With Abelard, the term 'copula' enters into western thought. In fact, although widely attested, the use of the term 'copula' in reference to Aristotle's work is totally anachronistic. (16)

What led to this term? In his *Dialectica*, Abelard was mainly concerned with the way syllogisms can be construed. The interest of the copula was in fact derivative from this main concern. As Kneale and Kneale (*The Development of Logic*, 1962: 206) put it, 'it is clear that for his [Aristotle's] theory of syllogism he assumes in every general proposition two terms of the same kind, that is to say, each capable of being a subject and each capable of being a predicate'. Thus, since the only linguistic entities that can play these two roles are nouns (in modern terms, noun phrases), it is easy to understand why the copula became central. Abelard pursued the Aristotelian theory by emphasizing the role of *be* as the element that can turn a noun into a predicate in a syllogism rather than as the element that provides the sentence with a time specification (see *Dialectica* 161).

It is this conceptual shift that underlies the invention of the term 'copula', which is cast on the Latin *copulare* meaning 'to link'. For example, in sentences like *a man* is a mammal and *Socrates* is a

man the copula allows the noun phrase *a man* to play the role of the subject, in the first, and that of the predicate, in the second. Clearly, in such a framework the assumption that the copula can be interpreted as a predicate meaning 'existence' cannot be maintained (...). We have an explicit argument by Abelard to overcome this problem. Let us reproduce it synthetically as follows. A sentence like *Socrates est* (Socrates is), where *est* (is) just occurs with a subject, potentially undermines the theory of the 'copula' as link between a predicate and a subject like in *Socrates est homo* (Socrates is man). To avoid this inconsistency, Abelard appeals to a typical *reductio ad absurdum* (*Dialectica* 137, 162)."

We interpret *Socrates est* as meaning *Socrates est ens* (Socrates is existing, where *ens* is (the Nominative, singular form of) the present participle of *esse*, be). Suppose that *est* means *est ens*, that is, *est* is a predicate meaning existence. Then nothing would prevent a sentence like *Socrates est ens* from being interpreted as *Socrates est ens ens*, and that from being interpreted as *Socrates est ens ens ens*, etc., ad infinitum without reaching a stable meaning.(17)

Thus, Abelard concludes, in the sentence *Socrates est*, the predicate of existence is just not expressed.(18)

Notes

(16) See for example J. L. Ackrill's comment on *De Interpretatione* (Ackrill 1963). Aristotle always avoids employment of a special name for the copula: rather he refers to actual instances of εἶναι (be). Not all translators seem to be aware of this fact. In the *De Interpretatione* (*De Int.* 3, 16b, 25), for example, Aristotle says that εἶναι προσσημαίνει δεῖ σύνθεσιν τινα. Ackrill's translation says "but it additionally signifies some combination" (Ackrill 1963: 45). Cooke, instead, renders it as "but imply a copulation [sic] or synthesis" (Cooke 1938: 121).(...)

(17) For a discussion on this matter see Kneale and Kneale (*The Development of Logic*, 1962) and Pinborg (*Logik und Semantik*

im Mittelalter, 1972).

(18) Correspondingly, the common use of *to be* (or *being*) as a shortened form of *to be* (or *being*) *existent* is to be treated in the same way. The following passage pointed out to me by Giulio Lepschy illustrates the point: *Dixit Deus ad Moysen: ego sum qui sum. Ait: sic dices filiis Israel: qui est, misit me ad vos* (*Exodus*, III 14). From a linguistic point of view, however, this should not be surprising. A similar case is that of *to do* (or *doing*) as a shortened form of *to do* (or *doing*) something. Interestingly, the term 'existence' is not etymologically related to the copula *essere* / εἶναι but to a locative predicate *sisto* and a locative particle *ek-*.

From: Andrea Moro, *The Raising of Predicates. Predicative Noun Phrases and the Theory of Clause Structure*, (Appendix: A Brief History of the Copula, pp. 248-261), Cambridge: Cambridge University Press, 1997.

"Before embarking on a discussion of Abelard's views on sentential predication and the role of the copula, it seems useful to summarize our author's basic views on the noun and verb.

1) 'Nomen' (noun, name) is defined (in the Aristotelian-Boethian tradition) as 'a spoken sound having a signification by convention, without the notion of time, of which no parts are meaningful in separation' (*Dialectica* 121,28-9; cf. 129,4-5 and *Glosses in Peri hermeneias* 334,18ff.). It should be borne in mind that like the Ancients the Medievals too, were in the constant habit of not sharply distinguishing between a noun's (or verb's or any other significative expression's) significate and the 'thing' (whether substantial or accidental) signified in the outside world.

(1)

2) Verbum ('verb') is defined (*Dialectica* 129,11-3) as: 'a spoken sound, having a signification by convention, which, in its finite forms, is designative of the present time, of which no part have meaning in separation'.

3) As a logician Abelard is quite explicit throughout his works about the semantic difference between categorematic words (nouns and verbs) and syncategorematic ones (prepositions, conjunctions etc.). As to the differences between the noun and verb his opinions are less stable, it seems. So much seems to be certain, on the semantic level Abelard recognizes a close affinity between the noun and verb as, in his opinion, they are just various tools to convey identical sememes [so e.g. 'cursus' ('course') and 'currere' ('to run')], whereas they only differ by the different ways in which they convey the common sememe ('*modus significandi*').

4) Both nouns and verbs have the job of naming and determining, whereby the difference between 'naming' and 'determining' is only of a syntactic nature, it seems. On the level of naming and determining (onomazein-level), the noun and verb convey, each in their own ways (nominally or verbally, respectively), some semantic content ('sememe'). By this, they constitute some 'idea' ('*conceptio*', '*conceptus*', '*intellectus*') in somebody's mind (the speaker's or the hearer's that is), but still without conveying any complete thought or sense.

5) Contrariwise, on the level of 'statement-making' (*legein* level) the (finite) verb when actually used (2) comes to be really 'statement making', to the extent indeed that it performs this job together with some noun(s) but nonetheless being itself the statement-maker, properly speaking." (pp. 98-99)

Notes

(1) For this phenomenon, see e.g. De Rijk, *Plato's Sophist. A Philosophical Commentary*, Amsterdam, North-Holland, 1986, Index, s.v. *Name*. For Peter Abelard, see e.g. *Glosses in Peri hermeneias* 126,35-127,13; *Dialectica* 564,6-9 and all the passages in which he explains the *significatio rerum* (vs. *intellectum*). The distinction always concerns the opposition of *res significata* to *intellectus significans res*, rather than the *intellectus* as such.

(2) For this condition, see N. Kretzmann, *The Culmination of the Old Logic in Peter Abelard*, p. 495, n. 33, cf. De Rijk *Plato's Sophist. A Philosophical Commentary*, 15.23. 15.32 and 16.4 and below p. 101

From: L. M. de Rijk, "Peter Abelard's Semantics and His Doctrine of Being", *Vivarium*, 24, 1986, pp. 85-127.

"The distinction of nouns or names (a category that includes adjectives) from verbs was as much argued over in Abelard's day as in ancient times, and it provided Abelard with an entry to matters that lie at the heart of his philosophy. He rejects Aristotle's view that verbs differ from nouns in having a consignification of time, for he sees no reason not to ascribe a similar consignification to nouns:

For just as 'run' or 'running' indicate running in connection with a person as presently inhering in him. so 'white' determines whiteness in connection with a substance as presently inhering, for it is called white only because of present whiteness. (1) Abelard is equally unhappy with the idea that verbs, as distinct from other parts of speech, signify only actions and passions, or what might better be called 'receptions' (*passiones*, i.e. the passive correlates of actions). This view runs afoul of the copula which although accepted as a verb can be used to 'join' (*copulare*) to its subject any sort of entity whatsoever.'(2) What distinguishes verbs, in Abelard's view, is that they provide the 'completeness of sense' (*sensus perfectio*) characteristic of whole sentences (*orationes perfectae*) as distinct from mere phrases (*orationes imperfectae*). What is the difference, he asks, between 'A man runs' and 'a running man'? Of constructions such as the latter he remarks:

But a completeness of sense has not yet been brought about in them; for when this expression has been uttered the mind of the hearer is suspended and desires to hear more in order to arrive at

completeness of sense, for example. 'is' or some other acceptable verb. For without a verb there is no completeness of sense.' (3)

Verbs can perform this function because they propose the inherence of what they signify in the subject.

Thus we see that this completeness of sense depends mainly on verbs, since only by them is inherence of something in something indicated in a manner expressive of different mental states; without this inherence there is no completeness of sense. When I say 'Come to me' or 'If only you would come to me', in a way I propound the inherence of coming to me in a manner expressive of my order or my desire; in the one case I order that coming should belong to him, in the other I have a desire, namely, that he come.' (4)

The talk of 'inherence', however, must be treated delicately, for it is not Abelard's view that any verb, even the copula, signifies some relational property of inherence. Rather verbs generally signify that which 'inheres', while the copula, according to one of Abelard's accounts of it, signifies nothing at all. If any verb were to signify 'inherence', then it would be unable to perform the 'linking' function, i.e., the function of the copula, which is to 'link' what the predicate signifies to the subject. 'Runs' signifies running and 'links' it as well. The copula 'is' really expresses just this linking function implicit in all verbs; if it were to signify anything on its own it could no more take a predicate noun or adjective and link its significate to a subject than can 'runs'. (5)

This view is taken still further when Abelard separates 'to be' used as a copula from 'to be' used to mean 'to exist'. If the separation is not made we have problems with sentences such as 'Homer is a poet' and 'A chimera is conceivable', where the subjects are non-existent or even impossible. Abelard's solution is to treat the whole phrase consisting of copula plus predicate noun or adjective as a single verb-phrase and in this way eliminate any idea that 'to be' on its own is predicated of the subject.

Thus it seems to me if I may dare to speak freely, that it would be more rational and satisfying to reason that ... we understand as a single verb 'to be a man' or 'to be white' or 'to be conceivable'.

Aristotle indeed says that in 'Homer is a poet-to be' is predicated *per accidens*, i.e., 'to be' is predicated accidentally of Homer in that the poem belongs to him, but it is not predicated per se of Homer that he is. But since 'to be', as was said, is not a verbal unit, to be predicated *per accidens* is not to be predicated; rather 'to be' is part of the predicate."

Abelard in effect wants us to treat the copula as what a modern grammarian would call an auxiliary, and indeed Abelard draws support for his view from the implausibility of dividing up '*erit sedens*' (will be sitting) into two parts, because of the conflict of tenses between auxiliary and participle."

The copula, then, turns out to be a verb-phrase-maker, taking as complements nouns, participles, and whole clauses and turning them into verb phrases. But the process should not be thought to leave the complement with the same meaning it has in isolation, for this leads to logical absurdities. As we have seen, the noun following the copula has in isolation a tense of its own (generally the present), and this can conflict with the tense of the copula. For example, 'This old man was a boy' will be necessarily false if we treat 'boy' as retaining its signification of present time, for then the sentence is equivalent to 'This old man was one of those who is presently a boy.'" What we must do, Abelard says, is treat the whole copula plus predicate noun as a single verb having the tense of the copula. He shows how only in this way can the rules of conversion and syllogistic inference be made to apply to sentences with verbs in tenses other than the present.' (6)" (pp. 144-146, Latin text in the notes omitted)

Notes

(1) Abelard, *Dialectica* p. 122.22-5

(2) Ibi *Dialectica*, 130.32 - 131.7

(3) Ibi *Dialectica*, 148.26-30

(4) Ibi *Dialectica*, 149.20-6

(5) See Abelard *Philosophische Schriften. I. Die Logica 'Ingredientibus'*, 1919-1927 p. 362.25-9

(6) Abelard, *Dialectica* p. 138.11-22

From: Martin Tweedale, "Abelard and the Culmination of the Old Logic", in: Morman Kretzmann, Anthony Kenny, Jan Pinborg (eds.), *The Cambridge History of Later Medieval Philosophy: From the Rediscovery of Aristotle to the Disintegration of Scholasticism, 1100-1600*, Cambridge: Cambridge University Press 1982.

THE DIFFUSION OF ABELARDIAN WRITINGS

"The surviving manuscript books containing works by Abelard and by his students and disciples have a history and reveal much about the activities of the anonymous students of Abelard's thought. They were produced, exported, copied and read at great labour and for particular reasons. In their character, in the markings which they bear, in the frequency with which they are encountered in libraries, in the relationship of the copies to each other, can be found indications of the kinds of interests which were aroused by Abelard's teachings and of the uses to which they were put. This is as true of copies of Abelard's own works as of those of his disciples. The study of the diffusion of these manuscripts is complex but it is also the study of the geography of twelfth-century thought and learning; it assists our appreciation of the widespread interest in Abelard's writings and by implication in those of other masters. Our main concern is with manuscripts produced before 1500 and containing the major doctrinal works of Abelard and of his disciples. The poems, the personal correspondence with Héloïse, the smaller occasional letters and pieces are less instructive in this respect than the logical writings, the biblical commentaries, the *Theologia* and *Sic et Non* in their many versions, the *Ethica* and the *Dialogus*.

Manuscripts produced after the twelfth century are less relevant, but are none the less valuable because they presuppose earlier exemplars and because they witness to the history of the copying of particular works.

Several of Abelard's writings are wholly lost. The glosses on Ezechiel which Abelard delivered at Laon and then finished at Paris were transcribed and circulated but do not now survive.(1) The letter in which Abelard attacked Roscelin of Compiègne is only known through Roscelin's reply(2) and from a reference in a letter which Abelard wrote to the bishop of Paris. His *Grammatica* is lost,(3) as is the *Exhortatio* which he delivered to the monks of St Denis.(4) Heloise received from him a *Psalterium* which consisted perhaps of a series of collects to follow the recitation of the Psalms.(5) It is even possible that Abelard wrote both an *Anthropologia* (the counterpart in his teaching about man of the *Theologia* which concerns God and the Trinity) (6) and a *Rhetorica*.(7) He may also have written glosses on the *De syllogismo categorico* and *De syllogismo hypothetico* in his *Introductiones parvulorum*,(8) a commentary on the *De syllogismo hypothetico* in his *Logica Ingredientibus* (9) and further commentaries in the *Logica Nostrorum*. Even of Abelard's surviving works the varying versions and revisions are not fully available. Analysts of Abelard's texts have posited the existence of two versions preceding the surviving version of the *Dialectica* (10) as well as of other versions of his *Logica*.(11) Fr Buytaert believes that the earliest version of the *Sic et Non* is lost. (12) Moreover, among the extant versions completeness is all too infrequently found. Losses have occurred too among the writings of Abelard's followers. The authors of the *Sententie Hermanni*(13) and of the *Sententie Parisienses I* (14) may have composed commentaries on St Paul's *Epistle to the Romans*, while a *Liber Sententiarum*, containing opinions which appeared to be derived from Abelard's teaching, crossed the path of Bernard of Clairvaux in the period before the council of Sens.(15) The surviving copies of Abelardian works are, however, numerous enough to permit a consideration of the extent and the manner of

their diffusion and appeal. Of Abelard's own major works the *Theologia* is found in eighteen manuscripts, the *Sic et Non* in ten, the *Ethica* in five, the *Dialogus* in three, the commentary on the *Hexaemeron* in four and that on *Romans* in three. A single manuscript contains a fragment of the *Apologia* and there are single copies of Abelard's logical works.(16)" (pp. 60-62, notes renumbered)

Notes

(1) *Hist. Calam.*, 11. 196-248.

(2) Ed. Josef Reiners, *Der Nominalismus in der Frühscholastik*, Münster 1910, pp. 63-80; an earlier edition is in PL. 178, 357-72, and see Abelard, *Epist. ad G. episcopum Parisiensem*, (PL. 178, 355-358). Also D. Van den Eynde, '*Les Ecrits perdus d'Abelard*', (*Antonianum*, 37, 1962, pp. 467-480), p. 469 and H. Ostlender, *Peter Abaelards Theologia 'Summi Boni'*, BGPTMA [Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters], XXXV, 2/3, 1939 pp. XVIII-XX.

(3) References from the *Theologia Christiana* and *Theologia 'Scholarium'* are analysed by Van den Eynde, *Ecrits perdus*, pp. 473-6. See also M. Dal Pra, Pietro Abelardo. *Scritti filosofici*, Roma-Milano, Bocca, 1954, p. XXXIII, n. 20.

(4) Van den Eynde, *Ecrits perdus*, pp. 469-73.

(5) *Ibid.*, pp. 476-80.

(6) Cf. Abelard, *Expositio in 'ad Romanos'* (PL. 178, 901A); also Buytaert, 'Critical Observations on the "Theologia Christiana" of Abelard', (*Antonianum*, vol. 38, 1963, pp. 384-433) p. 402, n. 4.

(7) References in Abelard's *Super Topica Glossae*, ed. Dal Pra [*Scritti filosofici*], p. 263, l. 25, p. 267, l. 16; also *ibid.*, pp. XXII-XXIII.

(8) Pietro Abelard. *Scritti filosofici*, ed. Dal pra, pp. XXV and XXVI.

(9) References, as to a work yet to be written, are in the *Logica 'Ingredientibus'* ed. Geyer, p. 291, l. 25 and p. 389, l. 7 and in the *super Topica Glossae*, ed. Dal Pra, p. 325, l. 10. Further evidence

in M. Grabmann, 'Kommentare zur aristotelischen Logik aus dem 12. und 13. Jahrhundert in MS. lat. fol. 624 der Preussischen Staatsbibliothek in Berlin'. (*Sitzungsberichte der Preussischen Akademie der Wissenschaften*, 1938, pp. 185-210), p. 200.

(10) N. d'Olwer, 'Sur la date de la *Dialectica* d'Abélard', *Revue du moyen âge latin*, 1, 1945, pp. 375-90 and L. M. De Rijk, Petrus Abaelardus. *Dialectica*, Assen, 1956, pp. XXII-XXIII.

(11) Geyer, *Untersuchungen*. Peter Abaelards Philosophische Schriften, II, (BGPTMA, vol. 21, 4, 1933, pp. 589-633), pp. 611-12.

(12) 'The Greek Fathers in Abelard's *Sic et Non*', (*Antonianum*, vol. 12, 1966, pp. 413-453) p. 414.

(13) Cf. Ostlender, 'Die Sentenzenbücher der Schule Abaelards', (*Theologische Quartalschrift*, vol. 117, 1936, pp. 208-252) pp. 214-15.

(14) *Sent. Paris.*, ed. Landgraf, p. 29; also Ostlender in *Bulletin Thomiste*, VIII (1931), p. 229.

(15) See above, p. 14.

(16) The commentary on the *De interpretatione* in the *Logica 'Ingredientibus'* is an exception; two copies are known, see below, p. 89.

From: David E. Luscombe, *The School of Peter Abelard. The Influence of Abelard's Thought in the Early Scholastic Period*, Cambridge,: Cambridge University Press 1969.

"The very important cod. Milan, Ambrosiana M. 63 sup. which contains on ff. 1r-72r a large part of the *Logica 'Ingredientibus'* in a copy of the late twelfth or early thirteenth century has been in the Ambrosian Library since its foundation in the early seventeenth century; (1) it was received by Cardinal Federigo Borromeo as a gift from Camillo Bossi of Modena in 1605, but its earlier history is not known.(...) The last part of the commentary on Aristotle's *De interpretatione* contained in this manuscript has been shown by Dr Minio-Paluello(3) to have issued from a circle in which were debated problems similar to those discussed by

Abelard, and the same manuscript also contains on ff. 72v-81v a commentary on Porphyry's *Isagoge* composed by a disciple of Abelard.(4) Dr. Minio-Paluello believes that the authentic and complete version of Abelard's commentary on the *De interpretatione* in the corpus of his *Logica 'Ingredientibus'* is found in a copy made by an Italian scribe of the late twelfth century in cod. Berlin, Deutsche Staatsbibliothek lat. fol. 624, ff. 97r-146r. This manuscript belonged to St Victor in Paris in the later middle ages.(5)” (pp. 88-89)

Notes

(1) Ed. from this manuscript by B. Geyer; for descriptions see Geyer, *Abaelards Philosophische Schriften*, 1, X, and L. Minio-Paluello, *Abaelardiana Inedita*, p. XVI. The manuscript was noted by B. Montfaucon, *Bibliotheca Bibliothecarum*, I, 521n and in the *Histoire littéraire de la France*, XII (1763), 130.

(3) *Abaelardiana inedita*, pp. XVI-XXI.

(4) *Glossae super librum Porphyrii secundum vocales*, ed. C. Ottaviano [*Testi medioevali inediti. Fontes Ambrosiani, III*. Edited by C. Ottaviano. Firenze, Olschki, 1933]; incomplete ed. by B. Geyer. See also Geyer, *Untersuchungen*, pp. 601-12.

(5) The commentary was discovered by M. Grabmann, 'Kommentare', pp. 203-5, and the latter part of it is ed. by Minio-Paluello, op. cit., pp. 1-108. For descriptions of the manuscript see Grabmann, 'Kommentare', especially pp. 185-6, and Minio-Paluello, op. cit., pp. XII-XVI.

From: David E. Luscombe, *The School of Peter Abelard. The Influence of Abelard's Thought in the Early Scholastic Period*, Cambridge,: Cambridge University Press 1969.

“The evidence of all these manuscripts contributes to an understanding of the nature of the appeal of Abelard's writings and of those of his followers to twelfth-century scholars. Manuscripts containing Abelard's logical writings are relatively

few in number. Although, as John of Salisbury shows in his *Metalogicon* and Abelard in his *Historia Calamitatum*, logic was the subject of passionate disputes arousing widespread interest, documents presenting these debates are not abundant.(2) Of Abelard's logical writings some are lost and only one (the commentary on the *De interpretatione* in the *Logica Ingredientibus*) survives in more than a single copy. Yet in comparison with the works of contemporaries, those of Abelard survive extremely well for the logical writings of Roscelin, William of Champeaux, Master Alberic, Jocelyn of Soissons, Bernard of Chartres and Robert of Melun are entirely lacking while from Adam of the Petit Pont we have only two copies of the *Ars disserendi*.(3) The habit of publishing one's logical teaching may have been under-developed among the logicians and quite possibly manuscripts of logic have had a poorer chance of surviving through the centuries. Those of Abelard are for the most part exceptional in bearing clear, contemporary indications of their author. The evidence collected suggests that the logical teaching of Abelard and of other masters was discussed not only in Paris but also in several other centres, at Fleury on the Loire, in the circle of Robert of Torigny, in some of the religious houses of Germany and possibly too in Italy. Copying, however, appears to have ceased in the thirteenth century and it is then that a new period begins in the history of logic characterized by the work of such masters as Lambert of Auxerre, William of Shyreswood and Peter of Spain and by the absorption of further translations of Aristotle's logical writings.” (pp. 93-94)

Notes

(2) To say this is not to ignore the series of discoveries made by the late M. Grabmann in several of his more recent articles.

(3) Ed. L. Minio-Paluello.

From: David E. Luscombe, *The School of Peter Abelard. The Influence of Abelard's Thought in the Early Scholastic Period*, Cambridge,: Cambridge University Press 1969.

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Abelard's Philosophical Works: Editions, Translations, Selected Texts

ABELARD'S MAIN LOGICAL WORKS

The Philosophical works of Abelard are composed from several parts, only partly extant (for the detail see the next list):

1. Peter, Abelard. 1969. "Editio Super Porphyrium." In *Scritti Di Logica*, edited by Dal Pra, Mario, 3-42. Firenze: La Nuova Italia.
Introductiones dialecticae (Introductiones parvulorum): I.
2. ———. 1992. "Super Porphyrium." *Traditio* no. 47:74-100.
Second Appendix to Yukio Iwakuma essay: *Vocales, or Early Nominalists* (pp. 37-111).
3. ———. 1933. "Glossae Super Porphyrium Secundum Vocales." In *Peter Abaelards Philosophische Schriften. Ii. Die Logica "Nostrorum Petitioni Sociorum". Die Glossen Zu Porphyrius*, edited by Geyer, Bernhard, 583-588. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
4. ———. 1933. "Glosae Super Librum Porphyrii Secundo Vocalem." In *Testi Medioevali Inediti. Fontes Ambrosiani, Iii*, edited by Ottaviano, Carmelo, 107-207. Firenze: Olschki.

DETAILED LIST OF THE LATIN LOGICAL WORKS

1. Peter, Abelard. 1919. "Glossae Super Porphyrium." In *Peter Abaelards Philosophische Schriften. I. Die Logica 'Ingredientibus'. 1. Die Glossen Zu Porphyrius*, edited by Geyer, Bernhard, 1-109. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
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3. ———. 1969. "Glossae in *Categorias*." In *Scritti Di Logica*, edited by Dal Pra, Mario, 43-68. Firenze: La Nuova Italia.
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7. ———. 2010. *Glossae Super Peri Hermeneias*. Turnhout: Brepols.

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8. ———. 1958. "Glosse *Super Periermenias* Xii-Xiv." In *Twelfth Century Logic: Texts and Studies. Vol II: Abelardiana Inedita*, edited by Minio-Paluello, Lorenzo, 1-108. Roma: Edizioni di Storia e Letteratura.
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11. ———. 1969. "De Divisionibus." In *Scritti Di Logica*, edited by Dal Pra, Mario, 155-204. Firenze: La Nuova Italia. *Introductiones dialecticae (Introductiones parvulorum): IV.*
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12. ———. 1956. *Dialectica*. Assen: Van Gorcum.
13. ———. 1994. "Tractatus De Intellectibus." In *Des Intellections*, edited by Morin, Patrick, 24-96. Paris: Vrin.
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- 1840, deuxième édition, pp. 461-496, reprinted in appendix to: Lucia Urbani Ulivi, *La psicologia di Abelardo e il "Tractatus de Intellectibus"*. Roma, Edizioni di Storia e Letteratura, 1976, pp. 103-127.
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1. Peter, Abelard. 1836. *Ouvrages Inédits D'Abélard Pour Servir À L'histoire De La Philosophie Publiés Par M. Victor Cousin*. Paris: Imprimerie Royale.
Contains the first edition of: *Dialectica* (pp. 173-497); *Glosse in Porphyrium* (pp. 551-576); *Glosse in Categoriam* (pp. 577-594); *Glosse in Librum De Interpretatione* (pp. 595-602); *Glosse in Topica Boethii* (pp. 603-610).
This work is superseded by the editions of Geyer and De Rijk.
2. ———. 1919. *Peter Abaelards Philosophische Schriften. I. Die Logica 'Ingredientibus'. 1. Die Glossen Zu Porphyrius*. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters. n° 21 (Part 1).
Contents: Einleitung V-XII; *Logica Ingredientibus*. [The Logic that begins with the words: *For beginners*] First Part: *Glossae super Porphyrium* [The commentary from *Logica Ingredientibus* on Porphyry's *Isagoge*] pp. 1-109.

3. ———. 1921. *Peter Abaelards Philosophische Schriften. I. Die Logica "Ingredientibus". 2. Die Glossen Zu Den Kategorien*. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters. n° 21 (Part 2).
Contents: *Logica Ingredientibus*. [The Logic that begins with the words: *For beginners*] Second Part: *Glossae super Predicamenta* [The commentary from *Logica Ingredientibus* on Aristotle's *Categories*] pp. 111-305.
4. ———. 1927. *Peter Abaelards Philosophische Schriften. I. Die Logica "Ingredientibus". 3. Die Glossen Zu Peri Ermhneias*. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters. n° 21 (n° 3).
Contents: *Glossae super Periermeneias* [Glosses on Aristotle's *De Interpretatione*] pp. 307-503.
5. ———. 1933. *Peter Abaelards Philosophische Schriften. Ii. Die Logica "Nostrorum Petitioni Sociorum". Die Glossen Zu Porphyrius*. Münster: Verlag der Aschendorffschen Verlagsbuchhandlung.
Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters. n° 21 (n° 4).
Contents: *Logica nostrorum petitioni sociorum: Glossulae super Porphyrium*. [The Logic that begins with the words: *At the request of our friends* or *Little Glosses on Porphyry Isagoge*] pp. 505-580. *Glossae super Porphyrium secundum vocales* 583-588. Untersuchungen 591-633; Sachindex zu den Texten 634-648.
6. ———. 2010. *Glossae Super Peri Hermeneias*. Turnhout: Brepols.
Corpus Christianorum Continuatio Mediaevalis Vol. 206.
Critical edition with introduction and notes.
"The commentary on Aristotle's *Peri hermeneias* is certainly one of the most important texts in the corpus of Peter

Abaelard's works on logic. The author discusses the Aristotelian text in an unbiased and thorough manner without avoiding any difficulties, and thereby addresses all basic issues of classical logic and semantics. The text forms part of the so-called "mixed commentaries" and is characterised by short self-contained systematic discussions within an explication of the Aristotelian text. Of particular significance are the discussions of predication (chapter 3), future contingentia (chapter 9) and modal logic (chapters 12-14).

In 1927, this substantial commentary was edited by Bernhard Geyer. The edition was based on the only manuscript of the text then known to scholarship (Milan, Biblioteca Ambrosiana M 63 sup., fols. 45r-72r). In 1938, M. Grabmann discovered a second manuscript of the work (Berlin, Staatsbibliothek Preussischer Kulturbesitz, lat. fol 624, fols. 97r-146r). As L. Minio-Paluello has shown, the final part of Abaelard's text, which includes the long excursus on modal logic and the commentary on chapters 12-14, is accurately preserved only in this second manuscript. He edited this final part in 1958.

A detailed comparison of the two manuscripts showed that the differences between them are so numerous and noteworthy that a new critical edition was necessary. Geyer's and Minio-Paluello's editions could be improved upon in several places. Aristotle's text in the version known by Abaelard is also included."

7. ———. 1958. *Twelfth Century Logic: Texts and Studies. Vol II: Abelardiana Inedita*. Roma: Edizioni di Storia e Letteratura.

"The present volume contains an edition of two logical texts -- one certainly and the other probably by Abailard -- which have not been published in print before now.(1) The first -- a section of Abailard's longer commentary on Aristotle's *De interpretatione*, now usually known as the third part of the *Logica 'Ingredientibus'* -- was discovered about twenty years

ago by the late Martin Grabmann.(2) The second, consisting of two sections apparently extracted from one or two otherwise lost works by Abailard (?), was seen and mentioned, though not ascribed to this author, by Bernhard Geyer.(3)

ABAILARD'S COMMENTARY ON ARISTOTLE'S DE INTERPRETATIONE CHAPTERS XII-XIV.

Abailard's more extensive commentary on Aristotle's *De interpretatione* (*Peri hermeneias*) is preserved complete in one manuscript, now in Berlin, and incomplete in another manuscript, now in Milan. Geyer published the text of the latter; (4) a short passage of the section missing from it was included by Grabmann in his description of the former. (5) " (pp. XII-XII).

(1) No other unpublished logical works ascribed to Abailard are known to exist. There are, however, a number of references to and quotations from logical writings of Abailard in unpublished texts; see, e.g., below, p. XLI, and Grabmann's paper mentioned in the next note. It is possible that one or more works in cod. Orleans 266 (see below, pp. XLII-XLVI) belong to him.

(2) M. Grabmann, *Kommentare zur aristotelischen Logik aus dem 12. und 13. Jahrhundert* in *MS lat. fol. 624 der Preussischen Staatsbibliothek in Berlin* (" *Sitzungsber. d. Preuss. Akad. d. Wissensch.*" 1938, pp. 185-210).

(3) B. Geyer, *Peter Abaelards Philosophische Schriften*, IV, Münster 1933 (" *Beitr. z. Gesch. d. Philos. u. Theol. d. Mittelalt.*" XXI. 4), p. 595 n. 3.

(4) *Op. cit.*, III, Münster 1927, pp. 307, 1-497.20.

(5) *Op. cit.*, p. 204.

"The short text which appears under the title of "*Secundum M. Petrum sententie*" in a collection of logical writings originally belonging to the library of the monastery at Fleury (cod. Orleans 266, pp. 278-281) is fragmentary. (...)

The text clearly consists of two sections, in no way distinguished from each other in the manuscript. The first

contains the analysis of a paralogism; the second, four problems arising from the use of 'totum', and their solutions. It is conceivable that the second section originated in the study of -- or might even be extracted from a commentary on -- Boethius's *De divisione*, which is partly concerned with 'totum' and includes more than once examples referring to the parts of a house. But there is nothing in the first section of the *Sententie* to suggest that it may belong to such a work, or indeed that it is part of the same work as the second section. There is, however, much in common between the two sections: the concepts used and the methods applied for the solution of logical difficulties are the same: much turns, in both sections, on the distinction between the "personal" and the "ad sensum" reference of words, or, roughly speaking, between the reference to individual things and the reference to concepts. Again, much use is made of logical "regule" in both sections. These common characteristics do not necessarily point to unity of work, but rather to the interest which caused the compiler to connect these two sections in one text.

This text can be tentatively ascribed to Abailard. It is found in the midst of writings by Jocelyn (Goslenus) and other, anonymous, masters of the first half and middle of the twelfth century." (pp. XXXIX-XLI).

8. ———. 1969. *Scritti Di Logica*. Firenze: La Nuova Italia. Indice: Introduzione XI-XXXIX; Avvertenze XL; Introductiones dialecticae: *Editio super Porphyrium* 3; *Glossae in Categorias* 43; *Editio super Aristotelem De interpretatione* 69; *De divisionibus* [Gloss on Boethius *De divisione*] 155; Logica "Ingredientibus": *Super topica glossae* [The commentary from *Logica Ingredientibus* on Boethius *De topicis differentiis*] 205-330. Seconda edizione; prima edizione col titolo: *Scritti filosofici*, Milano, Bocca, 1954.
9. ———. 1956. *Dialectica*. Assen: Van Gorcum.

First complete edition of the Parisian manuscript; with an introduction by L.M. De Rijk (Introduction CVI pages; Text pages 51-637); second revised edition 1970 (Introduction CXII; Text pages 51-669).

The *Dialectica* was edited incompletely for the first time by Victor Cousin in *Ouvrages inédits d'Abélard*, Paris 1836, pp. 173-497.

The beginning (and the end?) of the text is missing:

"Nevertheless I commence the text on p. 51, in the case someone should be fortunate enough to find it [the beginning]" (De Rijk, note 3, p XIII).

First complete edition of the Parisian manuscript; with an introduction by L.M. De Rijk (Introduction: IX-XCVII; Text: 51-598; Indices: 601-637; the beginning is lost); second revised edition 1970.

Contents of the Introduction: 1. Peter Abailard. Life. Works on logic IX; 2. Abailard's *Dialectica*. The manuscript. Sources. 3. Masters mentioned in the *Dialectica*. Date of the *Dialectica* XII; 4. The content of the *Dialectica* XXV; 5. Inference. Consequence. Syllogism XXXI; 6. Categorical proposition. Terms. Copula. Identity theory. Inherence theory XXXVI; 7. Hypothetical proposition. Implication. Conjunction. Disjunction XLIII; 8. Supposition XLIX; 9. Truth and falsity LI; 10. Affirmation. Negation. *Signum quantitatis* LV; 11. Modal propositions LIX; 12. Categorical syllogism LXIII; 13. Hypothetical syllogism LXVIII; 14. Argumentation. Kinds. *Locus differentia*. *Maxima propositio* LXXV; 15. Division. Kinds. Definition. Kinds LXXXV; 16 Abailard's position in twelfth century logic. Dialecticians and Anti-dialecticians. Nominalism and Realism. The question of the universals LXXXIX; Books and Articles referred to XCV-XCVII.

"Aristotle deals with the use of speech, Abailard says (*Log. Nostr. petit.*, 508, 32--509, 8), in his *Categories*, *De Interpretatione* and *Topics*, and with argumentations in his *Prior* and *Posterior Analytics* (1): Porphyry wrote an

introduction to the first-mentioned treatise. Thus, the scheme of his own *Dialectica* is obvious: he first treats of the parts of speech (*partes orationis*): *tractatus I*; next the categorical propositions and syllogisms are dealt with: *tractatus II*; the treatment of the hypothetical propositions and syllogisms (*tractatus IV*) is preceded by that of the topics (*tractatus III*); the author ends his work with a treatise on division and definition: *tractatus V*." p. XXV.

(1) Abailard's description of the Aristotelian treatises is not wholly correct.

10. ———. 1994. *Des Intellections*. Paris: Vrin.
Édition, traduction et commentaire par Patrick Morin.
Table des matières: Introduction 7; *P. Abelardi Tractatus de intellectibus* 24-96; Pierre Abélard. Le traité *Des Intellections* 25-97; La psychologie d'Abélard. Commentaire du *De Intellectibus* 99; Annexe A: Les affections d l'âme 128; Annexe B: Vie et œuvres d'Abélard 129; Orientation bibliographique 155; Index 161; Table de matières 169-170.
11. ———. 1933. "Un Opusculo Inedito Di Abelardo: *Glosae Super Librum Porphyrii Secundo Vocalem*." In *Testi Medioevali Inediti. Fontes Ambrosiani, Iii*, edited by Ottaviano, Carmelo, 107-207. Firenze: Olschki.
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13. ———. 1992. "Positio Vocum Sententiae." *Traditio* no. 47:66-73.
Appendix to Yukio Iwakuma, *Vocales, or Early Nominalists* (pp. 37-111).
14. ———. 1992. "Super Porphyrium." *Traditio* no. 47:74-100.

Second Appendix to Yukio Iwakuma, *Vocales, or Early Nominalists* (pp. 37-111).

15. Burnett, Charles, Luscombe, David E., and Barrow, Julia. 1984. "A Checklist of the Manuscripts Containing the Writings of Peter Abelard and Heloise and Other Works Closely Associated with Abelard and His School." *Revue d'Histoire des Textes* no. 14-15:183-302.

"This checklist has been compiled to take stock of what is presently known about the manuscripts of the works of Peter Abelard and to aid and stimulate further work in Abelardian studies. It also includes information about the writings of Heloise and about the manuscript sources for the study of her life. The manuscripts of the writings of some contemporaries who were closely concerned with Abelard, e. g. as correspondents, are added, together with manuscripts of writings by Abelard's closest disciples and followers.

The material is arranged as follows:

Part 1. The manuscripts p. 188

Appendix : Lost, unidentified or destroyed manuscripts p. 229

Part 2. The writings of Peter Abelard p. 240

Appendix : Lost or unidentified writings of Peter Abelard p. 256

Part 3. Unauthenticated or anonymous writings giving the teaching of Peter Abelard p. 259

Part 4. Writings which have from time to time been attributed to Peter Abelard, either in the manuscripts in which they occur or by later scholars p. 262

Part 5. Writings bearing directly on the doctrines of Peter Abelard, the lives of Abelard and Heloise and the Council of Sens p. 273

Part 6 a. Writings attributed to Heloise, or bearing on the early history of the Paraclete p. 283

Part 6 b . List of charters issued for the Abbey of the Paraclete before the death of Abbess Heloise p. 287

Part 7. Epitaphs of Abelard and Heloise p. 293

Index of works included in the checklist p. 298

The list is designed to provide guidance on the manuscripts for those engaged in editing writings by Abelard and by his associates and followers, as well as for those who wish to know how, when, where and by whom these manuscripts were copied and read. Several manuscripts are listed here which have not hitherto been used in editions or which have only recently come to light."

TRANSLATIONS OF THE LOGICAL WORKS

ENGLISH

1. Peter, Abelard. 1973. "The Glosses of Peter Abailard on Porphyry." In *Philosophy in the Middle Ages. The Christian, Islamic and Jewish Traditions*, edited by Hyman, Arthur and Walsh, James.J., 169-188. Indianapolis: Hackett. Second revised edition (first edition 1967). Reprinted from Richard McKeon (ed.), *Selections from Medieval Philosophers*, New York: Charles Scribner's Sons, 1929, Vol. I.
2. ———. 1994. "From the "Glosses on Porphyry" in His Logica 'Ingredientibus'." In *Five Texts on the Mediaeval Problem of Universals: Porphyry, Boethius, Abelard, Duns Scotus, Ockham*, edited by Spade, Paul Vincent, 26-56. Indianapolis: Hackett. Translation from the edition of Geyer 1919, 7.25-32.12.
3. ———. 1996. "Glosses on Porphyry from *Logica Ingredientibus*, "on Universals"." In *Readings in Medieval Philosophy*, edited by Schoedinger, Andrew, 529-538. New York: Oxford University Press.
4. ———. 1984. "Glosses in *Peri Hermeneias*." In *Aristotle's Theory of Language and Its Tradition. Texts from 500 to 1750*, edited by Arens, Hans, 231-302. Amsterdam: Benjamins.

Translation of pp. 307-371 of the edition Geyer 1927 (pp. 307-503): the Glosses on chapters 1-4 of the *Peri hermeneias*; with a commentary by Hans Arens pp. 303-338.

5. King, Peter. 1982. *Peter Abailard and the Problem of Universals in the Twelfth Century*, Princeton University. Peter Overton King Doctoral Dissertation in Philosophy, Princeton University, three volumes (available at ProQuest Dissertation Express).

Vol. 2 contains an Appendix with the the following translations:

a) Peter Abailard:

Logica "Ingredientibus" I.ii.1-156 (pp. 1*-28*) [Geyser 1933, pp. 7.25-32.12]

Logica Nostrorum Petitione Sociorum ii.1-94 (pp. 29*-51*) [Geyser 1933, pp. 512.6-533.]

Theologia Christiana Liber III.138-164 (pp. 55*-63*)

[Translated from the latin text edited by E. M. Buytaert in *Corpus Christianorum Continuatio Mediaevalis XII*, Turnhout, 1969]

Treatise on Understandings (complete) (pp. 64*-91*)

[Translated from the latin text edited by Lucia Urbani Ulivi in *La psicologia di Abelardo e il "Tractatus de intellectibus"* Edizioni di Storia e Letteratura, Roma, 1976, pp. 103-127]

Logica "Ingredientibus" III.i.1-14 (pp. 92*-95*) [Geyser 1933, pp. 307.1-309.35]

Logica "Ingredientibus" III.ii.1-49 (pp. 96*-103*) [Geyser 1933, pp. 312.33-318.35]

Logica "Ingredientibus" III.iv.1-43 (pp. 104*-110*) [Geyser 1933, pp. 325.12-331.11]

Logica "Ingredientibus" III, *On dicta propositionum* (pp. 111*-116*) [Geyser 1933, pp. 365.13-370.22]

b) Boethius:

Lesser Commentary on Porphyry 18D-22B (pp. 117*-121*)

[Translated from the latin text appearing in J. P. Migne, *Patrologia Latina*, LXIV (Paris 1847)]

Greater Commentary on Porphyry 82A-86A (pp. 122*-127*) [Translated from the latin text of the *aiora commentaria in Porphyrium* appearing in J. P. Migne, *Patrologia Latina*, LXIV (Paris 1847)]

c) Walter of Mortagne:

Tractatus "Quoniam de generali" (complete) (pp. 128*-142*) [Translated from the latin text edited by Hauréau in *Notices et extraits de quelque manuscrits latins de la Bibliothèque Nationale* Tom. V, Paris, 1892, pp. 298-320]

d) Pseudo-Joscelin:

On genera and species (On integral wholes) Text 143*-185* - Translation 186*-212*

6. Tweedale, Martin, and Bosley, Richard, eds. 2006. *Basic Issues in Medieval Philosophy. Selected Readings Presenting the Interactive Discourses among the Major Figures*. Peterborough: Broadview Press.
Second edition (First edition 1997).
Includes selections from Abelard on foreknowledge, universals, and ethics.

FRENCH

1. Pierre, Abélard. 1945. *œuvres Choisies D'Abélard*. Paris: Aubier.
Texts présentés et traduits par Maurice de Gandillac.
Logique (Première partie.) [From the *Logica Ingredientibus* pp. 77-127]; Éthique; Dialogue entre un philosophe, un juif et un chrétien.
2. ———. 1969. "La Première Critique Du Réalisme." In *Abélard Ou La Philosophie Dans Le Langage*, edited by Jolivet, Jules, 111-122. Paris: Seghers.

Related pages

[Medieval Latin Logic from Boethius to 1400 ca.](#)

[Medieval Theories of Supposition \(Reference\) and Mental Language](#) (with an annotated bibliography on the medieval theory of supposition)

[Annotated bibliography of L. M. de Rijk](#)

On the website "Bibliographia. Annotated bibliographies"

[Peter Abelard. Bibliography on His Theology and the Doctrine of the Trinity.](#)

[Peter Abelard. Bibliography on His Ethics and Moral Philosophy.](#)

On the website "Theory and History of Ontology"

[Annotated bibliography on the history of the Problem of Universals](#)



[History of Logic from Aristotle to Gödel](#)

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Selected Bibliography on Abelard's Logic and Ontology. First Part A - L

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Actes du Colloque de Neuchâtel 16-17 novembre 1979.
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2. "Peter Abelard." 2007. *American Catholic Philosophical Quarterly* no. 81:162-338.
Special Issue edited by Jeffrey E. Brower.
Contents: Jeffrey E. Brower: Editor's Introduction 162; Peter King: Abelard on Mental Language 169; Ian Wilks: Abelard on Context and Signification 189; Andrew Arlig: Abelard's Assault on Everyday Objects 209; John Marenbon: Abelard's Changing Thoughts on Sameness and Difference in Logic and Theology 229; Jeffrey Hause: Abelard on Degrees of Sinfulness 251; Sean Eisen Murphy: "The Law was Given for the Sake of Life": Peter Abelard on the Law of Moses 271; A.L. Griffioen: "In Accordance with the Law": Reconciling Divine and Civil Law in Abelard 307; Margaret Cameron: Abelard (and Heloise?) on Intention 323-338.

3. Arlig, Andrew W. 2005. *A Study in Early Medieval Mereology: Boethius, Abelard, and Pseudo-Joscelin*, Ohio State University.

Unpublished Ph.D. dissertation.

See Chapter 4. *Abelard's Mereology and Its Role in Metaphysics* pp. 141-242.

"The study of parts and wholes, or mereology, occupies two of the best philosophical minds of twelfth-century Europe, Abelard and Pseudo-Joscelin. But the contributions of Abelard and Pseudo-Joscelin cannot be adequately assessed until we come to terms with the mereological doctrines of the sixth century philosopher Boethius. Apart from providing the general mereological background for the period, Boethius influences Abelard and Pseudo-Joscelin in two crucial respects. First, Boethius all but omits mention of the classical Aristotelian concept of form. Second, Boethius repeatedly highlights a rule which says that if a part is removed, the whole is removed as well. Abelard makes many improvements upon Boethius. His theory of static identity accounts for the relations of sameness and difference that hold between a thing and its part. His theory of identity also provides a solution to the problem of material constitution. With respect to the problem of persistence, Abelard assimilates Boethius' rule and proposes that the loss of any part entails the annihilation of the whole. More precisely, Abelard thinks that the matter of things suffers annihilation upon the gain or loss of even one part. He also holds that many structured wholes, namely artifacts, are strictly dependent upon their parts. Yet Abelard insists that human beings survive a variety of mereological changes. Abelard is silent about objects which are neither artifacts nor persons. I argue that Abelard has the theoretical resources to provide an account of the persistence of these types of object, so long as some forms are ontologically robust. Pseudo-Joscelin rejects the thesis that the removal of any part entails the destruction of the

whole. The annihilation of a whole follows only from the removal of essential parts. Pseudo-Joscelin employs two basic principles in his theory of persistence. First, forms and the functions encoded in them play a primary role in identity and persistence. He also makes use of a genetic criterion. Pseudo-Joscelin expands both principles and employs them when he vigorously defends the thesis that a universal is a concrete whole composed of particulars from Abelard's criticisms."

4. ———. 2007. "Abelard's Assault on Everyday Objects." *American Catholic Philosophical Quarterly* no. 81:209-227. "Abelard repeatedly claims that no thing can survive the gain or loss of parts. I outline Abelard's reasons for holding this controversial position. First, a change of parts compromises the matter of the object. Secondly, a change in matter compromises the form of the object. Given that both elements of an object are compromised by any gain or loss of a part, the object itself is compromised by any such change. An object that appears to survive change is really a series of related, but non-identical, objects. I argue that, for Abelard, this series of objects is not itself an object. Finally, I examine an apparent exception to Abelard's claim that no thing can survive a gain or loss of parts, and I show that this specific case does not undermine his general thesis."
5. Astroh, Michael. 2001. "Petrus Abaelardus on Modalities *De Re* and *De Dicto*." In *Potentialität Und Possibilität. Modalaussagen in Der Geschichte Der Metaphysik*, edited by Buchheim, Thomas, Henri, Kneepkens Corneille and Lorenz, Kuno, 79-95. Stuttgart: Frommann-Holzboog. "The distinction between modalities *de re* and *de dicto* Abaelard discusses in his *Glossae super Peri hermeneias* (1) presents itself as a topic of traditional predication theory. The two varieties of alethic modality are bound to opposite forms of predication. In spite of their uniform linguistic appearance their basic structures are different. Modal propositions *de dicto* are semantically, not just

grammatically, impersonal whereas modal propositions de re are truly personal constructions.(2) Nevertheless Abaelard explains the meaning, scope and purpose of according modal operators in so uniform a manner that he can set forth rules of inference between modal propositions de re and their logical correspondents de dicto.

A systematic presentation of Abaelard's theory pertains to all constitutive features of predication. The grammatical, but even more so the semantical, impersonality or personality of a categorical proposition, its quality and if appropriate its quantity, and finally its temporality and existential presupposition -- each of these features predetermines the manner in which modalities de re or de dicto contribute to a proposition's meaning and validity. These basic aspects of Abaelard's account of predication do not obstruct his intuitive conception of alethic modality as determining either de re or de dicto a predicate's inherence or remotion.(3)" p. 79

(1) The text of the relevant treatise will be quoted according to its critical edition by Klaus Jacobi and Christian Strub: Petrus Abaelardus, *Glossae super Peri Hermeneias*, Turnhout: Brepols (Corpus Christianorum. Continuatio mediaevalis), forthcoming. As this new edition presents the text with reference to the edition by L. Minio-Paluello: *Twelfth Century Logic. Texts and Studies. Vol. 2: Abaelardiana Inedita, 1. Glosse Magistri Petri Abaelardi super Periermeneias* Rome 1958, quotations will refer to the latter one (abbreviated with: G).

(2) For Abaelard's account of semantical impersonality cf. Klaus Jacobi, "Diskussionen über unpersonliche Aussagen in Peter Abaelards Kommentar zu Peri Hermeneias", in: E. P. Bos (ed.), *Mediaeval Semantics and Metaphysics. Studies dedicated to L. M. De Rijk on the occasion of his 60th Birthday*, Nijmegen 1985, 1-63.

(3) The usage of this distinction draws on Abaelard's terminology in *Dialectica*, cf. for example 191,6. The text of

Dialectica is quoted with reference to the De Rijk edition: Petrus Abaelardus, *Dialectica*, ed. L. M. de Rijk, Assen 1970 (abbreviated with: D).

6. Ballanti, Graziella. 1995. *Pietro Abelardo. La Rinascita Scolastica Del 12. Secolo*. Firenze: La Nuova Italia.
7. Beonio Brocchieri Fumagalli, Maria Teresa. 1970. *The Logic of Abelard*. Dordrecht: Kluwer.

Translated from the Italian: *La logica di Abelardo*, Firenze, La Nuova Italia, 1964 (second edition with a new foreword 1969) by Simon Pleasance.

Contents: Premise V; Foreword to the Second Edition VII; Introduction 1; I. What Abelard Means by Logic 13; II. The Problem of Meaning 28; III. The Meaning of Universal Nouns 42; IV. The Meaning of the Proposition 71; V. The 'Argumentatio' 80; Appendix: *Abaelardiana Inedita* 90; Bibliography 100; Index of Names 101.

"The purely 'philosophical' importance of logical Abelardian research has been emphasized by Mario Dal Pra in his introduction to the edition of the *Glosse Letterali*. In this volume it seems important in my eyes to illustrate not only the interest of Abelardian dialectic techniques (which are at times penetrated by positions which are still realistic), but also, and above all, the importance of his total attitude towards the 'scientia scientiarum', stated in advance by a freer and braver mentality that is later to use this instrument for its rigorous definition of philosophical research.

When studying Abelardian dialectic I have preferred to follow the line of development of his inquiry, from meaning to syllogistic calculation. This line does not, however, coincide perfectly with the expositive progress of the various commentaries, from the *Isagoge* to the Boetian texts; the trail has thus been marked out for me by some of the Palatine Master's statements rather than by the order of the comments.

The perspective of this research is, generally speaking, given from the viewpoint of contemporary formal logic, a viewpoint that is nevertheless implicit, even, I think, if it is at work in inquiry. In fact, in an attempt to have a clearer picture of the historical importance of the author and his meaning in a dialogue which is mediaeval, I have tried, as far as possible, to keep the language constantly in the tone of those times, and I have tried to avoid certain equations - unprecise and sterile in my opinion - between Abelardian logical formulae and contemporary logical formulae. I hope that what will be of interest from a modern viewpoint is Abelard's total attitude." (Premise, p. V).

8. ———. 1974. *Introduzione a Abelardo*. Bari: Laterza. Second revised and updated edition 1988; translated in English as *The Logic of Abelard*.
9. ———. 1974. "La Relation Entre Logique, Physique Et Théologie." In *Peter Abelard. Proceedings of the International Conference: Louvain, May 10-12, 1971*, edited by Buytaert, Éloi Marie, 153-163. Leuven: Leuven University Press.
10. ———. 1979. "Sull'unità Dell'opera Abelardiana." *Rivista Critica di Storia della Filosofia* no. 34:429-438.
11. Bertelloni, Francisco. 1986. "Pars Destruens. Las Críticas De Abelardo Al Realismo En La Primera Parte De La Lógica 'Ingredientibus'." *Patristica et Mediaevalia* no. 7:49-64. "This paper analyzes the first part of the "Logica ingredientibus" of Peter Abelard. First the author intends to show the triple structure of his philosophical method (exposition, critique, and resolution). Secondly he expounds the critical part of this structure. Thirdly an attempt is made to outline the antirealist arguments of Abelard."
12. ———. 1987. "Pars Construens. La Solución De Abelardo Al Problema Del Universal En La Primera Parte De La Lógica 'Ingredientibus' (1ª Part)." *Patristica et Mediaevalia* no. 8:39-60.

13. ———. 1988. "Pars Construens. La Solución De Abelardo Al Problema Del Universal En La Primera Parte De La Logica 'Ingredientibus' (2* Part)." *Patristica et Mediaevalia* no. 9:3-25.
14. Bertola, Ermenegildo. 1960. "Le Critiche Di Abelardo Ad Anselmo Di Laon Ed a Guglielmo Di Champeaux." *Rivista di Filosofia Neoscolastica* no. 52:485-522.
15. Biard, Joël. 2003. "Logique Et Psychologie Dans Le *De Intellectibus* D'Abélard." In *Pierre Abélard. Colloque International De Nantes*, edited by Jolivet, Jean and Habrias, Henri, 309-320. Rennes: Presses Universitaires de Rennes.
16. Bird, Otto. 1960. "The Logical Interest of the *Topics* as Seen in Abelard." *Modern Schoolman* no. 37:53-57.
17. Blackwell, Daniel F. 1988. *Non-Ontological Constructs. The Effects of Abaelard's Logical and Ethical Theories on His Ttheology. A Study in Meaning and Verification*. Bern: Peter Lang.
18. Boler, John F. 1963. "Abailard and the Problem of Universals." *Journal of the History of Philosophy* no. 1:37-52.
19. Brower, Jeffrey E. 1996. *Medieval Theories of Relations before Aquinas: 'Categories' Commentaries, A.D. 510--1250 (Aristotle, Boethius, Peter Abelard, Saint Albertus Magnus)*, University of Iowa.
Unpublished Ph.D. dissertation available at ProQuest Dissertation Express.
20. ———. 1998. "Abelard's Theory of Relations: Reductionism and the Aristotelian Tradition." *Review of Metaphysics* no. 51:605-631.
"In what follows I focus on the work of Peter Abelard (1079-1142), an influential medieval logician who developed his theory of relations in the course of commenting on *Categories* 7.(4) Like other Aristotelians, Abelard accepts the view that relations are reducible to the monadic properties of related things. On his theory, however, the relation between Simmias and Socrates is not to be

explained by a set of peculiar monadic properties--say, being-taller-than-Socrates and being-shorter-than-Simmias. Rather it is to be explained by a pair of ordinary heights--say, being-six-feet-tall in the case of Simmias and being-five-feet-ten in the case of Socrates. Indeed, according to Abelard, the relation between Simmias and Socrates is nothing over and above the possession by these individuals of their respective heights.

Although Abelard commits himself to a form of reductionism about relations, we shall see that his theory is perfectly compatible with the advances made by twentieth-century logicians. Abelard is careful to distinguish questions about ontology from questions about logic, and to commit himself to reducing relations only at the level of ontology. Thus, he argues that Simmias's being taller than Socrates is nothing but Simmias, Socrates, and their respective heights. Nonetheless, he denies that relational statements of the form "Simmias is taller than Socrates" can be reduced to complex non-relational statements of the form "Simmias is six-feet-tall and Socrates is five-feet-ten."

The rest of the paper is divided into three parts. As will emerge, there is an important distinction to be drawn between Abelard's theory of relations and his account of relatives. In the first part of the paper (sections I-II), I present and explain the account of relatives. Here I focus on one of Abelard's most important logical works, his *Logica 'ingredientibus'*, but since the relevant portion of this work follows the subject matter and arrangement of *Categories* 7, I begin with a brief sketch of Aristotle's text. In the second part of the paper (sections III-V), I indicate what Abelard's account of relatives tells us about his own theory of relations. Although, this requires some reconstruction on my part, it is possible to determine with some accuracy to what sort of theory he committed himself. In the third and final part of the paper (sections VI-VII), I turn to the defense of Abelard's theory. My purpose in this last part is

to begin the project of rehabilitating a much denigrated tradition in the history of philosophy." pp.605-606.

21. Brower, Jeffrey E., and Guilfooy, Kevin, eds. 2004. *The Cambridge Companion to Abelard*. Cambridge: Cambridge University Press.

Contents: List of contributors XI; Method of citation and abbreviations XIV; Acknowledgments XVII; Chronology XVIII; Jeffrey E. Brower and Kevin Guilfooy: Introduction 1; 1. John Marenbon: Life, milieu, and intellectual contexts 13; 2. Winthrop Wetherbee: Literary works 45; 3. Peter King: Metaphysics 65; 4. Klaus Jacobi: Philosophy of language 126; 5. Christopher J. Martin: Logic 158; 6. Kevin Guilfooy: Mind and cognition 200; 7. Jeffrey E. Brower: Trinity 223; 8. Thomas Williams: Sin, grace and redemption 258; 9. William E. Mann: Ethics 279; 10. Yukio Iwakuma: Influence 305; List of Abelard's writings 336; Bibliography 341; Index 357-362.

22. Brumberg-Chaumont, Julie. 2007. "Sémantiques Du Nom Propre: Sources Anciennes Et Discussions Médiévales À L'époque D'Abélard." *Histoire Épistémologie Langage* no. 29:137-166.

"La question de la signification des noms propres joue un rôle de révélateur dans l'analyse médiévale du problème des universaux et de l'individuation. À la jonction de la grammaire et de la logique, elle hérite des Institutions de Priscien et des commentaires sur l'Organon de Boèce un ensemble d'éléments doctrinaux, plus ou moins convergents ou contradictoires, à partir desquels elle construit une sémantique originale, qui culmine avec l'oeuvre d'Abélard. Cette approche inédite, fondée sur une réélaboration des relations entre substance, qualité, signification et nomination pose essentiellement la question du rôle de la qualité particulière, souvent appelée « platonitas » et pensée comme une collection d'accident, dans la signification des noms propres de substances individuelles."

23. ———. 2008. "Le Problème Du Substrat Des Accidents Constitutifs Dans Les Commentaires a L' *Isagoge* D'Abélard Et Du Pseudo-Raban (P3)." In *Compléments De Substance. Études Sur Les Propriétés Accidentelles Offertes À Alain De Libera*, edited by Erismann, Christophe and Schniewind, Alexandrine, 67-84. Paris: Vrin.
Comme l'a souligné A. de Libera (*L'Art des généralités*, Paris, Aubier 1999, p. 319-329), Abélard critique dans les *Gloses sur Porphyre* la théorie de l'essence matérielle (notée TEM) en soulignant son incapacité à répondre à la question du sujet d'inhérence des propriétés constitutives, qu'il s'agisse de l'espèce (et donc, des différences spécifiques) ou des individus (et donc, des accidents individuels). Un autre commentaire à *l'Isagoge*, souvent associé à la TEM et attribué au Pseudo-Raban (*alias* P3), tente de répondre à cette double difficulté. Nous proposons d'étudier les solutions que ce texte tente d'apporter, car elles permettent, selon nous, de mieux comprendre la réfutation d'Abélard, et de prendre la mesure de la pertinence de ses attaques." (p. 67)
24. Buytaert, Éloi Marie, ed. 1974. *Peter Abelard. Proceedings of the International Conference: Louvain, May 10-12, 1971*. Leuven: University Press.
Contents: Preface VII Programme VIII; List of members XI-XIV; G. Verbeke: Introductory Conference: Peter Abelard and the Concept of Subjectivity 1; L. Engels: Abélard écrivain 12; T. Gregory: Abélard et Platon 38; D. E. Luscombe: The *Ethics* of Abelard: Some Further Considerations 65; M. Kurdzialek: Beurteilung der Philosophie im "Dialogus inter Philosophum, Iudaeum et Christianum" 85; R. Thomas: Die meditative Dialektik im "Dialogus inter Philosophum, Iudaeum et Christianum" 99; R. Peppermüller: Exegetische Traditionen and theologische Neuansätze in Abaelards Kommentar zum Römerbrief 116; E. M. Buytaert: Abelard's Trinitarian Doctrine 127; M. T. Beonio-Brocchieri Fumagalli: La relation entre logique,

physique et théologie 153; J. Jolivet: Comparaison des théories du langage chez Abélard et chez les Nominalistes du XIVe siècle 163; Index Auctorum 179-181.

25. Calefato, Patrizia. 2006. "Dimensione Semantica E Problema Della Comunicazione in Pietro Abelardo." In *Linguistica Medievale. Anselmo D'Aosta, Abelardo, Tommaso D'Aquino, Pietro Ispano, Gentile Da Congoli, Occam*, edited by Corvino, Francesco, 13-53. Bari: Adriatica.
26. Castello Dubra, Julio A. 2004. "Ontología Y Gnoseología En La Logica Ingredientibus De Pedro Abelardo." *Anales del Seminario de Historia de la Filosofía* no. 43:43-50.
"The paper deals with the section of Peter Abaelard's *Glossae super Porphyrium* concerning the three questions about the universals. The *pars destruens*, in which Abaelard criticizes the realistic doctrines of William of Champeaux, does not have a merely negative function, but it tries to reach the starting-point of Abaelard's own position, namely, that things differ not only in their forms or accidents, but *also* in their matters or essences. When he speaks of the image of the universal term, he does not explain the process of the elaboration of the universal concept starting from the thing, but he rather refers to the intellectual signification of terms, in so far as they "produce intellections". This default could be explained because of the fact that, in Abaelard's view, the human intelligence hardly ever or never grasps the essences of things."
27. Clanchy, Michael T. 2008. *Abelard. A Medieval Life*. Malden: Blackwell.
Contents: Preface XI; Map of France in Abelard's time XIV; Map of Paris in Abelard's time XVI; 1. The Story of Abelard 1; Part I. *Scientia* - 'Knowledge'. Chronological table 1079-1117 24; 2. *Scientia* - 'Knowledge' 25; 3. Literate 41; 4 Master 65; 5. Logician 95; Part II. *Experimentum* - 'Experience'. Chronological table 1117-1118 120; 6. *Experimentum* - 'Experience' 121; 7. Knight 130; 8. Lover 149; 9. Man 173; Part III. *Religio* - 'Religion'. Chronological table 1118-1142

204; 10. *Religio* - 'Religion' 207; 11. Monk 220; 12. Theologian 264; 13. Heretic 288; 14. Himself 326; Who's Who 336; Abbreviations Used in the Notes 336; Notes 345; Suggestions for Further Reading 396; Index 399-416. On the logic see in particular Part I: *Scientia* - 'Knowledge' pp. 24-118.

"The Structure of This Book.

This book discusses Abelard's roles one by one in successive chapters ('Literate', 'Master', 'Logician', and so on) in order to build up a composite portrait of him. The sequence of chapters accords very roughly with the chronology of Abelard's life: from his precocious success in the schools (chapters 3-5), through his affair with Heloise (chapters 8-9), to his controversial career as a monk and theologian (chapters 11-13). Two chapters are devoted to his affair with Heloise because this was the turning point of his life, even though the events it comprised were concentrated in not much more than a single year (1117 or 1118). The concluding chapter (14), entitled 'Himself', centres on the Delphic subtitle he chose for his book on ethics: 'Know Thyself'.

Overarching the fourteen chapters are the three parts, with their Latin titles, into which the book is divided: *Scientia* ('knowledge' or 'science'), *Experimentum* ('experience' or 'experiment') and *Religio* ('religion' or 'monasticism'). These three parts characterize Abelard's successive approaches to life and they function at the same time as an introduction to medieval culture in the period of the twelfth-century Renaissance. In Part I, Abelard expounds the 'science' which the Middle Ages had inherited from classical antiquity. In his native Loire valley he had begun his road to knowledge as a 'Literate' (chapter 3), that is, as a *litteratus* and Latinist; then in Paris he had been acknowledged as a 'Master' (chapter 4) of students. He 'who alone knew whatever was known' was a 'master' also in the sense of *magus*. His wisdom and magic comprehended all the knowledge of the

ancient Greeks in philosophy and logic (chapter 5), the queen of the sciences.

Contrasting with this theoretical and scholastic knowledge is *Experimentum* (Part II): learning not from books, but from experiencing life in the raw. Theory and fact, reflection and action, contrast - and often conflict - in Abelard's life, as they do in medieval culture as a whole. In his book on ethics, he had argued that actions in themselves are indifferent; only the intention of the actor makes them right or wrong. Abelard 'experimented' with sex and violence. He compared himself to a knight (chapter 7), conducting feuds and mock battles in the schools, and then suddenly he found himself up against Fulbert and Heloise's other kinsmen in a real feud. In castrating Abelard, they took no account of his good intentions, but only of his action in putting Heloise into a convent. Because the Church put such value on celibacy, Abelard's castration had the peculiar effect of converting him to 'religion' (Part III), in the sense that it made him become a monk. Such was the attraction of monasticism in the twelfth century that the adjective *religiosus* (chapter 10) was synonymous with 'monastic', as if there was no religion outside the cloister. Abelard made repeated efforts to be a good monk (chapter 1), but he never could reconcile the exclusiveness of monasticism with his broad vision of theology (chapter 12), in which good pagans worshipped the true God and acknowledged the Trinity. He was not only a failed 'religious', St Bernard taunted, he was .1 blasphemer and a heretic (chapter 13).

(...)

Abelard's writings fill a whole volume (no. 178) of Migne's *Patrologiae:Series Latina* comprising about 800,000 words. His *Theologia* in its various versions (Abelard kept revising it over the decades 1120-40) contains more than 200,000 words; *Sic et Non* has 130,000, his sermons 115,000, the commentary on St Paul's Epistle to the Romans 90,000; for Heloise he wrote another 70,000 words.

Migne's volume does not include Abelard's writings on logic: one big book, *Dialectica*, survives (though it is not complete) in addition to other commentaries and lectures. It is certain that some works have been lost, like the commentary on the Prophet Ezechiel which Abelard says he wrote in Paris and the love songs which he reminded Heloise were still being sung in the 1130s. As his surviving writings amount to about 1 million words, his total output must have considerably exceeded that." (pp. 19-22).

28. Colish, Marcia L. 1992. "Peter Lombard and Abelard: The *Opinio Nominalium* and Divine Transcendence." *Vivarium* no. 30:139-156.

Reprinted as essay VI in: M. L. Colish - *Studies in Scholasticism* - Aldershot, Ashgate, 2006.

"This paper supports the claim that what "nominalism" meant to twelfth-century thinkers was the doctrine of the univocal signification of nouns and verbs, with their oblique or tensed forms conveying consignification of the things or actions they signify in the nominative case or present tense, respectively. The paper shows that both Peter Abelard and Peter Lombard called upon this doctrine in their argument over whether God can do better than He does, indicating that nominalism so defined has a perceived utility for exponents of differing logical and theological persuasions at the time."

"With respect to the Lombard's contribution to the history of nominalism in the twelfth century, then, we may offer three conclusions. First, from our consideration of Abelard's case, it is clear that the *opinio Nominalium* could be, and was, yoked to a post-Aristotelian kind of logic. From our consideration of the Lombard's case, it is equally clear that the *opinio Nominalium* could just as easily be yoked to a mode of reasoning deemed capable of yielding cogent ontological conclusions. In this respect, the fact that a twelfth-century thinker espouses the *opinio Nominalium* does not mean that he is automatically or necessarily

required to embrace one rather than the other of these different conceptions of logic. Second, it was not just the fact that the Lombard was a theologian but his particular agenda as a theologian who sought to affirm God's omnipotence and God's essence as the transcendent metaphysical reality that accounts for both his borrowings from Abelard and his more fundamental hostility to Abelard in this area. And, finally, thanks to the rapid and enduring success of the Lombard's *Sentences* as a textbook, he was able to place both his position on divine transcendence, the distinction between God's absolute and ordained power, and the *opinio Nominalium* with which he bolstered these teachings squarely before the eyes of his scholastic contemporaries and successors." (pp. 155-156.)

29. Courtenay, William J. 1991. "Nominales and Nominalism in the Twelfth Century." In *Lectionum Varietates. Hommage À Paul Vignaux*, edited by Jolivet, Jean, Kaluza, Zénon and Libera, Alain de, 11-48. Paris: Vrin.
Reprinted as Chapter Four in: W. J. Courtenay, *Ockham and Ockhamism. Studies in the Dissemination and Impact of His Thought*, Leiden, Brill, 2008, pp.39-80 .
30. Cranz, Edward F. 2006. "Boethius and Abelard." In *Reorientations of Western Thought from Antiquity to the Renaissance*, edited by Struever, Nancy. Aldershot: Ashgate. Essay V (20 pages).

"Let me conclude with two brief general addenda. First, I have tried to outline the main development of Abelard's logic and the one most dependent upon Boethius. What we have seen may be summarized by saying that, where Boethius closely connects, sometimes even identifies, intellections, universals and propositions with '*res*' or beings, Abelard shifts all these relationships to a new context and then denies them all: intellections, universals and propositions are not '*res*' as physical things. To repeat a phrase; he desubstantializes them all.

But Abelard never stops thinking. Sometimes his conclusions are more new questions than new answers, and his second treatment of a problem is sometimes very different from his first. Some scholars have described the last stage of his thought as a 'return to Platonism': but I think he is more creative and original. He has changed Boethius' res into 'physical things,' and he has denied that intellections or meanings were 'physical things' and turned them into 'nothings.' But there are hints, and there is no time to analyze them here, that at the end he began to move to another new solution in which meanings from having been nothings turn into the ultimate realities. If I had to suggest parallels to his last stage, Petrarch, Lorenzo Valla and Nicholas of Cusa come to mind. So if I have tried to describe Abelard's transformation of Boethius, what was left, and I don't believe it was ever completed, might be called Abelard's transformation of Abelard.

Second, while Abelard's writings had no wide dispersion and while he was not followed by any school or even by very many pupils, I believe his diffuse influence was greater than one might expect. The reorientations of thought one finds in his logic and elsewhere often spread more widely in his own time than did his specific ideas; they were not destroyed by the reception of Aristotle and in some ways provided a context within which Aristotle was received. So in concluding I cannot resist noting that, while I have characterized what happened as a transformation of Boethius, let us not in this group forget that it was a transformation of Boethius."

31. Dal Pra, Mario. 1979. "Sul Nominalismo Di Abelardo." *Rivista Critica di Storia della Filosofia* no. 34:439-451.
32. Dambaska, Izydora. 1977. "La Sémiotique Des *Dictiones Indefinitae* Dans La Dialectique D'Abélard." *Cahiers de l'Institut du Moyen Age Grec et Latin* no. 21:10-20.
33. D'Anna, Gabriella. 1969. "Abelardo E Cicerone." *Studi Medievali* no. 10:333-419.

- Sono esaminate tutte le citazioni dirette (pp. 335-357) ed indirette (pp. 357-366) di Cicero nelle opere di Abelardo.
34. Decorte, Jos. 1999. "'Sed Quoniam Platonis Scripta Nondum Cognovit Latinitas Nostra...': Que Faire En L'absence D'une Traduction?" In *Tradition Et Traduction. Les Textes Philosophiques Et Scientifiques Grecs Au Moyen Age Latin. Hommage a Fernand Bossier*, edited by Beyers, Rita, Brams, Jozef, Sacré, Dirk and Verrycken, Koenraad, 69-87. Leuven: Leuven University Press.
 35. Eco, Umberto. 1984. "Signification and Denotation from Boethius to Ockham." *Franciscan Studies* no. 44:1-29.
 36. Fredborg, Karin Margareta. 2003. "Abelard on Rhetoric." In *Rhetoric and Renewal in the Latin West 1100-1540. Essays in Honour of John O. Ward*, edited by Mews, Constant J., Nederman, Cary J. and Thomson, Rodney M., 55-80. Turnhout: Brepols.
Contains in Appendix the edition of Abelard's *Super Topica glossae* (pp. 62-80).
 37. Freddoso, Alfred J. 1978. "Abailard on Collective Realism." *Journal of Philosophy* no. 75:527-538.
"In the 'Logica ingredientibus' Abailard attacks the theory according to which universals are collections of individuals. I argue that Abailard's principal objection to this 'collective realism', viz, that it conflates universals with integral wholes, is actually quite strong, though it is generally overlooked by recent commentators. For implicit in this objection is the claim that the collective realist cannot provide a satisfactory account of predication. The reason for this is that integral wholes are not uniquely decomposable. In support of my thesis I first explicate the medieval distinction between integral and subjective parts and then discuss its application to collective realism."
 38. Gasper, Giles E.M., and Helmut, Kohlenberger, eds. 2006. *Anselm and Abelard. Investigations and Juxtapositions*. Toronto: Pontifical Institute of Mediaeval Studies.
On the philosophy of Abelard see: Tetsuro Shimizu: Word and *Esse* in Anselm and Abelard 179-195.

39. Gill, Harjeet Singh. 1989. "The Abelardian Semiotics." In *Abelardian Semiotics and Other Essays*, 1-29. New Dehli: Bahri Publications.

"The linguistic theory of Abelard is centred around the correlation or correspondence between the "word" and the "thing" or the *signifiant* and the *signifié* as we would have them today. According to Abelard, if a word or a sound signifies, it is because something is added to its physical being. *essentia*; this something is the significative function, *officium significandi*. The sound, just like the thing that it represents in a give language, remains the same from one community of speakers to another, it belongs to the sphere of things, which is natural; the significance, on the other hand, changes due to the diversity of languages, it depends upon institution, upon a human convention, *positio hominum, voluntas hominum*.(1) We have already the distinction between the sphere of significance and the sphere of things. The sound or the physically pronounced utterance is of the order of nature while significance is created when "something" is added to its being, and, this "something" is due to human intervention in a human, social institution. For Abelard, words give birth to or "generate" intellection which then correspond to things. Thus, argues Abelard, there is a double series of correspondence between words and intellections, and between intellections and things, and consequently, between words and things. These are three distinct but related spheres.(2)" (pp. 4-5).

(1) *Glossae super Peri Ermenias*, 320, 12, 27, ed. B. Geyer, Munster i.w. 1919-23.

(2) *Glossae super Propyrium III*, 524, 3-10, ed. B. Geyer, Munster, i.w. 1919-23.

40. ———. 1999. "The Abelardian Tradition of Semiotics." In *Signs and Signification. Vol. I*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 35-67. New Delhi: Bahri Publications.

41. Gombocz, Wolfgang L. 1980. "Abaelards Bedeutungslehre Als Schlüssel Zum Universalienproblem." In *Petrus Abaelardus, 1079-1142. Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 153-164. Trier: Paulinus-Verlag. Conference at the Trierer Theologischen Fakultät in Trier (18 April 1979).
42. Guilfooy, Kevin. 1999. *Abelard's Theory of the Proposition*, University of Washington. Unpublished Ph.D. dissertation available at ProQuest Dissertation Express.
43. ———. 2002. "Abelard's Rejection of the Tarski Biconditional." *Logical Analysis and History of Philosophy* no. 5:143-158.

"In a fairly opaque passage in his commentary on Aristotle's Categories Peter Abelard denies both directions of a biconditional sentence very much like a Tarski biconditional: "A man exists" is true iff a man exists. "A man exists" is taken to be a sentence token and the right hand element is taken to be the existence of a man. Neither Abelard's argument nor his reason for making the argument is clear. It at first appears that Abelard may be claiming that each of the corresponding conditionals is false. Such a claim could amount to a rejection of the correspondence theory of truth and would naturally have serious repercussions for the study of Abelard's logic. In this paper I argue that Abelard does not deny the truth of the biconditional only its necessity. Abelard makes this argument in response to Boethius and certain twelfth-century masters (I suggest Thierry of Chartres), who argue that there is a logically necessary connection between words and things, and hence between sentence tokens and what is the case in the world. Abelard is not expressing any serious reservations about the correspondence theory of truth. He is demonstrating the logical importance of the conventionality of language. Arguing against authorities, and twelfth-century peers, he shows that there is no logically necessary connection

between words and things, hence the Tarski biconditional is not necessarily true."

44. ———. 2004. "Peter Abelard's Two Theories of the Proposition." In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 35-57. Firenze: Leo S. Olschki Editore.
Acts of the 14th European Symposium on Medieval Logic and Semantics - Rome, June 11-15, 2002
45. ———. 2006. "Imagination and Cognition of Insensibles in Peter Abelard." In *Intellect Et Imagination Dans La Philosophie Médiévale / Intellect and Imagination in Medieval Philosophy / Intellecto E Imaginação Na Filosofia Medieval / Actes Du Xie Congrès International De Philosophie Médiévale De La Société Internationale Pour L'étude De La Philosophie Médiévale (S.I.E.P.M.)*,: Porto, Du 26 Au 31 Août 2002, edited by Pacheco, Maria Cândida and Meirinhos, José F., 895-902. Turnhout: Brepols.
46. Häring, Nikolaus M. 1975. "Abelard Yesterday and Today." In *Pierre Abélard - Pierre Le Vénérable. Les Courants Philosophiques, Littéraires Et Artistiques En Occident Au Milieu Du XII Siècle*, edited by Jolivet, Jean and Louis, René, 341-403. Paris: Éditions du Centre national de la recherche scientifique.
47. Hellemans, Babette. 2010. "The 'Whole Abelard' and the Availability of Language." In *How the West Was Won. Essays on Literary Imagination, the Canon and the Christian Middle Ages for Burcht Pranger*, edited by Otten, Willemien, Vanderjagt, Arjo and de Vries, Hent, 349-376. Leiden: Brill.
48. Henry, Desmond Paul. 1985. "Abelard's Mereological Terminology." In *Mediaeval Semantics and Metaphysics. Studies Dedicated to L. M. De Rijk, Ph.D., Professor of Ancient and Mediaeval Philosophy at the University of Leiden on the Occasion of His 60th Birthday*, edited by Bos, Egbert P., 65-92. Nijmegen: Ingenium Publishers.
49. ———. 1990. "Master Peter's Mereology." In *De Ortu Grammaticae. Studies in Medieval Grammar and Linguistic Theory in Memory of Jan Pinborg*, edited by

Bursill-Hall, Geoffrey L., Ebbesen, Sten and Konrad, Koerner, 99-115. Amsterdam: John Benjamin.

50. ———. 1991. *Medieval Mereology*. Philadelphia: Grüner.
"Mereology is the theory which deals with parts and wholes in the concrete sense, and this study follows its varied fortunes during the Middle Ages. Preliminary indications as to its metaphysical situation are followed by a brief sketch of Boethius' contribution. Peter Abelard, Gilbert of Poitiers, Clarembald of Arras, and Joscelin of Soissons are among the twelfth-century authors examined. The effect of the subsequent recovery of Aristotle's *Metaphysica* on mereology is typified by sketches of the many and varied uses made of the latter by Aquinas. A brief sample of Buridanian treatment is followed by an account of those applications made under the umbrella of thirteenth-century comment on Aristotle's *De Sophisticis Elenchis*. The curiously original theories of Wyclif are brought to light, as also samples from Walter Burleigh, Nicholas of Paris, William of Ockham, and Paul of Venice."
51. ———. 1991. "Abelard and Medieval Mereology." In *Peter Geach: Philosophical Encounters*, edited by A., Lewis Harry, 49-64. Dordrecht: Kluwer.
"It is a pity that the stock story of early medieval thought tends to concentrate on something called the 'universals controversy' and does so in a way which inappropriately subsumes the twists and turns of a highly complex situation under somewhat ill-fitting headings. Although a start has now been made on a saner account of the matter both in general (1) and insofar as it affects Abelard, (2) nevertheless the usual connotations of a term such as 'realism' when applied to the topic of universals render somewhat startling the realisation that one such theory attacked by Abelard was the polar opposite of any otherworldly Platonic-style theory, namely the '*collectio*' theory. It is yet a greater pity that in his attack on this theory (3) Abelard by no means does justice either to it or to his own wide-ranging account of

part/ whole relations. At the time of his attack his maturer thoughts (in the *Dialectica*) were still to come, yet some of the essentials of that later work are already to be found in his gloss on Boethius' *De Divisione*, a gloss dated as belonging to the end of his first teaching phase. (4)
In II below is presented a brief and inadequate characterisation of some of Abelard's theories and themes; in III these are applied to contemporary discussions which have a bearing on his own sad fate and on that of a certain cat to whom we have been genially introduced by Professor Geach."

(1) E.g. De Rijk, *Logica Modernorum* (3 volumes), Van Gorcum, Assen, 1962-7; Kretzmann Article on "Semantics, History of", in Paul Edwards (ed.), *The Encyclopedia of Philosophy*, New York, Macmillan, 1967, vol. 7, pp. 358-406, the *Cambridge History of Later Medieval Philosophy* and various of the *Cahiers de l'Institut du Moyen-age Grec et Latin* of the University of Copenhagen.

(2) Tweedale *Abailard on Universals*, Amsterdam, North-Holland, 1976.

(3) Geyer, *Abelard's Logica 'Ingredientibus'* Munster, 1919.

(4) Dal Pra, *Pietro Abelardo: Scritti di Logica*, Firenze, La Nuova Italia, 1969, p XXVII: 'fin dal primo periodo del suo insegnamento' [from the first period of his teaching].

52. ———. 1999. "Signification, Superfluity, and Indeterminacy in Abelard and Other Medievals." In *Signs and Signification. Vol. I*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 69-83. New Delhi: Bahri Publications.

"1.1. For Boethius and the medievals, signification is primarily linked with *definition* and *understanding* (intellectus). Abelard maintains these links as also does Aquinas, for example.

1.2. *Definition* canonically so-called is of nominal terms and is effectuated by means of genus, species, and differentia, at least where substance-names are concerned. Paronyms, or denominative names, involve incompletenesses which both

Anselm of Canterbury and Abelard characterise most competently according to frameworks other than the strictly canonical. Non-canonical characterisations in general were said to be *descriptions*. The process of definition *stricto sensu* would accordingly comprise or entail sentences such as 'Man is a species', 'Animal is a genus', and so on. It was in his commentary on Aristotle's *Categoriae* that Boethius noted how such sentences embodied the threat of fallacious arguments such as the following: 'Man is a species; but Socrates is a man; therefore Socrates is a species'. One solution, he suggested, would be to reconstrue the 'species' of 'Man is a species' as one of the *names of names* (*nominum nomina*), the named name being in his case 'man'. Thus the middle term of the inference becomes ambiguous, and the illation fails. At the same time, we witness the foundation of the description 'nominalism' upon this intra-linguistic analysis of propositions such as the one now in question, which superficially concern the 'universal' *man*, and so forth. (Ockham and Hobbes are two thinkers often characterised as nominalists, and who quite consciously and overtly preserve this *nominum nomina* terminology, in the same sort of context).

1.3. But although definition in the strict medieval sense thus appears to be of isolated terms, taken out of context, in practice contextual presuppositions did intervene, and this in various ways. It became common to work on the *significatio* of whole propositions, thus directing attention to the sense or *significatio* of the whole within which the defined terms were embedded. The propositions, in their turn, were taken to occur within at least three generally specifiable non-exclusive anticipated contexts, namely either that of the theoretical (or 'quidditative'), wherein definitional propositions are basic, or within that of the syllogistic (largely, the four canonical A, E, I, and O forms) or within that of *usus loquendi*, the context of usage, whence the classical grammarians took their starting point, and

which was recognised by medieval investigators of *significatio* as an area distinguishable (because of its contingent irregularities) from that of special technical usages. This latter distinction is already highly marked in the work of St. Anselm (1033 - 1109). These possible varieties of presupposed context will be taken account of in my own remarks, and attention called to them when the occasion arises." pp. 69-70 (notes omitted).

53. Hochberg, Herbert. 2009. "Facts and Things." In *State of Affairs*, edited by Reicher, Maria, 83-110. Frankfurt: Ontos Verlag.
54. Iwakuma, Yukio. 1992. "Vocales, or Early Nominalists." *Traditio* no. 47:37-111.
Appendix (pp. 65-133): Edition of Vocalist texts commenting or discussing Porphyry's *Isagoge*: I. (Petri Abaelardi (?) *Positio Vocum Sententia* (pp. 66-73); II. Roscelini Compendiensis (?) *Disputata Porphyrii* pp. 74-102); III.1 *Excerpta Pommersfeldensia I* pp. 103-107; III.2 *Excerpta Pommersfeldensia II* pp. 108-110; III.3 *Excerpta Pommersfeldensia III* pp. 110-111.
55. ———. 1992. "Twelfth-Century Nominales. The Posthumous School of Peter Abelard." *Vivarium* no. 30:97-109.
56. ———. 1995. "Nominalia." *Didascalía* no. 1:47-88.
57. ———. 1999. "Pierre Abélard Et Guillaume De Champeaux Dans Les Premières Années Du Xii Siècle: Une Étude Préliminaire." In *Langage, Sciences, Philosophie Au Xii Siècle*, edited by Biard, Joël, 93-123. Paris: Vrin.
58. ———. 2004. "Are Argumentations Propositions?" In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 81-110. Firenze: Leo S. Olschki Editore.
Acts of the 14th European Symposium on Medieval Logic and Semantics - Rome, June 11-15, 2002
59. ———. 2009. "Vocales Revisited." In *The Word in Medieval Logic, Theology and Psychology. Acts of the Xiiith International Colloquium of the Société Internationale Pour L'étude De La Philosophie Médiévale, Kyoto, 27*

September - 1 October 2005, edited by Shimizu, Tetsuro and Burnett, Charles, 81-172. Turnhout: Brepols.

60. Iwakuma, Yukio, and Ebbesen, Sten. 1992. "Logico-Theological Schools from the Second-Half of the 12th Century: A List of Sources." *Vivarium* no. 30:173-210.
 61. Jacobi, Klaus. 1980. "Diskussionen Über Prädikationstheorie in Den Logischen Schriften Des Petrus Abaelardus." In *Petrus Abaelardus, 1079-1142. Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 165-179. Trier: Paulinus-Verlag.
 62. ———. 1981. "Die Semantik Sprachliche Ausdrücke, Ausdrucksfolgen Und Aussagen Im Abaelards Kommentar Zu *Peri Hermeneias*." *Medioevo.Rivista di storia della filosofia medievale* no. 7:41-89.
 63. ———. 1983. "Abelard and Frege: The Semantics of Words and Propositions." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 81-96. Bologna: CLUEB.
 64. ———. 1985. "Peter Abelard's Investigations into the Meaning and Functions of the Speech Sign *Est*." In *The Logic of Being*, edited by Knuuttila, Simo and Hintikka, Jaakko, 1-15. Dordrecht: Reidel.
- "Although Peter Abelard was the most distinguished teacher of logic of his time, a logic understood to be the science of argumentative discourse, he was not destined to found a new philosophical tradition. The historical situation offers at Least a partial explanation -- the pace of philosophical and theological research was so brisk in the twelfth century that many of the established schools enjoyed life spans of at most two or three generations of teachers. The restlessness of the times is embodied to a special degree in Abelard.(1) His writings include commentaries, in many cases several to a work, on the logical works of Aristotle and Porphyry then available, handed down in the form of Boethius' translations, and on Boethius' own logical works. Abelard has to take a number of positions into consideration here: several commentaries on Aristotle by ancient scholars, by

Boethius, and by Abelard's own predecessors and teachers, and furthermore the grammatical theories of Priscian and those deriving from Abelard's contemporaries. He discovers with distinctive acumen that the tradition he is examining is disunited and full of tensions on basic questions. It is in the analysis and discussion of these tensions that he finds the field of his own philosophical research. He expects to reach solutions by intensifying the controversies, not by seeking harmony. Thus he traces argument and counter-argument in great thoroughness of detail and from a dizzying succession of points of view, abandoning theses and offering countertheses. What his students could learn from him was not so much a particular theory as his method of formulating and discussing problems.

The situation is much the same for us. If we turn to Abelard in our inquiry into the logic and semantics of the speech sign 'est', we must discover anew the questions which concerned him. In the first Part of this Paper, I will sketch some of the discussions conducted by Abelard in order to make clear in what contexts he found himself confronting questions on the variations of meaning, function, or use of the expression 'est'. In the second part, I will group various theses which Abelard deals with appropriately. It is my intention to plot out the full range of the theories discussed and to mark points of conflict. In the third and final part, I will make some cautious comments on the deeper current of unity to be observed in Abelard's reflections, a current perhaps more easily discernible to the modern eye than it was to Abelard himself."

(1) Cf. Jolivet (1969), Chapter IV; de Rijk (1980). Also compare Häring (1975), who explains the meager transmission of Abelard's works as at least partially attributable to Abelard's style of thinking and writing. His philosophical "works" were not written as books intended to be recopied and handed down but as records of his own thinking to be used in teaching. A thesis which he adheres to

with conviction at one point in his writings may reappear later or even in a reworking of the first source as being subject to doubt or in need of revision.

65. ———. 1985. "Diskussionen Über Unpersönliche Aussagen in Peter Abaelards Kommentar Zu *Peri Hermeneias*." In *Mediaeval Semantics and Metaphysics. Studies Dedicated to L. M. De Rijk, Ph.D., Professor of Ancient and Mediaeval Philosophy at the University of Leiden on the Occasion of His 60th Birthday*, edited by Bos, Egbert P., 1-63. Nijmegen: Ingenium Publishers.
66. ———. 1999. "'Homo Sentitur', 'Homo Intelligitur'. Untersuchungen Peter Abaelards Zur Referentiellen Opakheit in Intensionalen Kontexten." *Studia Mediewistyczne* no. 34-35:87-92.
67. ———. 2004. "Philosophy of Language." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfooy, Kevin, 126-157. Cambridge: Cambridge University Press.

"Abelard's investigations into the philosophy of language are of great interest not only with respect to the history of philosophy, but also with respect to systematic considerations. These investigations, however, are not readily accessible. They offer nothing to a reader who wants to glean information quickly from them. A thorough study is required, and this itself requires extraordinary patience. The purpose of this chapter is to contribute to the project of making Abelard's investigations into the philosophy of language accessible to the general philosophical community."
68. Jacobi, Klaus, King, Peter, and Strub, Christian. 1996. "From *Intellectus Verus / Falsus* to the *Dictum Propositionis*. The Semantics of Peter Abelard and His Circle." *Vivarium* no. 34:15-40.

"In his commentary on Aristotle's *Peri hermeneias*, Abelard distinguishes the form of an expression (*oratio*) from what it says, that is, its content. The content of an expression is its understanding (*intellectus*).

This distinction is surely the most well-known and central idea in Abelard's commentary. It provides him with the opportunity to distinguish statements (*enuntiationes*) from other kinds of expressions without implying a difference in their content, since the ability of a statement to signify something true or false (*verum vel falsum*) cannot be found in its content. More precisely, Abelard distinguishes statements both from complete expressions (*orationes perfectae*) that are not statements but rather questions, requests, commands, etc. and from incomplete expressions, that is, mere word strings (*orationes imperfectae*), such as *homo albus*. These kinds of expressions, according to Abelard, do not differ in the understanding they present but in the way they present it." (notes omitted)

69. Jacobi, Klaus, and Strub, Christian. 1995. "Peter Abaelard Als Kommentator." In *Aristotelica Et Lulliana: Magistro Doctissimo Charles H. Lohr Septuagesimum Annum Feliciter Agenti Dedicata*, edited by Dominguez, Fernando, 11-34. The Hague: Martinus Nijhoff.
70. Jolivet, Jean. 1963. "Abélard Et Le Philosophe. (Occident Et Islam Au Xii Siecle)." *Revue de l'Histoire des Religions* no. 164:181-189.
Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 53-61.
71. ———. 1969. *Abélard Ou La Philosophie Dans Le Langage*. Paris: Seghers.
Deuxième édition: Paris Éditions du Cerf 1994.
Choix de textes pp.111-206.
72. ———. 1969. *Arts Du Langage Et Théologie Chez Abélard*. Paris: Vrin.
Deuxième édition augmentée 1982.
73. ———. 1974. "Comparaison Des Théories Du Langage Chez Abélard Et Chez Les Nominalistes Du Xiv Siècle." In *Peter Abelard. Proceedings of the International Conference: Louvain, May 10-12, 1971*, edited by Buytaert, Éloi Marie, 163-178. Leuven: Leuven University Press.

Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 109-125.

74. ———. 1975. "Notes De Lexicographie Abélardienne." In *Pierre Abélard - Pierre Le Vénérable. Les Courants Philosophiques, Littéraires Et Artistiques En Occident Au Milieu Du XII Siècle*, edited by Jolivet, Jean and Louis, René, 531-543. Paris: Éditions du Centre national de la recherche scientifique.

Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 125-137.

75. ———. 1975. "Vues Médiévales Sur Les Paronymes." *Revue Internationale de Philosophie* no. 113:222-242.

Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 138-158.

"Cet article a pour objet de signaler un point de rencontre entre le platonisme et la théorie de la grammaire au moyen âge. La réflexion sur les paronymes y a conduit presque irrésistiblement à des thèses d'allure platonicienne: le rapport de l'adjectif au nom évoquant celui du sensible à l'idée. On observe ce fait non seulement chez des auteurs du 12^e siècle (Bernard de Chartres, Abélard...) mais même chez des aristotéliciens du 13^e (Boèce de Dacie entre autres; Thomas d'Aquin aussi, mais dans un contexte différent). C'est là une manifestation de ce qu'on peut appeler le "platonisme grammatical."

76. ———. 1980. "Doctrines Et Figures De Philosophes Chez Abélard." In *Petrus Abaelardus, 1079-1142. Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 103-120. Trier: Paulinus-Verlag.

Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 185-202.

77. ———, ed. 1981. *Abélard En Son Temps. Actes Du Colloque International Organisé À L'occasion Du Ixe Centenaire De La Naissance De Pierre Abélard. (14-19 Mai 1979)*. Paris: Belles Lettres.
Sur la philosophie d'Abélard: J. Châtillon: Abélard et les écoles 146-158; Jean Jolivet: Non-réalisme et platonisme chez Abélard. Essai d'interprétation 175-195.
78. ———. 1981. "Non-Réalisme Et Platonisme Chez Abélard. Essai D'Interpretation." In *Abélard En Son Temps. Actes Du Colloque International Organisé À L'occasion Du 9e Centenaire De La Naissance De Pierre Abélard. (14-19 Mai 1979)*, edited by Jolivet, Jean, 175-195. Paris: Belles Lettres.
Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 257-278.
"Le problème des universaux: la doctrine "réaliste" qui croit, plus ou moins suivant les cas à la réalité des genres et des espèces (Guillaume de Champeaux, Abélard de Bath, Gautier de Mortagne, Joscelin de Soissons, Bernard de Chartres, Gilbert de la Porrée), la doctrine "nominaliste" qui déconnecte le mot et la chose: Roscelin, et enfin la solution de Pierre Abélard qui se caractérise par une bipolarité: réalisme et non-réalisme, point de vue sémantique et point de vue syntactique."
79. ———. 1981. "Abélard Et Guillaume D'Ockham, Lecteurs De Porphyre." In *Abélard. Le "Dialogue", La Philosophie De La Logique*, 31-54. Neuchâtel: Secrétariat de l'Université.
Repris dans: J. Jolivet, *Aspects de la pensée médiévale: Abélard. Doctrines du langage*, Paris, Vrin, 1987, pp. 233-256.
80. ———. 1987. *Aspects De La Pensée Médiévale: Abélard. Doctrines Du Langage*. Paris: Vrin.
Recueil d'articles (1963-1985).
81. ———. 1990. "Pierre Abélard Et Son École." In *Contemporary Philosophy. Vol. 6.1: Philosophy and Science in the Middle Ages*, edited by Guttorm, Floistad, 97-104. Amsterdam: Kluwer.

Review of the recent literature on Abelard up to 1972; see Mews (1990), for the period 1972-1985.

82. ———. 1992. "Trois Variations Médiévales Sur L'universel Et L'individu: Roscelin, Abélard, Gilbert De La Porrée." *Revue de Métaphysique et de Morale*:111-155.
Repris dans: J. Jolivet, *Perspectives médiévales et arabes*, Paris, Vrin, 2006 pp. 29-70.
"C'est un anachronisme que de vouloir qualifier de réalistes ou nominalistes des philosophes qui ont travaillé deux cents ans avant les mises en place doctrinales du xive siècle. D'autre part, il est surprenant de voir leurs doctrines respectives de l'individu se distribuer autrement que ne le feraient présumer leurs vues sur l'universel. Ce point gagne en clarté quand on l'aborde du côté de leurs sémantiques du nom, mais les cadres de l'historiographie usuelle n'en restent pas intacts pour autant." (p. 111)
83. ———. 1999. "Sur Les Prédicables Et Les Catégories Chez Abélard." In *Langage, Sciences, Philosophie Au Xiie Siècle*, edited by Biard, Joël, 165-175. Paris: Vrin.
84. ———. 1999. "Sens Des Propositions Et Ontologie Chez Pierre Abélard Et Grégoire De Rimini." In *Théories De La Phrase Et De La Proposition De Platon À Averroès*, edited by Büttgen, Philippe, Diebler, Stéphane and Rashed, Marwan, 307-321. Paris: Éditions Rue d'Ulm / Presses de l'École normale supérieure.
Repris dans: J. Jolivet, *Perspectives médiévales et arabes*, Paris, Vrin, 2006 pp. 103-116.
85. ———. 1999. "Note Sur Le "Non-Réalisme" D'Abélard." In *Signs and Signification. Vol. I*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 7-15. New Delhi: Bahri Publications.
Repris dans: J. Jolivet, *Perspectives médiévales et arabes*, Paris, Vrin, 2006 pp. 85-92.
86. ———. 2003. "À Propos D'une Critique Abélardienne Du Réalisme." In *Pierre Abelard. Colloque International De Nantes*, edited by Jolivet, Jean and Habrias, Henri, 109-118. Rennes: Presses Universitaires de Rennes.

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87. Jolivet, Jean, and Habrias, Henri, eds. 2003. *Pierre Abélard. Colloque International De Nantes (3-4 Octobre 2001)*. Rennes: Presses Universitaires de Rennes.
Sur la philosophie d'Abélard voir: Jean Jolivet: Avant-propos 9-14; François Lejeune: Pierre Abélard et Jean de Salisbury: "Metalogicon" II, 10 63-75; Jean Jolivet: À propos d'une critique abélardienne du réalisme 109-118; Joël Biard: Logique et psychologie dans le "De intellectibus" d'Abélard 309-319; Paul Thom: La logique abélardienne des modales "de rebus" 321-337.
88. Kahn, Charles H. 1972. "On the Terminology for *Copula* and *Existence*." In *Islamic Philosophy and the Classical Tradition. Essays Presented by His Friends and Pupils to Richard Walzer on His Seventieth Birthday*, edited by Stern, S.M., Hourani, Albert and Brown, Vivian, 141-158. London: Bruno Cassirer.
Reprinted in C. H. Kahn, *Essays on Being*, New York, Oxford University Press, 2009 pp. 41-61.
89. King, Peter. 1982. *Peter Abailard and the Problem of Universals in the Twelfth Century*, Princeton University. Unpublished Ph.D. dissertation available at ProQuest Dissertation Express.
90. ———. 2004. "Metaphysics." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfooy, Kevin, 65-125. Cambridge: Cambridge University Press.
"Abelard's philosophy is the first example in the Western tradition of the cast of mind that is now called *nominalism*. Although his view that universals are mere words (*nomina*) is typically thought to justify the label, Abelard's nominalism - or better, his *irrealism* - is in fact the hallmark of his metaphysics. He is an irrealist not only about universals, but also about propositions, events, times other than the present, natural kinds, relations, wholes, absolute space, hylomorphic composites, and the like. Instead,

Abelard holds that the concrete individual, in all its richness and variety, is more than enough to populate the world. He preferred reductive, atomist, and material explanations when he could get them; he devoted a great deal of effort to pouring cold water on the metaphysical excesses of his predecessors and contemporaries. Yet unlike modern philosophers, Abelard did not conceive of metaphysics as a distinct branch of philosophy. Following Boethius, he distinguishes philosophy into three branches: *logic*, concerned with devising and assessing argumentation, an activity also known as dialectic; *physics*, concerned with speculation on the natures of things and their causes; and *ethics*, concerned with the upright way of life."

91. ———. 2007. "Abelard on Mental Language." *American Catholic Philosophical Quarterly* no. 81:169-187.
"I argue that Abelard was the author of the first theory of mental language in the Middle Ages, devising a "language of thought" to provide the semantics for ordinary languages, based on the idea that thoughts have linguistic character. I examine Abelard's semantic framework with special attention to his principle of compositionality (the meaning of a whole is a function of the meanings of the parts); the results are then applied to Abelard's distinction between complete and incomplete expressions, as well as the distinction between sentences and the statements which the sentences are used to make. Abelard's theory of mental language is shown to be subtle and sophisticated, the forerunner of the great theories of the fourteenth century."
92. ———. 2009. "Abelard's Answers to Porphyry." *Documenti e Studi sulla Tradizione Filosofica Medievale* no. 18:249-270.
93. Knuuttila, Simo. 1993. *Modalities in Medieval Philosophy*. New York: Routledge.
See Chapter 2: *Philosophical and Theological Modalities in Early Medieval Thought*.
Boethius' Modal Conceptions 45, New Theological Modalities: from Augustine to Anselm of Canterbury 62;

Gilbert of Poitiers, Peter Abelard and Thierry of Chartres 75-98.

94. ———. 2010. "Medieval Commentators on Future Contingents in *De Interpretatione* 9." *Vivarium* no. 48:79-95.

"This article considers three medieval approaches to the problem of future contingent propositions in chapter 9 of Aristotle's *De Interpretatione*. While Boethius assumed that God's atemporal knowledge infallibly pertains to historical events, he was inclined to believe that Aristotle correctly taught that future contingent propositions are not antecedently true or false, even though they may be characterized as true-or-false. Aquinas also tried to combine the allegedly Aristotelian view of the disjunctive truth-value of future contingent propositions with the conception of all things being timelessly present to God's knowledge. The second approach was formulated by Peter Abelard who argued that in Aristotle's view future contingent propositions are true or false, not merely true-or-false, and that the antecedent truth of future propositions does not necessitate things in the world. After Duns Scotus, many late medieval thinkers thought like Abelard, particularly because of their new interpretation of contingency, but they did not believe, with the exception of John Buridan, that this was an Aristotelian view."

95. Kretzmann, Norman. 1982. "The Culmination of the Old Logic in Peter Abelard." In *Renaissance and Renewal in the Twelfth Century*, edited by Benson, Robert L. and Constable, Giles, 488-511. Oxford: Clarendon Press.
96. Küng, Guido. 1981. "Abélard Et Les Vues Actuelles Sur Les Universaux." In *Abélard: Le 'Dialogue'. La Philosophie De La Logique. Actes Du Colloque De Neuchâtel, 16-17 Novembre 1979*, 99-118. Neuchâtel: Secrétariat de l'Université.
97. Legowicz, Jan. 1981. "Das Problem Des Ursprungs Der 'Allgemeinheit' Von Nahmen In Der Universalientheorie Bei

Abaelard." In *Sprache Und Erkenntnis Im Mittelalter*. Vol. I, edited by Bechmann, Jan P., 352-256. Berlin: Walter de Gruyter.

Akten des VI. internationalen Kongresses für mittelalterliche Philosophie der Société internationale pour l'étude de la philosophie médiévale, 29. August-3. September 1977, Bonn

98. Lejeune, François. 2003. "Pierre Abélard Et Jean De Salisbury : Metalogicon Ii, 10." In *Pierre Abelard. Colloque International De Nantes*, edited by Jolivet, Jean and Habrias, Henri, 63-76. Rennes: Presses Universitaires de Rennes.

99. Lenz, Martin. 2005. "Peculiar Perfection. Peter Abelard on Propositional Attitudes." *Journal of the History of Philosophy* no. 43:377-386.

"In the course of the debates on Priscian's notion of the perfect sentence, the philosopher Peter Abelard developed a theory that closely resembles modern accounts of propositional attitudes and that goes far beyond the established Aristotelian conceptions of the sentence. According to Abelard, the perfection of a sentence does not depend on the content that it expresses, but on the fact that the content is stated along with the propositional attitude towards the content. This paper tries to provide an analysis and a consistent interpretation of Abelard's arguments within the framework of the mediaeval models of language and mind."

100. ———. 2007. "Are Thoughts and Sentences Compositional? A Controversy between Abelard and a Pupil of Alberic on the Reconciliation of Ancient Theses on Mind and Language." *Vivarium* no. 45:169-188.

"This paper reconstructs a controversy between a pupil of Alberic of Paris and Peter Abelard which illustrates two competing ways of reconciling different ancient traditions. I shall argue that their accounts of the relation between sentences and thoughts are incompatible with one another, although they rely on the same set of sources. The key to

understanding their different views on assertive and non-assertive sentences lies in their disparate views about the structure of thoughts: whereas Abelard takes thoughts to be compositional, the opponent's arguments seem to rely on the premise that the mental states which correspond to sentences cannot be compositional in the way that Abelard suggested. Although, at a first glance, Abelard's position appears to be more coherent, it turns out that his opponent convincingly argues against weaknesses in Abelard's semantic theory by proposing a pragmatic approach."

101. Lewis, Neil. 1987. "Determinate Truth in Abelard." *Vivarium* no. 25:81-109.
102. Libera, Alain de. 1981. "Abélard Et Le Dictisme." In *Abélard. Le "Dialogue", La Philosophie De La Logique*, 59-97. Neuchâtel: Secrétariat de l'Université.
Actes du Colloque de Neuchâtel, 16-17 Novembre 1979
103. ———. 1996. *La Querelle Des Universaux. De Platon À La Fine Du Moyen Age*. Paris: Éditions du Seuil.
Chapter 3. Le haut Moyen Age et la querelle des universaux pp.128-175.
104. ———. 1999. *L'art Des Généralités. Théories De L'abstraction*. Paris: Aubier.
See in particular: Chapitre III. *Pierre Abélard* pp. 281-498.
105. ———. 2002. *La Référence Vide. Théories De La Proposition*. Paris: Presses Universitaires de France.
La Théorie abélardienne du statut pp. 120-130.
106. ———. 2002. "Des Accidents Aux Tropes. Pierre Abélard." *Revue de Métaphysique et de Morale*:509-530.
"The Author traces the history of individual properties from Antiquity to the Middle Ages in light of D.C. Williams and Campbell's theory of tropes. He compares the relation of co-presence to notions which could seem related such as "syndrome of qualities" or "bundle of qualities". He then examines the validity of ontological particularism for Abelard's philosophy. He studies the non-transferability of tropes in Boethius, Abelard, and its origins in Muslim

philosophy (*ash'ari* theology). He concludes that such an ontological particularism is not necessarily linked to nominalism."

107. Little, Edward F. 1969. "The Status of Current Research on Abelard. Its Implications for the Liberal Arts and Philosophy of the Xith and Xiith Centuries." In *Arts Libéraux Et Philosophie Au Moyen Age, 1119-1124*. Paris: Vrin.

"In the last decade of the eleventh and in the first half of the twelfth century questions were asked and argued about the unity and trinity of God, which attracted great attention and led to an independent, autonomous study of theology in the due course of time. Leaders in this movement were Anselm, Roscelin and Abelard. Abelard re-introduced the term "theology" to popular use. Roscelin and Abelard also debated questions which are still considered philosophical, but at the early date even their questions of divinity, or of theology, were not differentiated, other than potentially. The written arguments remaining in our hands today are firmly based in dialectical and logical and linguistic operations. In short they are trivial, in a sense of the word which has gone out of use. In Abelard's case, which concerns us here, it seems for this reason that all his work should be taken into account in a treatment of the liberal arts and philosophy in this period, -- even the "theologies."

What seems needed most of all at the present time is a review of the state of our knowledge of Abelard's work. The present paper is directed to this question. After a quick review of modern scholarship, it will note the work being done at the present time and some appealing lines for future activity. It should become clear that, while research of the twentieth century has emphasized Abelard's theology, it has rediscovered the logical, dialectical, and linguistic foundation of that theology. A tendency is to examine it no longer strictly upon its own doctrinal merits, but upon its experimental, logical and philosophical character. This

seems appropriate chronologically, in that it evaluates these works within the loose and formative context of their own time and aims. While this article is addressed specifically to this conference, it is also intended to be of use to the general student of Abelard." (p. 1119)

108. Louis, René, and Jolivet, Jean, eds. 1975. *Pierre Abélard, Pierre Le Vénérable. Les Courants Philosophiques, Littéraires Et Artistiques En Occident Au Milieu Du 12. Siècle. Abbaye De Chuny, 2 Au 9 Juillet 1972*. Paris: Éditions du C.N.R.S.

On the philosophy of Abelard see: Paul Vignaux: Note sur le nominalisme d'Abélard 523-527 (discussion: 528-530); Jean Jolivet: Notes de lexicographie abélardienne 531-543 (discussion 544-546); Lambert-Marie de Rijk: La signification de la proposition (*dictum porpositionis*) chez Abélard 547-555; Tullio Gregory: Considérations sur *ratio* et *natura* chez Abélard 569-581 (discussion: 582-584).

109. Luscombe, David E. 1969. *The School of Peter Abelard. The Influence of Abelard's Thought in the Early Scholastic Period*. Cambridge: Cambridge University Press.

Contents: Preface IX-XI; List of Abbreviations XII-XIII; I. The Literary Evidence 1; II. Abelard's Followers 14; III: The Diffusion of Abelardian Writings 60; IV. The Condemnation of 1140 103; V. The Theological Writings of Abelard's Closest Disciples 143; VI. The School of Laon 173; VII. Hugh of St Victor 183; VIII. The *Summa Sententiarum* 198; IX: Abelard and the Decretum of Gratian 214; X. Abelard's Disciples and the School of St Victor 224; XI. Peter Lombard 261; XII. Robert of Melun 281; XIII. Richard of St Victor 299; XIV. Conclusion 308; Appendices 311; Bibliography 316; Index of Manuscripts 347; General Index 350-360.

"This book represents an historian's attempt to discern the ways in which Abelard's thought reached and influenced his contemporaries and successors. The subject has attracted historical study for nearly a century if we take as a starting

point the classic article by Heinrich Denifle entitled 'Die Sentenzen Abaelards und die Bearbeitungen seiner Theologia vor Mitte des 12. Jahrhunderts' which appeared in the Archiv für Literatur- und Kirchengeschichte des Mittelalters in 1885. Since that time much further knowledge of Abelard's school and of his disciples has accumulated and in addition a vast amount of scholarly energy has been devoted to the task of understanding and of bringing to life twelfth-century thought and learning in its many aspects and moods. With respect to Abelard's following it is perhaps a fitting time to draw together some threads and to offer an interpretation of its place in the evolution of the early scholastic movement.

The principal sources of this study are literary, biographical, palaeographical and doctrinal. The occasional surviving literary references to Abelard which were made in the twelfth century and later are numerous enough to convey the intensity and the scale of the disagreements which existed concerning his personality and achievement. The names of several of his disciples and hearers are also known and an examination is here attempted of their relationships to Abelard as well as of their reactions to his work and thought. However, information concerning twelfth century personalities is seldom abundant and much can also be gained from studying the codicology of Abelard and his school.

The surviving or known manuscripts of writings by Abelard and by his disciples offer further knowledge of Abelard's readership and following and therefore also of the general history of formative period in medieval thought. Abelard's public career was closed in 1140 by an ecclesiastical condemnation. As a condemned heretic whose errors had been vigorously denounced by, among others, Bernard of Clairvaux, Abelard's influence upon his age was limited and tainted. That he was survived by disciples is an established fact, but what was done by these disciples to develop or to

qualify his teaching still requires examination. It seems that the condemnation of 1140 raised as many questions as it solved and that the conflicts between Abelard's critics and his defenders in the schools entailed serious disagreements not only over outlook and method but also over specific teachings which continued to be debated in the years that followed. The stimulus which Abelard gave to the study of particular ideas and themes outlived the condemnation of 1140 and some of the criticisms which were levelled against Abelard at this time were an insufficient guide to his contemporaries. Already within the school of Hugh of St Victor a more sophisticated and refined study of Abelard's thought was in progress, and it was this which provided the springboard for many future doctrinal developments. Throughout the 1130s, 40s and 50s the interaction of the rival traditions of the schools of Abelard and of Hugh is a striking feature of theological discussion. If the *Sentences* of Peter Lombard, which enjoyed such a prolonged influence throughout the medieval period, may be regarded as the climax of continuous activity by schoolmen during the first half of the twelfth century, then it is clear that Abelard, for all his exaggerations and errors, was a major and continuing stimulus to debate and thought.

I have tried in the following pages to illustrate primarily the development of theological thought in approximately the first half of the twelfth century by reference not only to Abelard's disciples but also to major teachers of the various schools of the period such as Gratian of Bologna, Hugh and Richard of St Victor, Peter Lombard and Robert of Melun. I have not tried to be exhaustive and much could be said about the relationship between Abelard and other writers; the Porretans in particular are little mentioned. So much is added yearly to knowledge of the literature and thought of this period that much of what appears below will soon be subject to modification and revision." (from the Preface, IX-X).

110. ———. 1983. "St. Anselm and Abelard." *Anselm Studies. An Occasional Journal* no. 1:207-229.
111. ———. 1988. "Peter Abelard." In *A History of Twelfth-Century Western Philosophy*, edited by Dronke, Peter, 279-307. Cambridge: Cambridge University Press.
Chapter 10
112. ———. 1992. "The School of Peter Abelard Revisited." *Vivarium* no. 30:127-138.

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2. Maloney, Christopher J. 1982. "Abailard's Theory of Universals." *Notre Dame Journal of Formal Logic* no. 23:27-38.
"This paper attempts to fill these lacunae with a formal reconstruction of Abailard's theory of the relation between statuses, concepts and individuals. As such, this essay is a contribution not only to the history of medieval logic but also to the theory of universals and the philosophy of mind."
3. Marenbon, John. 1991. "Abelard's Concept of Possibility." In *Historia Philosophiae Medii Aevi. Studien Zur Geschichte Der Philosophie Des Mittelalters. Festschrift Für Kurt Flasch Zu Seinem 60. Geburtstag. (Vol. Ii)*, edited by Mojsisch, Burkhard and Pluta, Olaf, 595-609. Amsterdam: B. R. Grüner.
Reprinted as Essay X in: John Marenbon, *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*.
4. ———. 1992. "Vocalism, Nominalism and the Commentaries on the *Categories* from the Earlier Twelfth Century." *Vivarium* no. 30:51-61.
Reprinted as Essay XIII in: John Marenbon, *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*.

5. ———. 1992. "Abelard, *Ens* and Unity." *Topoi* no. 11:149-158.
"Although Abelard arrived at a view of "ens" nearer to Aristotle's than his sources would suggest, unlike Thirteenth-century thinkers he did not work out a view of transcendentals in terms of "ens", its attributes and their convertibility. He did, however, regard unity (though not goodness or truth) as an attribute of everything. At first, Abelard suggested that unity, being inseparable, could not be an accident according to Porphyry's definition ('that which can come and leave a subject without the subject being corrupted') either it is some type of form not classified by Porphyry, or not a form at all. In his later logical work, Abelard argued differently. Unity, he said, is an accidental form, but Porphyry's definition of an accident must be understood negatively, not as asserting something about what could happen in reality (since the form of unity could never leave its subject) but rather something about an absence of connection: were it, per impossible, to occur, the loss by a subject of its form of unity would not lead to the loss of its specific or generic status."
6. ———. 1993. "Medieval Latin Commentaries and Glosses on Aristotelian Logical Texts, before C. 1150 A.D." In *Glosses and Commentaries on Aristotelian Logical Texts: The Syriac, Arabic and Medieval Latin Traditions*, edited by Burnett, Charles, 77-127. London: Warburg Institute, University of London.
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Reprinted as Essay X in: John Marenbon, *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*.

8. ———. 1997. *The Philosophy of Peter Abelard*. Cambridge: Cambridge University Press.
Paperback edition, with corrections and bibliographical note, 1999.
9. ———. 1997. "The Platonisms of Peter Abelard." In *Néoplatonisme Et Philosophie Médiévale*, edited by Benakis, Linos G., 109-129. Turnhout: Brepols.
Actes du Colloque international de Corfou, 6-8 octobre 1995 organisé par la Société internationale pour l'étude de la philosophie médiévale.
Reprinted as Essay XII in: John Marenbon, *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*.
"When, in 1966, Father Chenu published *Les platonismes au XII siècle*, twelfth-century Platonism had already been a topic of scholarly interest for nearly a century. (1) Chenu's novelty lay in his plural: not «Platonism» but «Platonisms». He distinguished a strand going back to Augustine, another deriving from the *Timaeus* and Boethius, one linked to pseudo-Dionysius and another to Arab writers. Chenu's is a useful analytical method which allows the scholar to avoid broad, oversimplifying labels whilst continuing to see the history of medieval philosophy in the neat terms of interrelated and interacting traditions. No doubt it could be fruitfully applied to Abelard -- but that is not my intention here. The Platonisms I shall be discussing are not those of the historian, but Abelard's own: some of the diverse ways in which he used a notion of Plato and Platonic teaching to formulate, structure and convey his own thought (2). At the end of this paper, I shall return to the question of method, and ask what my procedure has to offer by contrast with other ways of discussing Platon- or any other -ism."

(1) In M.-D. Chenu, *La théologie au douzième siècle* (Études de philosophie médiévale, 45). Paris, 1966, pp. 108-141. For a sketch of the historiography of twelfth-century Platonism, see J. Marenbon, "Platonismus im zwölften Jahrhundert: alte und neue Zugangsweisen" (translation by A. Snell & O. Summerell), in T. Kobusch and B. Moisisch (eds.), *Platon in der abendländischen Geistesgeschichte, neue Forschungen zum Platonismus*, Darmstadt, forthcoming. [Darmstadt, Wissenschaftliche Buchgesellschaft, 1997 pp. 101-119]

(2) In my general presentation of Abelard's use of Plato and attitude to him, I summarize arguments put forward in various places and different contexts in my *The Philosophy of Peter Abelard*. Cambridge, 1997. But in my longer and more detailed discussions here -- of Plato universals, the *Timaeus* and optimism, and «the Platonism of the *Republic*» -- I develop and extend what I have written in the book.

10. ———. 1998. "The Twelfth Century." In *Routledge History of Philosophy. Volume Iii: Medieval Philosophy*, edited by Marenbon, John, 150-187. New York: Routledge.
On Abelard see pp. 155-166.
11. ———. 1999. "Abélard, La Predication Et Le Verbe "Être"." In *Langage, Sciences, Philosophie Au Xiie Siècle*, edited by Biard, Joël, 199-215. Paris: Vrin.
12. ———. 2000. *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*. Aldershot: Ashgate.
13. ———. 2004. "Dicta, Assertion and Speech Acts: Abelard and Some Modern Interpreters." In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 59-80. Firenze: Leo S. Olschki.
Acts of the 14th European Symposium on Medieval Logic and Semantics - Rome, June 11-15, 2002.
14. ———. 2005. *Le Temps, L'éternité Et La Prescience De Boèce À Thomas D'Aquin*. Paris: Vrin.
Chapitre III: *Abélard* pp. 55-93.

15. ———. 2006. "The Rediscovery of Peter Abelard's Philosophy." *Journal of the History of Philosophy* no. 44:331-351.

"My article surveys philosophical discussions of Abelard over the last twenty years. Although Abelard has been a well-known figure for centuries, his most important logical works were published only in the twentieth century and, so I argue, the rediscovery of him as an important philosopher is recent and continuing. I concentrate especially on work that shows Abelard as the re-discoverer of propositional logic (Chris Martin); as a subtle explorer of problems about modality (Simo Knuuttila, Herbert Weidemann) and semantics (Klaus Jacobi); as a metaphysician before the reception of Aristotle's *Metaphysics* (Peter King); and as an ethical thinker who echoes the Stoics (Calvin Normore) and anticipates Kant (Peter King)."
16. ———. 2007. "Abelard's Changing Thoughts on Sameness and Difference in Logic and Theology." *American Catholic Philosophical Quarterly* no. 81:229-250.
17. ———. 2008. "Was Abelard a Trope Theorist?" In *Compléments De Substance. Études Sur Les Propriétés Accidentelles Offertes À Alain De Libera*, edited by Erismann, Christophe and Schniewind, Alexandrine, 85-101. Paris: Vrin.

"It was Christopher Martin who, in 1992, first made the link between Abelard's views on accidents and *differentiae* and what are usually called, in contemporary analytical ontology, 'tropes'. Myself apart, Alain de Libera is the only writer I know who has taken serious notice of this idea, discussing it both on its own, and in the wider context of truth-makers and empty reference.(1) De Libera does not think that Abelard can illuminatingly be described as a trope-theorist. I still disagree, and although our disagreement is based on matters of detail, it may illustrate, as I suggest in the conclusion, a wider difference in approach."

- I. C. Martin, 'The Logic of the *Nominales*, or, The Rise and Fall of Impossible *Positio*', *Vivarium* 30 (1992), 110-26; J. Marenbon, *The Philosophy of Peter Abelard*, Cambridge; CUP, 1997, 119-30; A. de Libera, 'Des accidents aux tropes. Pierre Abélard', *Revue de métaphysique et de morale* 4 (2002) 509-30; *La Référence vide. Théories de la proposition*, Paris; PUF, 2002, 122-6, 269-97.
18. ———. 2013. *Abelard in Four Dimensions. A Twelfth-Century Philosopher in His Context and Ours*. Notre Dame: University of Notre Dame Press.
 19. Markowski, Mieczyslaw. 1971. *Burydanizm W Polsce W Okresie Prezedkopernikanskim*. Warsaw: Zaklad Narodowy Imienia Ossolinskich (Ossolineum).
The book is in Polish, but with Contents (pp. 635-637) and Summary (pp. 531-539) in English: *Buridanism in Poland in the Pre-Copernican Times*.
 20. Martin, Christopher J. 1986. "William's Machine." *Journal of Philosophy* no. 83:564-572.
William of Soissons and Abelard's theory of entailment.
 21. ———. 1987. "Something Amazing About the Peripatetic of Pallet: Abelard's Development of Boethius' Account of Conditional Propositions." *Argumentation* no. 1:419-436.
"Mediaeval logicians inherited from Boethius an account of conditional propositions and the syllogisms which may be constructed using them. In the following paper it is shown that there are considerable difficulties with Boethius' account which arise from his failure to understand the nature of compound propositions and in particular to provide for their negation. Boethius suggests that there are two different conditions which may be imposed for the truth of a conditional proposition but he really gives no adequate account of how such propositions may be obtained. The true greatness of Peter Abaelard as a philosophical logician is revealed in what he is able to do with the material which he found in Boethius. It is shown that he developed a precise theory of conditionals giving an account of how true

conditionals may be obtained and principles which may be used to reject others as false. Unlike Boethius Abaelard properly appreciates that conjunctions must be treated as logical units. Even he, however, falls victim to difficulties which arise when this connective is brought into contact with negation and the conditions which he lays down for the truth of a conditional."

22. ———. 1987. "Embarrassing Arguments and Surprising Conclusions in the Development of Theories of the Conditional in the Twelfth Century." In *Gilbert De Poitiers Et Ses Contemporains: Aux Origines De La Logica Modernorum*, edited by Jolivet, Jean and Libera, Alain de, 377-400. Napoli: Bibliopolis.
23. ———. 1992. "The Logic of the "Nominales", or the Rise and Fall of Impossible Positio." *Vivarium* no. 30:110-126.
24. ———. 1999. *Theories of Inference and Entailment in the Middle Ages (Boethius, Philoponus, Peter Abelard, John Duns Scotus, William of Ockham)*, Princeton University. Unpublished Ph.D. dissertation available at ProQuest Dissertation Express.
25. ———. 2001. "Abaelard on Modality: Some Possibilities and Some Puzzles." In *Potentialität Und Possibilität. Modalaussagen in Der Geschichte Der Metaphysik*, edited by Buchheim, Thomas, Henri, Kneepkens Corneille and Lorenz, Kuno, 97-125. Stuttgart: Frommann-Holzboog.
 "In his monumental study of William of Sherwood's modal theory Klaus Jacobi (2) surveys the treatment of modality by philosophers in the preceding century and shows that their concern was for the most part to calculate the logical relations between the various forms of modal proposition which they recognised. Although theology demanded that they take an interest in the nature of divine power, without the *Physics* and *Metaphysics*, to prompt them, twelfth century philosophers generally had little to say on the relationship of modal propositions and their structures to the various sources of modal claims, to claims, for example, about the nature of potentiality, physical causation, or

action.(3) Some progress was made, however, and in the present paper I will consider the contribution of Peter Abaelard to the development of theories of modality and the curious attitude of one of his followers to his work on modal logic.

Although Abaelard had no access to the *Physics* or *Metaphysics* and precious little, if any, to the *Prior Analytics*,(4) he did find in the *Categories* and *De Interpretatione* texts which posed interpretive problems whose solution demanded that he discuss the nature of possibility and necessity. What follows is for the most part an examination of certain points made by Abaelard in his discussion of these problems. It is divided into two parts. In the first part of the paper I propose an account of Abaelard's theory of possibility and its application both to creatures and to God.(5) Abaelard's claims about divine power are rather well known and I mention them only very briefly at the end. His treatment of creaturely potentiality in commenting on various claims made by Aristotle in the *Categories* has, on the other hand, barely been noticed and my concern in the first part of the paper is to thus set them out in some detail.

The failure to take into account the full range of Abaelard's thinking about potentiality has led to some very misleading claims about his views on possibility. What my investigation shows is that Abaelard employs three different but related notions of potentiality. The first is the potentiality that an individual has for future action and it is constrained by its species nature, its particular constitution, and its present circumstances. The second and third are both introduced to explain how we may legitimately say, as authority requires, that an amputee is bipedal. They are different but both reduce all unqualified possibility to potentiality and all potentiality to compatibility with species nature. The unqualified possibilities open for an individual creature of a

given natural kind are thus for anything which is not incompatible with its species nature.

In the second part of the paper I first examine the account of modal propositions that Abaelard insists upon in discussing chapter 12 of *De Interpretatione*. I show that this account of the semantics of such propositions is completely in agreement with his treatment of the source of modal properties in natures. In his treatment of modal propositions Abaelard famously distinguishes between two different interpretations of propositions such as 'S is possibly P'. A personal, or '*de re*' reading, in which S is said to possess a power to be P, and an impersonal, or '*de sensu*' reading in which 'S's *being* P' is claimed to be possible where the nominal phrase is held to refer to a proposition, propositional content, or some other kind of entity.

Abaelard argues that only the *de re* reading yields a modal claim and that nominal modes are to be resolved into the corresponding adverbial modes. The truth conditions of modal propositions are thus always, according to Abaelard, ultimately to be given in terms of what is compatible and what is not with the specific nature of the subject of the *de re* reading of them.

Information about the fate of Abaelard's theories and the views of his followers is unfortunately very limited and it is pleasant to be able to add here to our knowledge. The texts that we have on divine and creaturely power agree with Abaelard's teaching in reducing unqualified potentiality to compatibility with species nature. In the concluding part of my paper, however, I show that the author of the *Summa Dialectice Artis* attributed to William of Lucca, otherwise an extremely devoted follower of Abaelard in logic, explicitly rejects his master's *de re* account of modality in favour of the alternative *de sensu* reading which Abaelard had gone to great lengths to refute. The *Summa* thus leaves us with a considerable puzzle about the commitment of Abaelard's followers in logic to his theory of modality. As compensation

for this, we will see that the *Summa* also provides us with a solution to a small puzzle raised by Jacobi and Knuuttila concerning Abaelard's views on the logical relations between quantified modal propositions." pp. 97-99

(2) Klaus Jacobi, *Die Modalbegriffe in den logischen Schriften des Wilhelm von Shyreswood*, Leiden 1980.

(3) The outstanding exception is St. Anselm's discussion of the logic of action sentences in the Lambeth Fragments printed in R. W. Southern and F. S. Schmitt, *Memorials of St. Anselm*, London 1969, 333-354.

(4) Cf. *Dialectica*, Introduction, XIII-XIX. The evidence that Abaelard had direct access to the *Prior Analytics* is extremely slight. The *Dialectica* contains what appear to be two quotations from the *Prior Analytics*, the definition of the syllogism from *An. Pr.* I 1, 24b 18-22 at *Dialectica*, 232.5-8 and the distinction between perfect and imperfect syllogisms from *An. Pr.* I 1, 24b 22-25 at *Dialectica*, 233.36-234.3. In the discussion following the definition of the syllogism, however, Abaelard refers not to the definition which he apparently quotes from Aristotle but rather to the definition given by Boethius in *De Syllogismo Categorico* II (PL 64, 821A 7 - 822C 12).

(5) Hermann Weidemann, 'Zur Semantik der Modalbegriffe bei Peter Abaelard', in: *Medioevo* 7 (1981), 1-40, argues that Abaelard thinks of possibility in this way but he does so very much the hard way by attempting to show that Abaelard's remarks on temporally determined modal sentences commit him to it. Here I take the very much easier course of pointing out Abaelard's explicit statement of the theory of synchronous possibility in terms of alternative world histories.

26. ———. 2003. "The Role of Categories in the Development of Abelard's Theory of Possibility." In *La Tradition Médiévale Des Catégories (Xii-Xv Siècles)*, edited by Biard, Joël and Rosier-Catach, Irène, 225-242. Louvain-la-Neuve: Peeters.

Actes du XIII Symposium européen de logique et sémantique médiévales (Avignon, 6-10 juin 2000).

27. ———. 2004. "Logic." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfooy, Kevin, 158-199. Cambridge: Cambridge University Press.

"A great deal of Peter Abelard's writing is concerned with what he regarded as logic, but which we would now classify as ontology or philosophical semantics. Following Cicero and Boethius, Abelard holds that properly speaking the study of logic has to do with the discovery and evaluation of arguments (*LI Isag.* 3.10). A necessary preliminary for this is an examination of the issues dealt with by Porphyry in the *Isagoge* and by Aristotle in the *Categories*, and *De interpretatione* (*LI Cat.* 113.26-114.30). In the present chapter, however, I will ignore most of this material and concentrate on the central issue of logical theory both for Abelard and for us, that is, on the nature of the relation of consequence, or following. Even with this limitation there is a great deal of ground to cover. Abelard sets out his theory of entailment and argument in two very extended and dense discussions both of which have suffered considerable textual corruption. The treatment of topics and hypothetical syllogisms in the *Dialectica*, is apparently the earlier. The other is the surviving fragment of Abelard's commentary on Boethius's *De topicis differentiis*, *Glossae super De topicis differentiis*, which seems to belong with his other commentaries on the works of the *logica vetus* published as the *Logica "ingredientibus."* The two expositions disagree on some crucial questions, but here I will restrict myself almost entirely to the discussion in the *Dialectica*."
28. ———. 2007. "Denying Conditionals: Abaelard and the Failure of Boethius' Account of the Hypothetical Syllogism." *Vivarium* no. 45:153-168.
29. ———. 2009. "Imposition and Essence: What's New in Abaelard' Theory of Meaning?" In *The Word in Medieval Logic, Theology and Psychology. Acts of the Xiiith*

International Colloquium of the Société Internationale Pour L'étude De La Philosophie Médiévale, Kyoto, 27 September - 1 October 2005, edited by Shimizu, Tetsuro and Burnett, Charles, 173-212. Turnhout: Brepols.

30. McLaughlin, Mary Martin. 1969. "Abelard's Conceptions of the Liberal Arts and Philosophy." In *Arts Libéraux Et Philosophie Au Moyen Age*, 523-530. Paris: Vrin.
31. Meinhardt, Helmut. 1981. "Die Philosophie Des Peter Abaelard." In *Die Renaissance Der Wissenschaften Im 12. Jahrhundert*, edited by Weimar, Peter, 107-121. Zürich: Artemis Verlag.
32. Mews, Constant J. 1984. "A Neglected Gloss on the *Isagoge* by Peter Abelard." *Freiburger Zeitschrift für Philosophie und Theologie* no. 31:35-55.
Reprinted as Essay II in: Constant J. Mews, *Abelard and his Legacy*.
"The authorship is examined of the anonymous "Glossae secundum vocales" on the "Isagoge" of Porphyry in m s Milan, Bibl. Ambrosiana m63 sup. ff. 73-81v along side known glosses of Abelard ("Logica ingredientibus"). Geyer's attribution of the work of a pupil is questioned. It is shown to contain a recension of Abelard's glosses on Porphyry transitional between "Ingredientibus" and "Nostrorum petitioni". Its discussion of identity and difference influences that of the "Theologia summi boni". "
33. ———. 1986. "On Dating the Works of Peter Abelard." *Archives d'Histoire Doctrinale et Littéraire du Moyen Age* no. 60:73-134.
Reprinted as Essay VII in: Constant J. Mews, *Abelard and his Legacy*.
34. ———. 1986. "The *Sententiae* of Peter Abelard." *Recherches de Théologie Ancienne et Médiévale* no. 52:130-183.
Reprinted as Essay VI in: Constant J. Mews, *Abelard and his Legacy*.
35. ———. 1987. "Aspects of the Evolution of Peter Abaelard's Thought on Signification and Predication." In *Gilbert De Poitiers Et Ses Contemporains. Aux Origines De La 'Logica*

Modernorum', edited by Jolivet, Jean and Libera, Alain de, 15-41. Napoli: Bibliopolis.

Actes du septième Symposium Européen d'histoire de la logique et de la sémantique médiévales, Poitiers, 17-22 Juin 1985.

Reprinted as Essay VIII in: Constant J. Mews, *Abelard and his Legacy*,

36. ———. 1992. "Nominalism and Theology before Abaelard: New Light on Roscelin of Compiègne." *Vivarium* no. 30:4-33.

Reprinted as Essay VII in: C. J. Mews, *Reason and Belief in the Age of Roscelin and Abelard*.

37. ———. 1994. "Philosophy and Theology 1100-1150: The Search for Harmony." In *Le XIIe Siècle: Mutations Et Renouveau En France Dans La Première Moitié Du XIIe Siècle*, edited by Gasparri, Françoise, 159-203. Paris: Léopard d'Or.

Reprinted as Essay II in: C. J. Mews, *Reason and Belief in the Age of Roscelin and Abelard*.

See in particular: *William of Champeaux and Peter Abelard* pp. 168-173.

38. ———. 1995. "Peter Abelard." In *Authors of the Middle Ages. Vol. II N° 5-6*, edited by Geary, Patrick J., 1-88. Aldershot: Ashgate.

39. ———. 2001. *Abelard and His Legacy*. Aldershot: Ashgate. Contents: I. The development of the *Theologia* of Peter Abelard; II. A neglected gloss on the *Isagoge* by Peter Abelard; III. Man's knowledge of God according to Peter Abelard; IV. The lists of heresies imputed to Peter Abelard; V. Peter Abelard's *Theologia Christiana* and *Theologia 'Scholarium'* re-examined; VI. The *Sententie* of Peter Abelard; VII. On dating the works of Peter Abelard; VIII. Aspects of the evolution of Peter Abaelard's thought on signification and predication; IX. Un lecteur de Jérôme au XIIe siècle: Pierre Abélard; X. Peter Abelard and the Enigma of *Dialogue*; Addenda; Indexes.

40. ———. 2002. *Reason and Belief in the Age of Roscelin and Abelard*. Aldershot: Ashgate.
41. ———. 2003. "Peter Abelard on Dialectic, Rhetoric, and the Principles of Argument." In *Rhetoric and Renewal in the Latin West 1100-1540. Essays in Honour of John O. Ward*, edited by Mews, Constant J., Nederman, Cary J. and Thomson, Rodney M., 37-53. Turnhout: Brepols.
42. ———. 2005. *Abelard and Heloise*. Oxford: Oxford University Press.

See the following Chapters:

2. The early years: Roscelin of Compiègne and William of Champeaux pp-21-42

"This chapter examines Abelard's intellectual debt to both the vocalist theories of Roscelin of Compiègne and William of Champeaux's teaching about dialectic in shaping his philosophical nominalism. By looking at the earliest records of Abelard's teaching of dialectic and glosses on Aristotle, Porphyry and Boethius, it observes how students identified him as an iconoclast teacher, who quickly provoked laughter by the examples that he chose. It traces how Abelard's early conflict with his teachers laid the foundation for the subsequent difficulties he would experience in his career."

3. Challenging the Tradition: the *Dialectica* pp. 43-57

"This chapter examines Abelard's *Dialectica*, his first major treatise on dialectic. The treatise is structured around an analysis both of the major parts of speech, categories and of different kinds of argument, categorical and hypothetical. It argues that a driving theme is Abelard's desire to counter the philosophically realist arguments presented by William of Champeaux."

5. Returning to *Logica* pp. 81-100

"This chapter examines the *Logica 'Ingredientibus'*, a series of commentaries on Porphyry, Aristotle, and Boethius more profound than any of his earlier glosses. I argue that in these commentaries Abelard adopts a much more profound theory of universals and of other parts of speech than in the

Dialectica. Rather than emphasizing differences of opinion with William of Champeaux, they demonstrate how far Abelard had come to distance himself from the arguments of Boethius. Instead of speaking uniquely about dialectic, he is now interested in logica, the arts of language in general."

43. Mews, Constant J., and Jolivet, Jean. 1990. "Peter Abelard and His Influence." In *Contemporary Philosophy. Vol. 6.1: Philosophy and Science in the Middle Ages*, edited by Guttorm, Floistad, 105-140. Amsterdam: Kluwer.
 "This chronicle is based on one prepared by Jean Jolivet, reviewing literature on Abelard up to 1972; I have updated it to take into account publications which have appeared 1972-1985" (p. 105).
44. Moonan, Lawrence. 1989. "Abelard's Use of the *Timaeus*." *Archives d'Histoire Doctrinale et Littéraire du Moyen Age* no. 56:7-90.
45. Nicolau d'Olwer, Lluís. 1945. "Sur La Date De La Dialectica D'Abélard." *Revue du Moyen Âge Latin* no. 1:375-390.
46. Normore, Calvin G. 1992. "Abelard and the School of the *Nominales*." *Vivarium* no. 30:80-96.
47. Nuchelmans, Gabriel. 1973. *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*. Amsterdam: North-Holland.
 "This is the first part of a history of those problems and theories in the domain of philosophical semantics which nowadays are commonly referred to as problems and theories about the nature and the status of propositions."
 See in particular chapter 9.
48. Panaccio, Claude. 1999. "Le Nominalisme Au Xiie Siècle." In *Signs and Signification. Vol. I*, edited by Gill, Harjeet Singh and Manetti, Giovanni, 17-33. New Delhi: Bahri Publications.
49. Pinzani, Roberto. 1983. "*Homerus Est Poeta - an Non*. Questioni Di Presupposizione Esistenziale Nella Logica Di Abelardo." *Annali del Dipartimento di Filosofia. Università di Bologna* no. 4:87-96.

50. ———. 1983. "Le "Propositiones Coniunctae Temporales" Nel *De Ypoteticis* Di Abelardo." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 253-257. Bologna: CLUEB.
51. ———. 1986. "Temi Filosofici Nella Logica Di Abelardo." *Annali di Discipline Filosofiche dell'Università di Bologna* no. 8:165-188.
52. ———. 1989. "Un Approccio Semantico Alla Dialettica Di Abelardo." In *Le Teorie Delle Modalità. Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Corsi, Giovanni, Mangione, Corrado and Mugnai, Massimo, 265-270. Bologna: CLUEB.
53. ———. 1991. "Oggetto E Significato Nella Dialettica Di Abelardo." *Medioevo. Rivista di storia della filosofia medievale* no. 17:125-138.
54. ———. 1992. *La Grammatica Logica Di Abelardo*. Parma: Università degli Studi di Parma.
55. ———. 1992. "Linguaggio E Teoria in Abelardo." *Philo-Logica* no. 1:79-94.
56. ———. 1993. "La Sintassi Logica Di Abelardo." *Philo-Logica* no. 2-3:91-112.
57. ———. 2003. *The Logical Grammar of Abelard*. Dordrecht: Kluwer.
58. Reiners, Jos. 1910. *Der Nominalismus in Der Frühscholastik. Ein Beitrag Zur Geschichte Der Universalienfrage Im Mittelalter; Nebst Einer Neuen Textausgabe Des Briefes Roscelins an Abälard*. Aschendorff: Münster.
59. Rijk, Lambertus Marie de. 1975. "La Signification De La Proposition (*Dictum Propositionis*) Chez Abélard." In *Pierre Abélard - Pierre Le Vénérable. Les Courants Philosophiques, Littéraires Et Artistiques En Occident Au Milieu Du XII Siècle*, edited by Jolivet, Jean and Louis, René, 547-555. Paris: Éditions du Centre national de la recherche scientifique. Actes et mémoires du Colloque International, Abbaye de Cluny, 2 au 9 juillet 1972.

Published also in: *Studia Mediewistyczne* 16, 1975 pp. 155-161.

Reprinted as chapter IV in: L. M. de Rijk - *Through language to reality: studies in medieval semantics and metaphysics* - Edited by Bos Egbert. Northampton: Variorum Reprints 1989.

"Cette communication se borne à un bref examen de la signification de la phrase complète (*propositio*) dans la logique de Pierre Abélard.

Il paraît utile de commencer par la définition du verbe signifier (*significare*) chez ce logicien.

'signifier' dit des mots (*dictiones*) c'est produire une intellection dans l'âme de l'auditeur (*Logica ingredientibus* 307, 30 ss.), tandis que le même verbe est également appliqué à la dénotation des choses extérieures (*ibid.*); dans ce dernier sens, le verbe est synonyme de *appellare*, *nominare*, *demonstrare*, *designare*.

'signifier' dit des phrases complètes (*propositiones*) c'est produire une intellection laquelle est formée par la liaison des intellections de ses parties (*dictiones*)." p. 547

"On peut conclure que selon Abélard le *dictum* n'est pas un objet qui serait indépendant de la pensée, mais plutôt le contenu de la pensée, c'est-à-dire une *intellection objectivée*, qui correspond soit à un état de choses réel, soit à un état de choses seulement possible (*Dial. II*, 205, 28-30: *id dicimus quod id quod dicit hec propositio 'Socrates est homo', est unum de his que natura patitur esse*), soit un état de choses tout à fait impossible (*Dial. II*, 158, 7-9: la proposition '*Socrates est lapis*' ne reflète pas une *inherentia* de Socrate et de pierre, ni '*Socrates non est lapis*' leur rémotion).

(...)

Ainsi, l'existence qu'établit la proposition en parlant, n'est pas une existence réelle, mais, pourrait-on dire, une existence *parlée*, ou plutôt, une existence *pensée* ou *logique*.

Employant la distinction bien connue du XIV^e siècle (présentée notamment par Jacques d'Ascoli, Thomas d'York, Pierre Thomae):

res: 1) *extra animam* (chose extérieure); 2) *in anima*: a) subjective (= *acte* de l'intellection comme tel) b) objective (*contenu* de l'intellection).

on peut dire qu'Abélard a essayé, à sa façon, de montrer que le *dictum*, de la proposition, loin d'être une chose extérieure (*res extra animam*) est une chose qui doit son existence à l'âme ou à l'intellection (*res in anima*), mais qu'il faut en même temps bien le distinguer de l'acte de l'intellection pris comme tel (*res in anima subjective*), et reconnaître, sa propre identité dans le *contenu objectif* de l'intellection. Par là, le *dictum* du grand logicien du XII^e siècle semble être d'une nature logique par excellence." pp. 554-555. (notes omitted)

60. ———. 1980. "The Semantical Impact of Abailard's Solution of the Problem of Universals." In *Petrus Abaelardus (1079-1142). Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 139-151. Trier: Paulinus-Verlag.
Reprinted as chapter III in: L. M. de Rijk, *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*, Edited by Bos Egbert, Northampton: Variorum Reprints 1989.
61. ———. 1980. "Peter Abälard (1079-1142), Meister Und Opfer Des Scharfsinns." In *Petrus Abaelardus, 1079-1142. Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 125-138. Trier: Paulinus-Verlag.
Conference at the Trierer Theologischen Fakultät in Trier (18 April 1979).
Reprinted as chapter II in: L. M. de Rijk - *Through language to reality: studies in medieval semantics and metaphysics* - Edited by Bos Egbert. Northampton: Variorum Reprints 1989.
62. ———. 1981. "Abailard's Semantic Views in the Light of Later Developments." In *English Logic and Semantics from*

the End of the 12th Century to the Time of Ockham and Burleigh, edited by Braakhuis, Henk A.G., Henri, Kneepkens Corneille and Rijk, Lambertus Marie de, 1-58. Nijmegen: Ingenium Publishers.

Acts of the 4th European Symposium of medieval logic and semantics. Leiden-Nijmegen, 23-27 April 1979.

Reprinted as chapter VI in: L. M. de Rijk, *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*, Edited by Bos Egbert, Northampton: Variorum Reprints 1989.

63. ———. 1985. "Martin M. Tweedale on Abailard: Some Criticisms of a Fascinating Venture." *Vivarium* no. 23:81-97.

"Mr. Tweedale's study is bound to give any of his readers the firm impression that, as logician, Peter Abailard has accomplished a tremendous achievement. Unfortunately, however, Tweedale, (...) is on the wrong track in claiming-throughout his study that the modern interpreter has to 'ferret' Abailard's answers out of 'rather obscure passages' (p. 7), and that he is inconsistent (p. X and *passim*). Tweedale has failed to appreciate Abailard's lucidity and clear language. He has missed the point several times and more than once this is due to his defective knowledge of Latin. However, let me not move too hurriedly to my conclusion.

In writing this book, the author had two main objectives in mind, as we learn from the *Preface*. First, 'to present in a form easily accessible to professional philosophers, theologians and historians those scattered portions of Abailard's logical writings which seem to record a very original scrutiny of the foundations of logic and in particular the problem of universals'. Secondly, 'to interpret the texts in a way that would connect them with the ancient tradition and also make them intelligible to contemporary philosophers.' So chapters I and II try to give an insight into the classical and post-classical background. The core of the

essay is to be found in Chapters III-V; Chapter VI contains a comparison between Abailard and Frege.

Without doubt, the author has succeeded in enlarging the modern scholar's acquaintance with, and admiration of, Abailard as a logician and early Medieval philosopher and theologian. Even someone who has had only a glimpse of the contents of this rich essay, cannot help experiencing a kind of thrill on realising that he is meeting in Peter Abailard a remarkable and original thinker.

However, to write a successful book something more is needed. To my mind the author was heavily hampered in realising the two objectives he had set himself, as a result of his poor knowledge of (both classical and Medieval) Latin grammar and syntax. Sometimes his judgment of Abailard's achievements is incorrect, for no other reason than his inability to correctly read Abailard's concise language." pp. 81-82

64. ———. 1986. "Peter Abelard's Semantics and His Doctrine of Being." *Vivarium* no. 24:85-127.
65. ———. 1992. "Peter Abelard (1079-1142)." In *Philosophy of Language/Sprachphilosophie/La Philosophie Du Langage. Eine Internationales Handbuch Zeitgenössischer Forschung*, edited by Dascal, Marcelo, Gerhardus, Dietfried, Lorenz, Kuno and Meggle, Georg, 290-296. Berlin: Walter de Gruyter.
First volume
66. ———. 2003. "The Logic of Indefinite Names in Boethius, Abelard, Duns Scotus, and Radulphus Brito." In *Aristotle's Peri Hermeneias in the Latin Middle Ages. Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G. and Henri, Kneepkens Corneille, 207-233. Groningen: Ingenium Publishers.
67. Rosier-Catach, Irène. 1999. "La Notion De *Translatio*, Le Principe De Compositionnalité Et L'analyse De La Prédication Accidentelle Chez Abélard." In *Langage, Sciences, Philosophie Au Xiie Siècle*, edited by Biard, Joël, 125-164. Paris: Vrin.

68. ———. 2000. "La Sémantique D'Abélard En Contexte (1) : La Notion De 'Translatio'." *Annuaire de l'Ecole Pratique des Hautes Etudes (Section des Sciences Religieuses)* no. 107:361-367.
69. ———. 2001. "La Sémantique D'Abélard En Contexte (2) : Sur Le Verbe Substantif Et La Prédication." *Annuaire de l'Ecole Pratique des Hautes Etudes (Section des Sciences Religieuses)* no. 108:361-367.
70. ———. 2002. "Abelard and the Meaning of the Propositions." In *Signification in Language and Culture*, edited by Gill, Harjeet Singh, 23-49. Shimla: Indian Institute of Advanced Study.
Acts of the colloquium held at Shimla, India, October 2001.
71. ———. 2003. "Variations Médiévales Sur L'opposition Entre Signification "Ad Placitum" Et Signification Naturelle." In *Aristotle's Peri Hermeneias in the Latin Middle Ages. Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G. and Henri, Kneepkens Corneille, 165-205. Groningen: Ingenium Publishers.
72. ———. 2003. "Abélard Et Les Grammairiens: Sur La Définition Du Verbe Et La Notion D'inhérence." In *La Tradition Vive. Mélanges D'histoire Des Textes En L'honneur De Louis Holtz*, edited by Pierre, Lardet, 143-159. Turnhout: Brepols.
73. ———. 2003. "Priscien, Boèce, Les *Glosulae in Priscianum*, Abélard: Les Enjeux Des Discussions Autour De La Notion De Consignification." *Histoire Épistémologie Langage* no. 25:55-84.
"The term *syncategorema*, translated by *consignificantia*, only exists in Greek in the Latin *Institutiones* of the grammarian Priscien, and is introduced in the XIIth century in the grammatical commentaries, the couple of terms *syncategorema* / *categorema* emerging even later, at the end of the XIIth century. Thus the discussions first focus on the terms connected to *consignificare*. The antique heritage is multiple and diversified. Priscien uses, in a contradictory way, a functional criterium (a part which is not one of the

main parts of speech is consignifying), a semantic criterium (to be a part of speech is to indicate a concept of the mind), a criterium of autonomous meaning (something is said to consignify if it does not signify by itself). Boethius uses the notion in five different ways, applying to various terms or morphemes: prepositions and conjunctions, parts of a compound, tense, the verb to be, quantifiers. The *Glosulae* on Priscian, at the end of the XIth century, and especially in the later revision by William of Champeaux, claim that the consignifying parts signify the thing signified by the word to which they are attached. Abelard, reading those gloses, hesitates: the grammarian's solution is not satisfactory, but if, as Boethius wants it, the consignifying parts did not have any meaning, then it would not be possible to explain the semantic role they have in the intellection of the whole proposition. He will thus devise a really innovative solution, which he applies first to the copula and then extends to the other consignifying parts: they correspond to a *mental act*."

74. ———. 2003. "Abélard Et Les Grammairiens: Sur Le Verbe Substantif Et La Prédication." *Vivarium* no. 41:175-248.
75. ———. 2004. "Les Discussions Sur Le Signifié Des Propositions Chez Abélard Et Ses Contemporains." In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 1-34. Firenze: Olschki.
Acts of the 14th European Symposium on Medieval Logic and Semantics - Rome, June 11-15, 2002
76. ———. 2007. "Priscian on Divine Ideas and Mental Conceptions: The Discussions in the *Glosulae in Priscianum*, the *Notae Dunelmenses*, William of Champeaux and Abelard." *Vivarium* no. 45:219-237.
"Priscian's *Institutiones Grammaticae*, which rely on Stoic and Neoplatonic sources, constituted an important, although quite neglected, link in the chain of transmission of ancient philosophy in the Middle Ages. There is, in particular, a passage where Priscian discusses the vexed

claim that common names can be proper names of the universal species and where he talks about the ideas existing in the divine mind. At the beginning of the 12th century, the anonymous *Glosulae super Priscianum* and the *Notae Dunelmenses*, which heavily quote William of Champeaux (as master G.), interpret the passage in the context of a growing interest in the problem of universals, raising semantic as well as ontological questions, and introducing a Platonic view on universals in the discussions on the signification of the noun. Moreover, this same passage will be used by Abelard to elaborate one of his opinions about the signification of universal or common names-that they signify "mental conceptions".

77. Schüssler, Ursula. 1973. "Das Verhältnis Der Dialektik Peter Abaelards Zur Modernen Logik." *Mittellateinisches Jahrbuch* no. 9:39-47.

78. Seuren, Pieter Albertus Maria. 2009. *Language in Cognition*. New York: Oxford University Press.
Volume I of *Language from Within*.

Summary of the two volumes: "Volume I begins by setting up certain central principles of the natural ontology according to which humans develop a theory of the actual world with the help of nonactual, thought-up 'worlds' or, better, situations. It then presents a view of how language expresses thoughts developed in terms of this natural ontology, with an emphasis on the mechanism of reference not only to extensional, actually existing objects but also to intensional, thought-up objects. An important aspect, elaborated in Chapter 4, is the fact that human communication does not, as is usually thought, consist in the transfer of propositionally structured information, but, rather, in a socially binding form of position-taking with respect to such information.

We then go on to a discussion of the general semantic aspects of language in the context of the total ecological 'architecture' of language, mind, and world.

This leads to a cursory tour of lexical meaning and of the ways lexical meanings are structured so as to make linguistic utterances fit into given contexts or discourses. Concentrating again on propositional content, basic principles of logic are introduced in Volume II, although not in the traditional fashion. A new and unconventional view of logic is developed there, in which the logical constants are treated as lexical items, in fact as lexical predicates, with the special property that their meanings allow for the computation of entailments. It is argued that this reduction of logic to lexical meaning shows better than anything else the relevance of logic and logical analysis for the study of linguistic meaning. This point of view is reinforced in Chapter 10 of Volume II, where it is shown that presuppositions are a general semantic property of lexical predicates and where it is argued that a proper theory of presuppositions requires a trivalent presuppositional logic. We then concentrate, in Chapter 3 of Volume II, on a reconstruction of the natural logic which nature may be taken to have instilled into human cognition. This reconstructed logic is then placed in a historical perspective, which shows that basic natural predicate logic is, in fact, largely but not entirely identical with the logic proposed and defended by the Edinburgh philosopher William Hamilton in the nineteenth century. Aristotelian predicate logic is dissected in Chapter 5 of Volume II and reconstructed on the basis of Aristotle's own texts, whereby it is found that Aristotle was not guilty of the logical error of undue existential import but left his logic incomplete. It is also found that the twelfth-century French philosopher Abelard completed Aristotelian predicate calculus in Aristotle's spirit, avoiding undue existential import in a way that leads to a logically sound system that is more powerful than standard modern predicate logic. Chapter 4 of Volume II shows that traditional predicate logic, with its undue existential import, has maximal logical

power, in stark contrast to standard modern predicate logic, which has hardly any logical power left. It also shows that the logically sound Abelardian system of predicate logic has much greater logical power than standard modern predicate calculus, while still staying within the bounds of a strictly extensional ontology - a fact which raises questions regarding the status of standard modern predicate calculus in mathematics and mathematical logic.

In Chapter 6 of Volume II it is shown that traditional predicate logic is also much more functional from the point of view of transmitting information than its standard modern counterpart. The fact that, as a matter of principle, linguistic utterances need anchoring in context before they can be keyed to a given situation and the objects in it, is first discussed in Chapter 3, in the context of Aristotle's concept of proposition.

Chapters 7 to 9 of Volume II are devoted to a further theoretical elaboration of the context-sensitivity of natural-language sentences and utterances. The notion of presupposition is central in this respect. Chapter 10 of Volume II is devoted to the logical aspects of the context-sensitivity of language. A presuppositional logic is developed for both the propositional operators and the universal and existential quantifiers. In this logic, a distinction is made between, on the one hand, a default, discourse-restricted area of metalogical relations, which is taken to have some degree of psychological reality, and a purely theoretical area which has no psychological reality but is presented merely to show the character and properties of the logic involved." (pp. 7-8).

79. ———. 2010. *The Logic of Language*. New York: Oxford University Press.
Volume II of *Language from Within*.
80. Shimizu, Tetsuro. 1995. "From Vocalism to Nominalism: Progression in Abaelard's Theory of Signification." *Didascalía* no. 1:15-46.

81. ———. 1999. "Words and Concepts in Anselm Et Abelard." In *Langage, Sciences, Philosophie Au Xiie Siècle*, edited by Biard, Joël, 177-197. Paris: Vrin.
82. ———. 2006. "The Place of *Intellectus* in the Theory of Signification by Abelard and *Ars Meliduna*." In *Intellect Et Imagination Dans La Philosophie Médiévale / Intellect and Imagination in Medieval Philosophy / Intelecto E Imaginação Na Filosofia Medieval / Actes Du Xie Congrès International De Philosophie Médiévale De La Société Internationale Pour L'étude De La Philosophie Médiévale (S.I.E.P.M.),: Porto, Du 26 Au 31 Août 2002*, edited by Pacheco, Maria Cândida and Meirinhos, José F., 927-939. Turnhout: Brepols.

"The main concern of the present paper is with some theories of *significatio* in the 12th century, and how *intellectus* and *imaginatio* play a role in them, but not in others. In the present paper, I shall restrict my attention to Abelard and *Ars meliduna*, hoping to contrast them.

ABELARD'S THEORY OF SIGNIFICATION

As for Abelard's theory, I will make some comments concerning the present subject, with a summary of the conclusions that I have described elsewhere (1). In *Glosse super Porphyrium* ("Ingredientibus"), Abelard's theory of signification bound up with his explanation and revision of the vocalist theory of a universal. He starts with the definition of the universal, which involves the idea of *impositio* and *nominatio*, and so far the theory contains the name-things relationship only. Abelard, however, also shows its difficulties, by raising the two cardinal aspects of signification: the first concerns *nominatio*, or *significatio* in the broader sense, while the second, the *intellectus* that a name produces in the hearer, and this act of a name is *significatio* in the strict sense.

Then he tries to solve the difficulties and presents his revision of the theory regarding each of the two aspects (2)."
(p. 927)

(...)

CONCLUSION

In sum, we can contrast Abelard and the *Ars meliduna* as for how *intellectus* are treated with reference to signification. For both of them, a *status* is some thing or some fact in the world, independent of *intellectus*, though it might be an object of *intellectus*, but by no means a mental entity. This is the only point on which both will agree. To begin with, they oppose each other as for what is the *status*. For Abelard, *status* is *causa impositionis*, while for the *Ars meliduna*, it is the object of signification. On the contrary, *intellectus* is the object of signification for Abelard, while it is the *causa impositionis* for the *Ars meliduna*. Abelard thinks of *intellectus* from the hearer's point of view basing himself on Aristotle's *De interpretatione*, so that he attends to the act of producing *intellectus* in the hearer, while the *Ars meliduna* thinks of *intellectus* from the speaker's point of view, basing itself on Priscian's grammar, so that it attends to the vocal words as revealing the speaker's *intellectus*. Thus the *Ars meliduna* insists on the reverse of what Abelard insisted on." (p. 939).

(1) Shimizu, T., From Vocalism to Nominalism: Progression in Abaelard's Theory of Signification, *Didascalica*, 1,15-46.

(2) Abaelardus, *Glossae super Porphyrium*, hrsg. von Geyer, B., *Peter Abaelards philosophische Schriften* I, 1933: 16, 25-30; 18,4-19,20.

83. ———. 2006. "Word and *Esse* in Anselm and Abelard." In *Anselm and Abelard. Investigations and Iuxtapositions*, edited by Gasper, Giles E.M. and Helmut, Kohlenberger, 179-195. Toronto: Pontifical Institute of Mediaeval Studies. "The medieval controversy about the nature of universals was about nothing other than the relationship between word and thing. In order to understand the history and essence of the controversy, it is most important to examine the thoughts of the two key figures: Anselm and Abelard,

respectively the revered authority among the realists (*reales*), and the founder of the nominalists (*nominales*). Though there certainly lies a crucial divergence in their views, nevertheless Abelard, as well as contemporary realists, owes many of his ideas, conceptions and terms to Anselm. Having examined elsewhere their views on the relationship between word and concept, I would like to examine here those on the relationship between word and the world. Through this examination I shall show how Anselm's metaphysical investigation about God's locution was transformed into Abelard's logical one about human words.

In the following, I shall first examine Anselm's theory of God's locution, showing how he explains it in terms of human language and in its relationship with created things, by examining some passages from his *Monologion* and *De grammatico*.

Secondly, I shall focus my attention on Abelard's corresponding theories in his two commentaries on Porphyry, *Glosse 'ingredientibus'* and *Glossule 'nostrorum petitioni sociorum'*." p. 179

"Conclusion. The terms and concepts that Anselm proposed in his meditation on God's locution as the origin of created things constitute a common vocabulary for the controversy about universals. Even Abelard, the founder of nominalism, when refuting the realists, uses these terms and concepts to differentiate himself from them. Such terms, among others, are *essentia*, *esse hominem*, and *status hominis*, which is Abelard's substitute for Anselm's *esse hominis*. Again, Anselm's idea of *significatio* as an act of producing understanding in the hearer becomes the main idea in Abelard's semantics. We can, however, recognize elements of discrepancy between them as well as these examples of agreement. Abelard excludes *essentia* from his theory of universals, separating it from *esse hominem*, and shifts the idea of *esse hominis* to the one of *status hominis*. Again,

Anselm's *intellectus* produced by a word is the understanding by which an *essentia*, or something's *esse*, is understood, and the latter is based on the *principalis essentia* in God, while Abelard's is separated from *essentia* and even from the facts in reality (*status*), in his later theory, though connected in his earlier one. It seems that Abelard cultivates a new realm of conceptions independent of things' *essentia*; this realm is properly for human beings, not for God, the creator. In this sense, 'Deus homo' happened between Anselm and Abelard." p. 195

84. Spencer, Mark K. 2011. "Abelard on *Status* and Their Relation to Universals. A Husserlian Interpretation." *International Philosophical Quarterly* no. 51:223-240. "The discussion of universals in Peter Abelard's *Logica 'Ingredientibus'* has been interpreted in many ways. Of particular controversy has been the proper way to interpret his use of the term *status*. In this paper I offer an interpretation of *status* by comparing Abelard's account of knowledge of universals to Edmund Husserl's presentations of categorial and eidetic intuition. I argue that *status* is meant to be understood as something like an ideal object, in Husserl's sense of the term. First, I present Abelard's discussion of *status* and distinguish this term from universals, things, acts of understanding, and forms. Next, I consider Husserl's account of categorial and eidetic intuition. Finally, I draw parallels between the two while showing how an interpretation of *status* as ideal object overcomes the interpretive problems encountered by other commentators on Abelard."
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87. Stump, Eleonore. 1988. "Logic in the Early Twelfth Century." In *Meaning and Inference in Medieval Philosophy*, edited by Norman, Kretzmann, 31-55. Dordrecht: Kluwer.
- "A radical change took place in the treatment of logic in general and of dialectical topics in particular in the Twelfth century. In this paper I try to shed some light on the nature of that change by looking at discussions of dialectic in a particular group of Twelfth-century treatises. On the basis of that analysis I make some suggestions about Abelard's influence on and originality in the developments of logic in the Twelfth century."
88. ———. 1989. *Dialectic and Its Place in the Development of Medieval Logic*. Ithaca: Cornell University Press.
Chapter 5: *Abelard on the Topics* (pp. 89-109) and Chapter 6: *Logic in the Early Twelfth Century* (pp. 111-133).
89. Sweeney, Eileen C. 2006. *Logic, Theology, and Poetry in Boethius, Abelard, and Alan of Lille. Words in the Absence of Things*. New York: Palgrave Macmillan.
Chapter 2: *Abelard: a Twelfth-Century Hermeneutics of Suspicion* pp. 63-126.
- "If Boethius's goal in his logical commentaries is to distinguish in order to unite, Abelard's goal seems simply to distinguish. Boethius's construction of a narrative from Aristotle's cryptic remarks in the *Peri hermeneias* is one Abelard follows carefully and also criticizes, finding Boethius's connections more a confusion than a synthesis of the elements in Aristotle's text. He argues that Boethius constructs a unity that is inauthentic, which asserts a happy ending, a union between language, understanding, and the

world that is not quite achievable. His own corpus of commentaries breaks down this narrative to consider its parts much more carefully.

Abelard's perception of gaps in Boethius's narrative and his desire to take it apart is signaled in many ways. It comes across at a general and formal level in his account of the relationship between the *Categories* and *Peri hermeneias* in his later glosses on Porphyry (known as the *Logica nostrorum petitioni sociorum*). In these later glosses, he argues that Aristotle's two works are not two pieces of a single narrative, an account of words leading to one of sentences, as Boethius claims (and as was a tradition Abelard himself follows in his earlier glosses), but the separate consideration of words insofar as they signify things (the *Categories*) and words insofar as they signify *intellectus* (the *Peri hermeneias*) (LNPS 508. 32-37).

Beginning with this division, then, I would like to consider Abelard's account of the distinction between words and things in the earlier *Glosses on Porphyry* and the later gloss on Porphyry, and between words and understanding in the *Commentary on the Peri hermeneias*. (10) I will attempt to examine the kind of a narrative Abelard constructs, insofar as he constructs any, of the processes of abstraction and sentence construction." (pp. 66-67)

(10) See Constant Mews, "On Dating the Works of Peter Abelard," ADHLMA 52 (1985): 73-134; Marenbon, *Peter Abelard*, pp. 40-53; and L. M. de Rijk, "Peter Abelard's Semantics and His Doctrine of Being," *Vivarium* 24, 2 (1986): 103-108. It is widely agreed that the *Glosses on Porphyry* and *Commentary on the Peri hermeneias*, both part of the *Logica ingredientibus*, are earlier (1118-20) than the later glosses on Porphyry (here: LNPS) and *De intellectibus* (from the mid-1120s).

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92. ———. 2006. *Medieval Modal Systems. Problems and
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Questions of Form and Content 53; Peter von Moos: *Post
festum* -- Was kommt nach der Authentizitäts-debatte über
die Briefe Abaelards und Heloises? 75;
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94. Thompson, Augustine. 1995. "The Debate on Universals before Peter Abelard." *Journal of the History of Philosophy* no. 33:409-429.

95. Tweedale, Martin. 1967. "Abailard and Non-Things." *Journal of the History of Philosophy* no. 5:329-342.
"I explain how Abailard thinks he can justify saying that certain items, particularly what is said by a sentence, are not things. His grounds are that they are never referred to by any noun. He holds that nominalizations of sentences and of verbs, which appear to be nouns with such a reference, are not logically speaking nouns, and sentences which have a

nominalization for a grammatical subject do not have any logical subject."

96. ———. 1976. *Abailard on Universals*. Amsterdam: North-Holland.

"This work shows how Abailard elaborated and defended the view that universals are words, avoided the pitfalls of an image theory of thinking, and propounded a theory of "status" and "dicta" as objects of thought without treating them as subjects of predication. His defense of these views is shown to depend on certain fundamental departures from the Aristotelian term logic of his day, including a proposal for subjectless propositions, the treatment of copula plus predicate noun as equivalent to a simple verb, and a transformation of the 'is' of existence into the 'is' of predication."

97. ———. 1980. "Abailard and Ockham: Contrasting Defences of Nominalism." *Theoria* no. 46:106-122.

"Although both Ockham and Abailard admit that science is of necessary truths and is about what is common to many rather than concrete particulars, Ockham claims knowledge has genuine objects, namely mental signs, while Abailard denies that knowledge has genuine objects. Ockham's position, it turns out, cannot do justice to the objectivity of science and is in difficulties when it comes to explaining how we know these mental signs. Neither problem afflicts Abailard's view."

98. ———. 1982. "Abelard and the Culmination of the Old Logic." In *The Cambridge History of Later Medieval Philosophy. From the Rediscovery of Aristotle to the Disintegration of Scholasticism, 1100-1600*, edited by Norman, Kretzmann, Kenny, Anthony and Pinborg, Jan, 143-157. Cambridge: Cambridge University Press.

99. ———. 1987. "Reply to Professor De Rijk's "Martin M. Tweedale on Abailard: Some Criticisms of a Fascinating Venture"." *Vivarium* no. 25:3-22.

"I reply to professor de Rijk's criticisms of my book 'Abailard on universals'. First I admit serious errors in some of my translations and offering some revisions of those. Second, I defend some of my other translations as well as my interpretation of what Abailard intends by 'essentia' and my contention that Abailard's doctrine on universals is not a form of conceptualism."

100. ———. 1992. "Logic (I): From the Late Eleventh Century to the Time of Abelard." In *A History of Twelfth-Century Western Philosophy*, edited by Dronke, Peter, 196-226. Cambridge: Cambridge University Press.
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104. Wade, Francis C. 1963. "Abelard and Individuality." In *Die Metaphysik Im Mittelalter: Ihr Ursprung Und Ihre Bedeutung. Vorträge Des 2. Internationalen Kongresses Für Mittelalterliche Philosophie, Köln, 31. August-6. September 1961*, edited by Wilpert, Paul, 165-171. Berlin: Walter de Gruyter.
Miscellanea Mediaevalia, vol. II.

"Peter Abelard in his *"Logica ingredientibus"* proposed to solve the problems of genus and species which Porphyry had refused to answer in his introduction to the *"Categories"* of Aristotle. The thesis of this paper is that Abelard, in spite of his diligent enquiry, could not explain genus and species owing to his unanalyzed conception of an individual. Though Abelard failed in his inquiry, he did not fail philosophy, for he held firmly to the data: that existents are individuals, that we have universal knowledge, and that universal knowledge is valid knowledge."

105. Wciórka, Wojciech. 2008. "Abelard on Porphyry's Definition of Accident." *Mediaevalia philosophica Polonorum. Bulletin d'information concernant les recherches sur la philosophie médiévale en Pologne* no. 37:168-181.
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107. ———. 1993. "Modalität Und Konsequenz. Zur Logischen Struktur Eines Theologischen Arguments in Peter Abaelards *Dialectica*." In *Argumentations-Theorie. Scholastische Forschungen Zu Den Logischen Und Semantischen Regeln Korrekten Folgerns*, edited by Jacobi, Klaus, 695-706. Leiden: E. J. Brill.
108. Wenin, Christian. 1982. "La Signification Des Universaux Chez Abélard." *Revue Philosophique de Louvain* no. 80:414-448.

"The text in which Abelard attempts to reply, before 1120, to the questions left open by Porphyry on the statute of genera and species furnished a reflection on the meaning of the universal term, understood since Aristotle as the possible predicate of a proposition true of several subjects taken individually. Abelard refuses all the kinds of realism which he knows. The universal word ("*vox, simplex sermo*") has, however, more than the physical aspect of an uttered sound; it has the three meanings of: the individual things to the extent that they resemble each other, the intellectual activity

of man and the common conception with the aid of which it can function."

109. Wilks, Ian. 1993. *The Logic of Abelard's Dialectica*, University of Toronto. Unpublished Ph.D. dissertation.
110. ———. 1998. "Peter Abelard and the Metaphysics of Essential Predication." *Journal of the History of Philosophy* no. 36:365-385.
111. ———. 2007. "Abelard on Context and Signification." *American Catholic Philosophical Quarterly* no. 81:189-208. "Abelard maintains that individual words in a sentence represent distinct semantic units of its overall meaning. He employs two strategies to defend this position in the face of troublesome counterexamples. One strategy-the earlier of the two-sacrifices normal intuitions about what a word is, often labeling what seem to be words as non-signifying syllables. The later strategy invokes a rather fluid conception of what the signification of a word is, allowing this signification considerable latitude to alter under the contextual influence of other words. This evolution of strategy is linked to a new willingness on Abelard's part to adopt the principle of charity in interpreting sentences; this approach presumes the truth of the statement, and tries to find an interpretation which bears that presumption out. This new willingness to adopt the principle is in turn linked to Abelard's developing vocation as an interpreter of biblical texts."
112. ———. 2008. "Peter Abelard and His Contemporaries." In *Mediaeval and Renaissance Logic*, edited by Gabbay, Dov and Woods, John, 83-156. Amsterdam: Elsevier. Handbook of the History of Logic, Vol. 2. "It is standard practice to develop an account of categorical logic which starts with a discussion of words, and moves through categorical propositions to the categorical syllogisms themselves. Abelard consciously adopts a parallel course for the logic of hypotheticals by beginning with a

treatment of topics and hypothetical propositions. In general we can think of Abelard's development of material as falling along these two axes: discussion of words and categorical propositions leading to categorical syllogisms; and then discussion of topics and hypothetical propositions leading to hypothetical syllogisms. This way of organizing material is overtly embraced by Abelard in the *Dialectica*, in his attempt to depart from the commentary format. So it can be taken as representing his most basic intuitions on how the subject matter of logic should be organized.

I will structure my discussion below accordingly. Part 1 deals with words, categorical propositions and categorical syllogisms. Part 2 deals with topics, hypothetical propositions and hypothetical syllogisms. These two parts complete the treatment of Abelard, and Part 3 turns to his contemporaries and their schools." (pp. 84-85).

113. Wöhler, Hans-Ulrich. 1979. "Zur Philosophischen Position Des Nominalisten Petrus Abaelard. Aus Anlass Seines 900. Geburtstag." *Deutsche Zeitschrift für Philosophie* no. 27:673-683.

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A Reply to Mews." *Vivarium* no. 36:135-151.

3. Bagge, Sverre. 1993. "The Autobiography of Abelard and Medieval Individualism." *Journal of Medieval History* no. 19:327-350.

Abstract: "This article discusses Abelard's *Historia Calamitatum* in connection with the debate on 'the individuar or 'individualism' in the Middle Ages, which has been going on between adherents of 'the Renaissance of the Twelfth Century' and scholars placing the emergence of the modern individual in more recent periods. The conclusion largely supports the latter point of view. Abelard does not tell a continuous story of his life, he does not describe a conversion or a new understanding of his own self as the result of his tragic experience and, as an intellectual, he does not emphasize his own independent thinking in opposition to his surroundings. By contrast, he understands his own life through models derived from sacred history, according to the contemporary idea of typology. However, his vivid description of the tragic events of his life and of his own reactions to them contains a strong element of subjectivity and his emphasis on merit rather than status when competing with other intellectuals is in a certain sense individualistic.

In this respect Abelard may also be regarded as representative of more widespread attitudes in contemporary scholarly milieu. Finally, it must be noted that similar objections can be raised against renaissance or early modern individualism as the ones adduced here against regarding *Historia Calamitatum* as an expression of medieval individualism."

4. Brower, Jeffrey E., and Guilfooy, Kevin, eds. 2004. *The Cambridge Companion to Abelard*. Cambridge: Cambridge University Press.

Contents: List of contributors XI; Method of citation and abbreviations XIV; Acknowledgments XVII; Chronology XVIII; Jeffrey E. Brower and Kevin Guilfooy: Introduction 1; 1. John Marenbon: Life, milieu, and intellectual contexts 13;

2. Winthrop Wetherbee: Literary works 45; 3. Peter King: Metaphysics 65; 4. Klaus Jacobi: Philosophy of language 126; 5. Christopher J. Martin: Logic 158; 6. Kevin Guilfooy: Mind and cognition 200; 7. Jeffrey E. Brower: Trinity 223; 8. Thomas Williams: Sin, grace and redemption 258; 9. William E. Mann: Ethics 279; 10. Yukio Iwakuma: Influence 305; List of Abelard's writings 336; Bibliography 341; Index 357-362.
5. Burnett, C. S. F. 1988. "A new text for the "School of Peter Abelard" Dossier?" *Archives d'Histoire Doctrinale et Littéraire du Moyen Âge* no. 55:7-21.
6. Buytaert, Eligius M., ed. 1974. *Peter Abelard. Proceedings of the International Conference: Louvain, May 10-12, 1971*. Leuven: University Press.
Contents: Preface VII Programme VIII; List of members XI-XIV; G. Verbeke: Introductory Conference: Peter Abelard and the Concept of Subjectivity 1; L. Engels: Abélard écrivain 12; T. Gregory: Abélard et Platon 38; D. E. Luscombe: The *Ethics* of Abelard: Some Further Considerations 65; M. Kurdzialek: Beurteilung der Philosophie im "Dialogus inter Philosophum, Iudaeum et Christianum" 85; R. Thomas: Die meditative Dialektik im "Dialogus inter Philosophum, Iudaeum et Christianum" 99; R. Peppermüller: Exegetische Traditionen and theologische Neuansätze in Abaelards Kommentar zum Römerbrief 116; E. M. Buytaert: Abelard's Trinitarian Doctrine 127; M. T. Beonio-Brocchieri Fumagalli: La relation entre logique, physique et théologie 153; J. Jolivet: Comparaison des théories du langage chez Abélard et chez les Nominalistes du XIVe siècle 163; Index Auctorum 179-181.
7. Cameron, Margaret. 2019. "Peter Abelard on mental perception." In *Philosophy of Mind in the Early and High Middle Ages*, edited by Cameron, Margaret, 18-34. London - New York: Routledge.
The History of the Philosophy of Mind, Volume 2.

8. Clanchy, Michael T. 1990. "Abelard's mockery of St Anselm." *The Journal of Ecclesiastical History* no. 41:1-23. Abstract: "Every reader of Abelard's *Historia Calamitatum*, the 'story of his misfortunes', knows how he mocked his master, Anselm of Laon. What has not been made clear is that he mocked in a comparable way a master of even greater standing, St Anselm, archbishop of Canterbury. The reason why this latter attack has not been emphasised is that it appears in one version only of Abelard's *Theologia*, and its interpretation as mockery depends on detailed scrutiny. Abelard delighted in jokes, particularly when they were dangerous. 'He cannot restrain his laughter,' St Bernard warned, 'listen to his guffaws.' Jokes depend so much for their effect upon tone and context that it is difficult for an historian to keep an ear out for them when he only has formal texts as evidence; furthermore, a joke loses its cutting edge once it has been laboriously explained. Nevertheless, Abelard's mockery of St Anselm does have to be explained step by step if it is to be appreciated at all. The circumstances are as follows."
9. ———. 2008. *Abelard. A Medieval Life*. Malden: Blackwell. Contents: Preface XI; Map of France in Abelard's time XIV; Map of Paris in Abelard's time XVI; 1. The Story of Abelard 1; Part I. *Scientia* - 'Knowledge'. Chronological table 1079-1117 24; 2. *Scientia* - 'Knowledge' 25; 3. Literate 41; 4 Master 65; 5. Logician 95; Part II. *Experimentum* - 'Experience'. Chronological table 1117-1118 120; 6. *Experimentum* - 'Experience' 121; 7. Knight 130; 8. Lover 149; 9. Man 173; Part III. *Religio* - 'Religion'. Chronological table 1118-1142 204; 10. *Religio* - 'Religion' 207; 11. Monk 220; 12. Theologian 264; 13. Heretic 288; 14. Himself 326; Who's Who 336; Abbreviations Used in the Notes 336; Notes 345; Suggestions for Further Reading 396; Index 399-416. On the logic see in particular Part I: *Scientia* - 'Knowledge' pp. 24-118.
"*The Structure of This Book*."

This book discusses Abelard's roles one by one in successive chapters ('Literate', 'Master', 'Logician', and so on) in order to build up a composite portrait of him. The sequence of chapters accords very roughly with the chronology of Abelard's life: from his precocious success in the schools (chapters 3-5), through his affair with Heloise (chapters 8-9), to his controversial career as a monk and theologian (chapters 11-13). Two chapters are devoted to his affair with Heloise because this was the turning point of his life, even though the events it comprised were concentrated in not much more than a single year (1117 or 1118). The concluding chapter (14), entitled 'Himself', centres on the Delphic subtitle he chose for his book on ethics: 'Know Thyself'. Overarching the fourteen chapters are the three parts, with their Latin titles, into which the book is divided: *Scientia* ('knowledge' or 'science'), *Experimentum* ('experience' or 'experiment') and *Religio* ('religion' or 'monasticism'). These three parts characterize Abelard's successive approaches to life and they function at the same time as an introduction to medieval culture in the period of the twelfth-century Renaissance. In Part I, Abelard expounds the 'science' which the Middle Ages had inherited from classical antiquity. In his native Loire valley he had begun his road to knowledge as a 'Literate' (chapter 3), that is, as a *litteratus* and Latinist; then in Paris he had been acknowledged as a 'Master' (chapter 4) of students. He 'who alone knew whatever was known' was a 'master' also in the sense of *magus*. His wisdom and magic comprehended all the knowledge of the ancient Greeks in philosophy and logic (chapter 5), the queen of the sciences. Contrasting with this theoretical and scholastic knowledge is *Experimentum* (Part II): learning not from books, but from experiencing life in the raw. Theory and fact, reflection and action, contrast - and often conflict - in Abelard's life, as they do in medieval culture as a whole. In his book on ethics, he had argued that actions in themselves are

indifferent; only the intention of the actor makes them right or wrong. Abelard 'experimented' with sex and violence. He compared himself to a knight (chapter 7), conducting feuds and mock battles in the schools, and then suddenly he found himself up against Fulbert and Heloise's other kinsmen in a real feud. In castrating Abelard, they took no account of his good intentions, but only of his action in putting Heloise into a convent. Because the Church put such value on celibacy, Abelard's castration had the peculiar effect of converting him to 'religion' (Part III), in the sense that it made him become a monk. Such was the attraction of monasticism in the twelfth century that the adjective *religiosus* (chapter 10) was synonymous with 'monastic', as if there was no religion outside the cloister. Abelard made repeated efforts to be a good monk (chapter 1), but he never could reconcile the exclusiveness of monasticism with his broad vision of theology (chapter 12), in which good pagans worshipped the true God and acknowledged the Trinity. He was not only a failed 'religious', St Bernard taunted, he was .1 blasphemer and a heretic (chapter 13).

(...)

Abelard's writings fill a whole volume (no. 178) of Migne's *Patrologiae: Series Latina* comprising about 800,000 words. His *Theologia* in its various versions (Abelard kept revising it over the decades 1120-40) contains more than 200,000 words; *Sic et Non* has 130,000, his sermons 115,000, the commentary on St Paul's *Epistle to the Romans* 90,000; for Heloise he wrote another 70,000 words. Migne's volume does not include Abelard's writings on logic: one big book, *Dialectica*, survives (though it is not complete) in addition to other commentaries and lectures. It is certain that some works have been lost, like the commentary on the Prophet Ezechiel which Abelard says he wrote in Paris and the love songs which he reminded Heloise were still being sung in the 1130s. As his surviving

writings amount to about 1 million words, his total output must have considerably exceeding that." (pp. 19-22).

10. Compayré, Gabriel. 1893. *Abelard and the Origin and Early History of Universities*. New York: Charles Scribner.
11. Dronke, Peter. 1976. *Abelard and Heloise in Medieval Testimonies*. Glasgow: University of Glasgow Press.
12. Ferguson, Chris B. 1983. "Autobiography as Therapy: Guibert de Nogent, Peter Abelard and the Making of Medieval Autobiography." *Journal of Medieval and Renaissance Studies* no. 13:187-212.
13. Fredborg, Karin Margareta. 2003. "Abelard on Rhetoric." In *Rhetoric and Renewal in the Latin West 1100-1540. Essays in Honour of John O. Ward*, edited by Mews, Constant J., Nederman, Cary J. and Thomson, Rodney M., 55-80. Turnhout: Brepols.
14. Grane, Leif. 1970. *Peter Abelard: Philosophy and Christianity in the Middle Ages* London: George Allen and Unwin.
Translated by Frederick and Christine Crowley;
bibliography and notes by Derek Baker.
15. Guilfooy, Kevin. 2004. "Mind and cognition." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfooy, Kevin, 200-304. Cambridge: Cambridge University Press.
16. ———. 2006. "Imagination and Cognition of Insensibles in Peter Abelard." In *Intellect et imagination dans la philosophie médiévale / Intellect and imagination in medieval philosophy / Intelecto e imaginação na filosofia medieval / Actes du XIe Congrès international de philosophie médiévale de la Société internationale pour l'Étude de la philosophie médiévale (S.I.E.P.M.): Porto, du 26 au 31 août 2002*, edited by Pacheco, Maria Cândida and Meirinhos, José F., 895-902. Turnhout: Brepols.
17. Häring, Nikolaus M. 1975. "Abelard yesterday and today." In *Pierre Abélard - Pierre le Vénérable. Les courants philosophiques, littéraires et artistiques en Occident au milieu du XII siècle*, edited by Jolivet, Jean and Louis, René,

341-403. Paris: Éditions du Centre national de la recherche scientifique.

18. Hellemans, Babette, ed. 2014. *Rethinking Abelard: A collection of critical essays*. Leiden: Brill.
19. Iwakuma, Yukio. 2004. "Influence." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfoy, Kevin, 305-340. Cambridge: Cambridge University Press.
20. Jacobi, Klaus. 2004. "Philosophy of Language." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfoy, Kevin, 126-157. Cambridge: Cambridge University Press.

"Abelard's investigations into the philosophy of language are of great interest not only with respect to the history of philosophy, but also with respect to systematic considerations. These investigations, however, are not readily accessible. They offer nothing to a reader who wants to glean information quickly from them. A thorough study is required, and this itself requires extraordinary patience. The purpose of this chapter is to contribute to the project of making Abelard's investigations into the philosophy of language accessible to the general philosophical community."
21. Jaeger, C. Stephen. 1980. "The Prologue to the *Historia Calamitatum*." *Euphorion. Zeitschrift für Literaturgeschichte*:1-15.
22. Jussila, Paivi H. 1995. *Peter Abelard on Imagery. Theory and practice, with special reference to his Hymns*. Helsinki: Suomalainen Tiedekatemia.
23. King, Peter. 2004. "Metaphysics." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfoy, Kevin, 65-125. Cambridge: Cambridge University Press.

"Abelard's philosophy is the first example in the Western tradition of the cast of mind that is now called *nominalism*. Although his view that universals are mere words (*nomina*) is typically thought to justify the label, Abelard's

nominalism - or better, his *irrealism* - is in fact the hallmark of his metaphysics. He is an irrealist not only about universals, but also about propositions, events, times other than the present, natural kinds, relations, wholes, absolute space, hylomorphic composites, and the like. Instead, Abelard holds that the concrete individual, in all its richness and variety, is more than enough to populate the world. He preferred reductive, atomist, and material explanations when he could get them; he devoted a great deal of effort to pouring cold water on the metaphysical excesses of his predecessors and contemporaries. Yet unlike modern philosophers, Abelard did not conceive of metaphysics as a distinct branch of philosophy. Following Boethius, he distinguishes philosophy into three branches: *logic*, concerned with devising and assessing argumentation, an activity also known as dialectic; *physics*, concerned with speculation on the natures of things and their causes; and *ethics*, concerned with the upright way of life."

24. Kunitz-Dick, Alisa. 2014. "Peter Abelard's Various Conceptions of Place (locus): from Attributes of Substances to Collections." *Medioevo. Rivista di Storia della Filosofia Medievale* no. 39:31-36.

25. Little, Edward F. 1969. "The Status of Current Research on Abelard. Its Implications for the Liberal Arts and Philosophy of the XIth and XIIth Centuries." In *Arts libéraux et philosophie au Moyen Age, 1119-1124*. Paris: Vrin.

"In the last decade of the eleventh and in the first half of the twelfth century questions were asked and argued about the unity and trinity of God, which attracted great attention and led to an independent, autonomous study of theology in the due course of time. Leaders in this movement were Anselm, Roscelin and Abelard. Abelard re-introduced the term "theology" to popular use. Roscelin and Abelard also debated questions which are still considered philosophical, but at the early date even their questions of divinity, or of

theology, were not differentiated, other than potentially. The written arguments remaining in our hands today are firmly based in dialectical and logical and linguistic operations. In short they are trivial, in a sense of the word which has gone out of use. In Abelard's case, which concerns us here, it seems for this reason that all his work should be taken into account in a treatment of the liberal arts and philosophy in this period, -- even the "theologies."

What seems needed most of all at the present time is a review of the state of our knowledge of Abelard's work. The present paper is directed to this question. After a quick review of modern scholarship, it will note the work being done at the present time and some appealing lines for future activity. It should become clear that, while research of the twentieth century has emphasized Abelard's theology, it has rediscovered the logical, dialectical, and linguistic foundation of that theology. A tendency is to examine it no longer strictly upon its own doctrinal merits, but upon its experimental, logical and philosophical character. This seems appropriate chronologically, in that it evaluates these works within the loose and formative context of their own time and aims. While this article is addressed specifically to this conference, it is also intended to be of use to the general student of Abelard." (p. 1119)

26. Luscombe, David Edward. 1966. "Nature in the Thought of Peter Abelard." In *La Filosofia della Natura nel Medioevo. Atti del Terzo Congresso Internazionale di Filosofia Medioevale*, 314-319. Milano: Vita e Pensiero.

"In his Commentary on the Hexameron Abelard tells us that at the time of the creation a certain force, *vis quaedam*, was granted to what was then created. This was the force of nature, *vis naturae*, which was bestowed upon creation once and for all time. This force is also a capacity, *facultas*, by which the things created during the six days were made capable of development and especially of multiplication (1). The writer of the *Book of Genesis* tells us that the earth

germinated even before the creation of the sun (2). Abelard attributes this germination to the workings of the *vis naturae* in its original freshness and strength (3). There is a natural process at work in the world, a pattern of causes and effects, as, for example, in the influence of the stars upon the climate of the earth. By the study of the stars we can predict the course of natural events (4), for astronomy is a species of the philosophy of the nature of things. This is not to say that we can also predict events contingent upon the human free will (5). But there is a determinism in the work of nature; if God interfered with this He would be acting *contra naturam*, because the force of nature has now been substituted for the divine will in the sense that nature preserves and continues the original work of the Creator (6)." (pp. 314-315)
(...)

"In Abelard's *Dialogus* the imagined philosopher who appears before Abelard in a dream, describes himself as content with the possession of the natural law alone. He professes no written law and investigates the truth and the high questions of moral philosophy by using his reason (28). He deprecates those Christians and Jews who rely only upon Scripture. But the philosopher says that Abelard's own *Theologia* is representative from the Christian point of view of the two approaches, the philosophical and the theological, the natural and the revealed, of *utraque doctrina* (29). This claim, or boast, is highly significant. It has always been understood that Abelard applied reason in the study of theology. It is perhaps less realized that Abelard held a kind of double source theory of revelation. Not only the written law but the law of nature and reason as well were the *utraque doctrina* which the best men accepted and studied. The significance of Abelard's doctrine of nature is that it leads us to consider Abelard as a thinker who found God revealed not only in the Word, but also in the world, with its

perfection and rationality, and in the divinely given reason of man.

(1) « Nihil nunc naturam aliud dicimus, nisi vim et facultatem illis operibus tunc collatam, unde illa sufficerent ad efficiendum haec quae postmodum inde contigerunt ».

Expositio in Hexameron, J.-P. Migne, Patrologia Latina (= P.L.) tom. 178, 749 C.

(2) *Genesis*, I, 11-12.

(3) *In Hexameron*, P.L., 178, 749 BC.

(4) I.e. « naturalia futura » - « quae causam aliquam naturalem sui eventus habent, ut ex his quae praecedunt tamquam quibusdam naturalibus sui causis contingere habeant », *In Hexameron*, P.L., 178, 754 A.

(5) *In Hexameron*, P.L., 178, 753 D - 4 D. Cf. Abelard, *Dialectica*, ed. L. M. De Rijk (Wijsgerige Teksten en Studies, I. Assen 1956), pp. 216-7.

(6) *In Hexameron*, P.L., 178, 746 C - 7 A.

(28) *Dialogus* (1619 C et seq.)

(29) *Op. cit.* (1613 C)

27. ———. 1969. *The School of Peter Abelard. The Influence of Abelard's Thought in the Early Scholastic Period.*

Cambridge: Cambridge University Press.

Contents: Preface IX-XI; List of Abbreviations XII-XIII; I. The Literary Evidence 1; II. Abelard's Followers 14; III: The Diffusion of Abelardian Writings 60; IV. The Condemnation of 1140 103; V. The Theological Writings of Abelard's Closest Disciples 143; VI. The School of Laon 173; VII. Hugh of St Victor 183; VIII. The *Summa Sententiarum* 198; IX: Abelard and the Decretum of Gratian 214; X. Abelard's Disciples and the School of St Victor 224; XI. Peter Lombard 261; XII. Robert of Melun 281; XIII. Richard of St Victor 299; XIV. Conclusion 308; Appendices 311; Bibliography 316; Index of Manuscripts 347; General Index 350-360.

"This book represents an historian's attempt to discern the ways in which Abelard's thought reached and influenced his

contemporaries and successors. The subject has attracted historical study for nearly a century if we take as a starting point the classic article by Heinrich Denifle entitled 'Die Sentenzen Abaelards und die Bearbeitungen seiner Theologia vor Mitte des 12. Jahrhunderts' which appeared in the Archiv für Literatur- und Kirchengeschichte des Mittelalters in 1885. Since that time much further knowledge of Abelard's school and of his disciples has accumulated and in addition a vast amount of scholarly energy has been devoted to the task of understanding and of bringing to life twelfth-century thought and learning in its many aspects and moods. With respect to Abelard's following it is perhaps a fitting time to draw together some threads and to offer an interpretation of its place in the evolution of the early scholastic movement.

The principal sources of this study are literary, biographical, palaeographical and doctrinal. The occasional surviving literary references to Abelard which were made in the twelfth century and later are numerous enough to convey the intensity and the scale of the disagreements which existed concerning his personality and achievement. The names of several of his disciples and hearers are also known and an examination is here attempted of their relationships to Abelard as well as of their reactions to his work and thought. However, information concerning twelfth century personalities is seldom abundant and much can also be gained from studying the codicology of Abelard and his school.

The surviving or known manuscripts of writings by Abelard and by his disciples offer further knowledge of Abelard's readership and following and therefore also of the general history of formative period in medieval thought. Abelard's public career was closed in 1140 by an ecclesiastical condemnation. As a condemned heretic whose errors had been vigorously denounced by, among others, Bernard of Clairvaux, Abelard's influence upon his age was limited and

tainted. That he was survived by disciples is an established fact, but what was done by these disciples to develop or to qualify his teaching still requires examination. It seems that the condemnation of 1140 raised as many questions as it solved and that the conflicts between Abelard's critics and his defenders in the schools entailed serious disagreements not only over outlook and method but also over specific teachings which continued to be debated in the years that followed. The stimulus which Abelard gave to the study of particular ideas and themes outlived the condemnation of 1140 and some of the criticisms which were levelled against Abelard at this time were an insufficient guide to his contemporaries. Already within the school of Hugh of St Victor a more sophisticated and refined study of Abelard's thought was in progress, and it was this which provided the springboard for many future doctrinal developments. Throughout the 1130s, 40s and 50s the interaction of the rival traditions of the schools of Abelard and of Hugh is a striking feature of theological discussion. If the Sentences of Peter Lombard, which enjoyed such a prolonged influence throughout the medieval period, may be regarded as the climax of continuous activity by schoolmen during the first half of the twelfth century, then it is clear that Abelard, for all his exaggerations and errors, was a major and continuing stimulus to debate and thought.

I have tried in the following pages to illustrate primarily the development of theological thought in approximately the first half of the twelfth century by reference not only to Abelard's disciples but also to major teachers of the various schools of the period such as Gratian of Bologna, Hugh and Richard of St Victor, Peter Lombard and Robert of Melun. I have not tried to be exhaustive and much could be said about the relationship between Abelard and other writers; the Porretans in particular are little mentioned. So much is added yearly to knowledge of the literature and thought of this period that much of what appears below will soon be

subject to modification and revision." (from the Preface, IX-X).

28. ———. 1972. "Peter Abelard Some Recent Interpretations." *Journal of Religious History* no. 7:69-75.
29. ———. 1983. "St. Anselm and Abelard." *Anselm Studies. An Occasional Journal* no. 1:207-229.
30. ———. 1988. "Peter Abelard." In *A History of Twelfth-Century Western Philosophy*, edited by Dronke, Peter, 279-307. Cambridge: Cambridge University Press. Chapter 10.
31. ———. 1992. "The School of Peter Abelard Revisited." *Vivarium* no. 30:127-138.
32. ———. 2002. "'Scientia' and 'disciplina' in the correspondence of Peter Abelard and Heloise." In *"Scientia" und "Disciplina". Wissenstheorie und Wissenschaftspraxis im 12. und 13. Jahrhundert*, edited by Berndt, Rainer, Lutz-Bachmann, Matthias, Stammberger, Ralf M. W. and Niederberger, Andreas, 79-89. Berlin: Walter de Gruyter.
33. ———. 2019. *Peter Abelard and Heloise. Collected studies*. New York: Routledge.
Contents: Preface; Abbreviations; Bibliography
1. From Paris to the Paraclete: The correspondence of Abelard and Heloise (1989);
Peter Abelard: Philosopher
2. Peter Abelard (1988); 3. Nature in the thought of Peter Abelard (1966); 4. Peter Abelard and the arts of language (1996); 5. Scientia and disciplina in the correspondence of Peter Abelard and Heloise (2002), 6. 'The sense of innovation in the writings of Peter Abelard (2005); 7. Peter Abelard and the poets (2001); 8. The school of Peter Abelard revisited (1992); 9. The Bible in the work of Peter Abelard and his "school' (1996); 10. Peter Abelard and the creation of the world (2000); 11. Peter Abelard's carnal thoughts (1997); 12. St Anselm and Abelard: A restatement (2002); 13. A new student for Peter Abelard: The marginalia in British Library MS Cotton Faustina A.X (with Charles

- Burnett; 2005); 14. Berengar, defender of Peter Abelard (1966);
 Peter Abelard and Heloise
 15. The Letters of Heloise and Abelard since "Cluny, 1972" (1980); 16. Peter Abelard and the abbey of the Paraclete (2003); 17. Excerpts from the letter collection of Heloise and Abelard in Notre Dame (Indiana) MS 30 (1983);
 Peter Abelard Monk
 18. Peter Abelard and monasticism (1975); 19. Monasticism in the lives and writings of Heloise and Abelard (1991);
 20. Supplementary notes;
 Index; Index of Manuscripts.
34. Marenbon, John. 1992. "Abelard's Concept of Natural Law." In *Mensch und Natur im Mittelalter*, edited by Zimmermann, Albert and Speer, Andreas, 609-621. Berlin: Walter de Gruyter.
35. ———. 1997. "The Platonisms of Peter Abelard." In *Néoplatonisme et philosophie médiévale*, edited by Benakis, Linos G., 109-129. Turnhout: Brepols.
 Reprinted as Essay XII in: John Marenbon, *Aristotelian Logic, Platonism, and the Context of Early Medieval Philosophy in the West*.
 "When, in 1966, Father Chenu published *Les platonismes au XII siècle*, twelfth-century Platonism had already been a topic of scholarly interest for nearly a century. (1) Chenu's novelty lay in his plural: not «Platonism» but «Platonisms». He distinguished a strand going back to Augustine, another deriving from the *Timaeus* and Boethius, one linked to pseudo-Dionysius and another to Arab writers. Chenu's is a useful analytical method which allows the scholar to avoid broad, oversimplifying labels whilst continuing to see the history of medieval philosophy in the neat terms of interrelated and interacting traditions. No doubt it could be fruitfully applied to Abelard -- but that is not my intention here. The Platonisms I shall be discussing are not those of the historian, but Abelard's own: some of the diverse ways

in which he used a notion of Plato and Platonic teaching to formulate, structure and convey his own thought (2). At the end of this paper, I shall return to the question of method, and ask what my procedure has to offer by contrast with other ways of discussing Platon- or any other -ism."

(1) In M.-D. Chenu, *La théologie au douzième siècle* (Études de philosophie médiévale, 45). Paris, 1966, pp. 108-141. For a sketch of the historiography of twelfth-century Platonism, see J. Marenbon, "Platonismus im zwölften Jahrhundert: alte und neue Zugangsweisen" (translation by A. Snell & O. Summerell), in T. Kobusch and B. Moisisch (eds.), *Platon in der abendländischen Geistesgeschichte, neue Forschungen zum Platonismus*, Darmstadt, forthcoming. [Darmstadt, Wissenschaftliche Buchgesellschaft, 1997 pp. 101-119]

(2) In my general presentation of Abelard's use of Plato and attitude to him, I summarize arguments put forward in various places and different contexts in my *The Philosophy of Peter Abelard*. Cambridge, 1997. But in my longer and more detailed discussions here -- of Plato universals, the *Timaeus* and optimism, and «the Platonism of the *Republic*» -- I develop and extend what I have written in the book.

36. ———. 1997. *The Philosophy of Peter Abelard*. Cambridge: Cambridge University Press.
Paperback edition, with corrections and bibliographical note, 1999.
37. ———. 1998. "The Twelfth Century." In *Routledge History of Philosophy. Volume III: Medieval Philosophy*, edited by Marenbon, John, 150-187. New York: Routledge.
On Abelard see pp. 155-166.
38. ———. 2004. "Life, milieu, and intellectual contexts." In *The Cambridge Companion to Abelard*, edited by Brower, Jeffrey E. and Guilfooy, Kevin, 13-44. Cambridge: Cambridge University Press.
39. ———. 2006. "The Rediscovery of Peter Abelard's Philosophy." *Journal of the History of Philosophy* no.

44:331-351.

"My article surveys philosophical discussions of Abelard over the last twenty years. Although Abelard has been a well-known figure for centuries, his most important logical works were published only in the twentieth century and, so I argue, the rediscovery of him as an important philosopher is recent and continuing. I concentrate especially on work that shows Abelard as the re-discoverer of propositional logic (Chris Martin); as a subtle explorer of problems about modality (Simo Knuuttila, Herbert Weidemann) and semantics (Klaus Jacobi); as a metaphysician before the reception of Aristotle's *Metaphysics* (Peter King); and as an ethical thinker who echoes the Stoics (Calvin Normore) and anticipates Kant (Peter King)."

40. ———. 2007. "Peter Abelard and Peter the Lombard." In *Pietro Lombardo. Atti del XLIII Convegno Storico Internazionale*, 225-239. Spoleto: Fondazione Centro italiano di studi sull'alto Medioevo.
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Collection of essays previously published.

Contents: Introduction; I. Orality, Literacy and Authority in the Twelfth-Century Schools (1990) ; II. Philosophy and Theology 1100–1150: The Search for Harmony (1994); III. Guibert of Nogent's *Monodiae* (III, 17) in an Appendage to the *De haeresibus* of Augustine (1987); IV. In Search of a

Name and its Significance: A Twelfth-Century Anecdote about Thierry and Peter Abaelard (1988); V. La Bibliothèque du Paraclet du XIIIe siècle à la Révolution (1985); VI. St. Anselm and Roscelin: Some New Texts and their Implications, I. The *De incarnatione verbi* and the *Disputatio inter Christianum et Gentilem* (1991); VII. Nominalism and Theology before Abaelard: New Light on Roscelin of Compiègne (1992); VIII. St. Anselm, Roscelin and the See of Beauvais (1996); IX. The Trinitarian Doctrine of Roscelin of Compiègne and its Influence: Twelfth-Century Nominalism and Theology Re-considered; X: St. Anselm and Roscelin of Compiègne: Some New Texts and their Implications, II. A Vocalist Essay on the Trinity and Intellectual Debate, c. 1080–1120 (1998); Addenda and Corrigenda 1-7; Index 1-4; Index of Manuscripts 1-3..

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See the following Chapters:

2. The early years: Roscelin of Compiègne and William of Champeaux, pp-21-42.

"This chapter examines Abelard's intellectual debt to both the vocalist theories of Roscelin of Compiègne and William of Champeaux's teaching about dialectic in shaping his philosophical nominalism. By looking at the earliest records of Abelard's teaching of dialectic and glosses on Aristotle, Porphyry and Boethius, it observes how students identified him as an iconoclast teacher, who quickly provoked laughter by the examples that he chose. It traces how Abelard's early conflict with his teachers laid the foundation for the subsequent difficulties he would experience in his career."

3. Challenging the Tradition: the *Dialectica*, pp. 43-57.

"This chapter examines Abelard's *Dialectica*, his first major treatise on dialectic. The treatise is structured around an analysis both of the major parts of speech, categories and of different kinds of argument, categorical and hypothetical. It argues that a driving theme is Abelard's desire to counter

the philosophically realist arguments presented by William of Champeaux."

5. Returning to *Logica*, pp. 81-100.

"This chapter examines the *Logica 'Ingredientibus'*, a series of commentaries on Porphyry, Aristotle, and Boethius more profound than any of his earlier glosses. I argue that in these commentaries Abelard adopts a much more profound theory of universals and of other parts of speech than in the *Dialectica*. Rather than emphasizing differences of opinion with William of Champeaux, they demonstrate how far Abelard had come to distance himself from the arguments of Boethius. Instead of speaking uniquely about dialectic, he is now interested in logica, the arts of language in general."

52. ———. 2009. "William of Champeaux, Abelard and Hugh of Saint-Victor: platonism, theology and scripture in early 12th century France." In *Bible und Exegese in der Abtei Saint-Victor zu Paris: Form und Funktion Eines Grundtextes im Europäischen Raum. Band 3*, edited by Berndt, Rainer, 131-163. Münster: Aschendorff.

53. ———. 2011. "William of Champeaux, the Foundation of Saint-Victor (Easter, 1111), and the Evolution of Abelard's Early Career." In *Arts du langage et théologie aux confins des XIe et XIIe siècles*, edited by Rosier-Catach, Irène, 83-104. Turnhout: Brepols.

"The common understanding of Parisian intellectual life in the twelfth century as dominated by an on-going conflict between the traditionally minded William of Champeaux and a philosophically radical Peter Abelard, has long been dependent on how we interpret Abelard account of their interaction in the *Historia calamitatum*." (p. 83)

(...)

Bautier's proposed dating of Abelard's early career needs revision [*]. Rather than assuming that Abelard studied under William for just two years, it is more likely that he remained at the cathedral school for at least four years (1100-1104 ?), before deciding to establish his own school at

the royal palace of Melun (c. 1104-1106 ?) and then at Corbeil (c. 1106-1107 ?). His decision to return home, ostensibly to recover from a period of overwork (c. 1107-1111 ?), thus occurred when William of Champeaux was becoming active as an archdeacon in Paris, and possibly was helped by some assistant, who could communicate and expand upon his master's teaching on these subjects. (...)

This revised chronology has implications for understanding the evolution of Abelard's writings on dialectic. Having spent at least four years studying under William, Abelard may have started to compose his *Dialectica* even before he returned to Paris in 1111. While Abelard did not accept William's original understanding of a universal as a substance or material essence independent of *differentiae*, this did not stop him from using the phrase *res universalis* on three separate occasions within the *Dialectica*. After the unfolding of his affair with Heloise in 1117, Abelard started to adopt a more radical perspective. He now argued that a universal was not any kind of thing. He also had to counter the views of a much wider range of teachers than just William of Champeaux. (pp. 103-104, notes omitted)

[*] Bautier, Robert-Henri. 1981. "Paris au temps d'Abélard." In *Abélard en son temps. Actes du Colloque international organisé à l'occasion du IXe centenaire de la naissance de Pierre Abélard (14-19 mai 1979)*, edited by Jolivet, Jean, 21-77. Paris: Les Belles Lettres.

According to Bautier "Abelard studied under William for only two years (1100-1102), before starting to teach at Melun c. 1102 and at Corbeil c. 1104, but returned to Paris in 1108, after perhaps three years recovering from overwork. We shall present evidence for considering that William moved to Saint-Victor at Easter 1111." (p. 83)

54. Mews, Constant J., and Jolivet, Jean. 1990. "Peter Abelard and His Influence." In *Contemporary Philosophy. Vol. 6.1:*

Philosophy and Science in the Middle Ages, edited by Guttorm, Floistad, 105-140. Amsterdam: Kluwer.

"This chronicle is based on one prepared by Jean Jolivet, reviewing literature on Abelard up to 1972; I have updated it to take into account publications which have appeared 1972-1985" (p. 105).

55. Moonan, Lawrence. 1989. "Abelard's Use the "Timaeus". "*Archives d'histoire doctrinale et littéraire du Moyen Age* no. 56:7-90.
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Petrus Abaelardus: Guy Hamelin: La psychologie de la connaissance chez Pierre Abélard arrive t-elle à une impasse? 883; Kevin Guilfooy: Imagination and Cognition of Insensibles in Peter Abelard 895; Mathias Perkams: The Trinity and the Human Mind. Analogies in Augustine and Peter Abelard 903; Constant Mews: Faith as «existimatio rerum non apparentium»: Intellect, Imagination and Faith in the Philosophy of Peter Abelard 915; Tetsuro Shimizu:

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59. Sikes, J. G. 1965. *Peter Abailard*. New York: Russell and Russell.
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Chapter 2: *Abelard: a Twelfth-Century Hermeneutics of Suspicion* pp. 63-126.

"If Boethius's goal in his logical commentaries is to distinguish in order to unite, Abelard's goal seems simply to distinguish. Boethius's construction of a narrative from Aristotle's cryptic remarks in the *Peri hermeneias* is one Abelard follows carefully and also criticizes, finding Boethius's connections more a confusion than a synthesis of the elements in Aristotle's text. He argues that Boethius constructs a unity that is inauthentic, which asserts a happy ending, a union between language, understanding, and the world that is not quite achievable. His own corpus of commentaries breaks down this narrative to consider its parts much more carefully.

Abelard's perception of gaps in Boethius's narrative and his desire to take it apart is signaled in many ways. It comes across at a general and formal level in his account of the relationship between the *Categories* and *Peri hermeneias* in his later glosses on Porphyry (known as the *Logica nostrorum petitioni sociorum*). In these later glosses, he argues that Aristotle's two works are not two pieces of a single narrative, an account of words leading to one of sentences, as Boethius claims (and as was a tradition Abelard himself follows in his earlier glosses), but the separate consideration of words insofar as they signify things (the *Categories*) and words insofar as they signify *intellectus* (the *Peri hermeneias*) (LNPS 508. 32-37).

Beginning with this division, then, I would like to consider Abelard's account of the distinction between words and

things in the earlier *Glosses on Porphyry* and the later gloss on Porphyry, and between words and understanding in the *Commentary on the Peri hermeneias*. (10) I will attempt to examine the kind of a narrative Abelard constructs, insofar as he constructs any, of the processes of abstraction and sentence construction." (pp. 66-67)

(10) See Constant Mews, "On Dating the Works of Peter Abelard," ADHLMA 52 (1985): 73-134; Marenbon, *Peter Abelard*, pp. 40-53; and L. M. de Rijk, "Peter Abelard's Semantics and His Doctrine of Being," *Vivarium* 24, 2 (1986): 103-108. It is widely agreed that the *Glosses on Porphyry* and *Commentary on the Peri hermeneias*, both part of the *Logica ingredientibus*, are earlier (1118-20) than the later glosses on Porphyry (here: *LNPS*) and *De intellectibus* (from the mid-1120s).

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Pierre Abélard. Bibliographie des études en Français sur sa philosophie et théologie

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Résumé: "La question de la signification des noms propres joue un rôle de révélateur dans l'analyse médiévale du problème des universaux et de l'individuation. À la jonction de la grammaire et de la logique, elle hérite des Institutions de Priscien et des commentaires sur l'Organon de Boèce un ensemble d'éléments doctrinaux, plus ou moins convergents ou contradictoires, à partir desquels elle construit une sémantique originale, qui culmine avec l'oeuvre d'Abélard. Cette approche inédite, fondée sur une réélaboration des relations entre substance, qualité, signification et nomination pose essentiellement la question du rôle de la qualité particulière, souvent appelée « platonitas » et pensée comme une collection d'accident, dans la signification des noms propres de substances individuelles."

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"Comme l'a souligné A. de Libera (*L'Art des généralités*, Paris, Aubier 1999, p. 319-329), Abélard critique dans les *Gloses sur Porphyre* la théorie de l'essence matérielle (notée TEM) en soulignant son incapacité à répondre à la question du sujet d'inhérence des propriétés constitutives, qu'il s'agisse de l'espèce (et donc, des différences spécifiques) ou des individus (et donc, des accidents individuels). Un autre

commentaire à *l'Isagoge*, souvent associé à la TEM et attribué au Pseudo-Raban (*alias* P3), tente de répondre à cette double difficulté. Nous proposons d'étudier les solutions que ce texte tente d'apporter, car elles permettent, selon nous, de mieux comprendre la réfutation d'Abélard, et de prendre la mesure de la pertinence de ses attaques." (p. 67)

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Table des matières: Introduction 1; I. Maurice de Gandillac: Le "Dialogue" 3; II. Sofia Vanni Rovighi: Intentionnel et universel chez Abelard 21; III. Jean Jolivet: Abélard et Guillaume d'Ockham, lecteurs de Porphyre 31; IV. Alain de Libera: Abélard et le dictisme 59; V. Guido Küng: Abélard et les vues actuelles sur les universaux 119; Index des noms 129-131.
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Résumé: "Cette étude recherche comment Abélard approche la question de l'assentiment, l'acte par lequel l'esprit donne son accord à une proposition. Le *De intellectibus* examine parmi les actes mentaux l'estimation ou appréciation subjective. Le processus d'assentiment est décrit comme accord (susceptible de degrés) entre la réalité et la vérité de l'intellection.

Mais ce sont les traités de logique qui examinent les modalités de production de la confiance, dans une logique de la persuasion et de la vraisemblance qui trouve son application en théologie."

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159; Abélard entre chien et loup 169; Doctrines et figures de philosophes chez Abélard 185; Eléments pour une étude des rapports entre la grammaire et l'ontologie au Moyen Age 203; Abélard et Guillaume d'Ockham, lecteurs de Porphyre 233; Non-réalisme et platonisme chez Abélard. Essai d'interprétation 257; L'intellect et le langage selon Radulphus Brito 278; Rhétorique et théologie dans une page de Gilbert de Poitiers 293-311.

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Section 3 : Abélard : l'homme.

David E. Luscombe : Pierre Abélard et le monachisme 271;

Louis Grodecki : Abélard et Suger 279; Mary M. Mc

Laughlin : Peter Abélard and the dignity of women: Twelfth century « feminism » in theory and practice 287; Jacques

Vanuxem : La mort et la sépulture d'Abélard à Saint-

Marcel-lez-Chalon 335; Nikolaus M. Häring : Abelard

yesterday and today 341-403.

Section 4 : Pierre Abélard : l'écrivain

Jacques Vernet : La tradition manuscrite et la diffusion des

ouvrages d'Abélard (résumé) 405; Jacques Monfrin : Le

problème de l'authenticité de la correspondance d'Abélard

et d'Héloïse 409; Peter von Moos : Le silence d'Héloïse et les

idéologies modernes 425; John F. Benton : Fraud, fiction

and borrowing in the correspondence of Abélard and

Héloïse 469; Jean Charles Payen : La pensée d'Abélard et les

textes romans du XIIe siècle 513-521.

Section 5: Abélard : Le philosophe et le théologien.

Paul Vignaux : Note sur le nominalisme d'Abélard 523; Jean

Jolivet : Notes de lexicographie abélardienne 531; Lambert-

Marie De Rijk : La signification de la proposition (*dictum*

propositionis) chez Abélard 547; Rolf Peppermüller : Zum

Fortwirken von Abaelards Römerbrief-kommentar in der

mittelalterlichen Exegese 557; Tullio Gregory :

Considérations sur *ratio* et *natura* chez Abélard 569;

Maurice de Gandillac : Intention et loi dans l'éthique

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"Cette communication se borne a un bref examen de la signification de la phrase complète (*propositio*) dans la logique de Pierre Abélard.

Il paraît utile de commencer par la définition du verbe signifier (*significare*) chez ce logicien.

'signifier' dit des mots (*dictiones*) c'est produire une intellection dans l'âme de l'auditeur (*Logica ingredientibus* 307, 30 ss.), tandis que le même verbe est également appliqué à la dénotation des choses extérieures (*ibid.*); dans ce dernier sens, le verbe est synonyme de *appellare*, *nominare*, *demonstrare*, *designare*.

'signifier' dit des phrases complètes (*propositiones*) c'est produire une intellection laquelle est formée par la liaison des intellections de ses parties (*dictiones*)." p. 547

"On peut conclure que selon Abélard le *dictum* n'est pas un objet qui serait indépendant de la pensée, mais plutôt le contenu de la pensée, c'est-à-dire une *intellection objectivée*, qui correspond soit à un état de choses réel, soit à un état de choses seulement possible (*Dial. II*, 205, 28-30: *id dicimus quod id quod dicit hec propositio 'Socrates est homo', est unum de his que natura patitur esse*), soit un état de choses tout à fait impossible (*Dial. II*, 158, 7-9: la proposition '*Socrates est lapis*' ne reflète pas une *inherentia*

de Socrate et de pierre, ni '*Socrates non est lapis*' leur rémotion).

(...)

Ainsi, l'existence qu'établit la proposition en parlant, n'est pas une existence réelle, mais, pourrait-on dire, une existence *parlée*, ou plutôt, une existence *pensée* ou *logique*. Employant la distinction bien connue du XIV^e siècles (présentée notamment par Jacques d'Ascoli, Thomas d'York, Pierre Thomae):

res: 1) extra animam (chose extérieure); 2) in anima: a) subjective (= acte de l'intellection comme tel) b) objective (contenu de l'intellection).

on peut dire qu'Abélard a essayé, à sa façon, de montrer que le *dictum*, de la proposition, loin d'être une chose extérieure (*res extra animam*) est une chose qui doit son existence à l'âme ou à l'intellection (*res in anima*), mais qu'il faut en même temps bien le distinguer de l'acte de l'intellection pris comme tel (*res in anima subjective*), et reconnaître, sa propre identité dans le *contenu objectif* de l'intellection. Par là, le *dictum* du grand logicien du XII^e siècle semble être d'une nature logique par excellence." pp. 554-555. (notes omises)

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"The term *syncategorema*, translated by *consignificantia*, only exists in Greek in the Latin *Institutiones* of the grammarian Priscien, and is introduced in the XIIth century in the grammatical commentaries, the couple of terms *syncategorema* / *categorema* emerging even later, at the end of the XIIth century. Thus the discussions first focus on the terms connected to *consignificare*. The antique heritage is multiple and diversified. Priscien uses, in a contradictory way, a functional criterium (a part which is not one of the main parts of speech is consignifying), a semantic criterium (to be a part of speech is to indicate a concept of the mind), a criterium of autonomous meaning (something is said to consignify if it does not signify by itself). Boethius uses the notion in five different ways, applying to various terms or morphemes: prepositions and conjunctions, parts of a compound, tense, the verb to be, quantifiers. The *Glosulae* on Priscian, at the end of the XIth century, and especially in

the later revision by William of Champeaux, claim that the consignifying parts signify the thing signified by the word to which they are attached. Abelard, reading those glosses, hesitates: the grammarian's solution is not satisfactory, but if, as Boethius wants it, the consignifying parts did not have any meaning, then it would not be possible to explain the semantic role they have in the intellection of the whole proposition. He will thus devise a really innovative solution, which he applies first to the copula and then extends to the other consignifying parts: they correspond to a *mental act*."

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Pietro Abelardo. Bibliografia degli studi italiani

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Indice: Presentazione di Constant J. Mews 1; Prefazione 13; Sigle e abbreviazioni 17; Introduzione 19; Nota bibliografica 27; Cap. 1. La teologia come "sistema": una *summa theologiae* abelardiana? 31; Cap. 2. Metodo e dialettica 69; Cap. 3. *Potentia, sapientia, benignitas* 103; Cap. 4. *Stimma fidei, discretio proprietatibus* e dottrina delle appropriazioni 149; Cap. 5. *Theologia* e scienza aristotelica 233; Cap. 6 *Discretio proprietatibus* e *omnipotentia Dei* 247; Cap. 7. Nota conclusiva. La teologia abelardiana e il dibattito attuale sul *De Deo uno et trino* 283; Bibliografia 291; Indice dei nomi 337-343.

"L'analisi della teologia di Pietro Abelardo che questo saggio intende affrontare parte dal presupposto che essa non vada letta, anzitutto, come un'opera di discussione e di rielaborazione di una serie di "contenuti" della tradizione dottrinale, ma che debba essere piuttosto considerata sotto il profilo di un disegno innovativo, di un progetto speculativo che, da questo punto di vista, è praticamente inedito nella storia del cosiddetto "pensiero cristiano": il disegno di guadagnare, nell'ambito della riflessione sul mistero divino - degli studi di divinitas, come si diceva allora - un nuovo spazio concettuale, un vero e proprio nuovo "sapere", la *theologia*.

In questo senso, tenendo anche conto del primo impatto che gli scritti trinitari abelardiani ebbero nel mondo intellettuale della prima metà del XII secolo, bisognerà accostarsi alla teologia del *magister* medievale in un'ottica che riprenda, in

qualche modo, il punto di vista dei suoi contemporanei, per cogliere in quei testi, nella loro reale portata speculativa, gli aspetti di autentica *novitas*, naturalmente, non con la diffidenza e il pregiudizio che inficiarono le opinioni dei detrattori di allora, ma con un atteggiamento di rinnovata curiosità e con l'interesse primario di comprendere come si struttura il tentativo di discutere del mistero trinitario in una maniera così diversa rispetto alle consuete forme della sacra doctrina. (Cosa che, agli occhi degli avversari, ma anche degli estimatori e discepoli, faceva della riflessione sulla *fides catholica* del nostro *magister* qualcosa di talmente inusitato da poter essere indicato, appunto, come *nova theologia*).

Queste considerazioni giustificano l'interesse di questo saggio per i fondamenti metodologici ed "epistemologici" della nuova scienza" teologica abelardiana. Non si tratta tuttavia di una mera indagine di storia del metodo.

L'interesse prioritario è piuttosto quello di dare conto dello spessore speculativo del pensiero di Abelardo, e di come la grandezza della sua prospettiva teologica possa emergere direttamente dalla lettura dei suoi scritti; una lettura che si estende anche a molti testi dei teologi coevi, nella convinzione che la peculiarità della proposta di Abelardo debba essere messa in risalto anche mediante il confronto con le direzioni teologiche in quel momento più rilevanti. Il lettore sarà quindi spesso chiamato, nelle pagine che seguono, ad accostarsi con pazienza all'impegnativo confronto con le opere del *magister* bretone e con quelle di molti altri *magistri* della prima metà del XII secolo." (pp. 13-14)

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Inhaltsverzeichnis: Vorwort; Einführung; Biographische Daten;
I. Die Gestalt und das Bild Abaelards.
D. E. Luscombe: The Letters of Heloise and Abelard since 'Cluny 1972' 19; John F. Benton: A reconsideration of the authenticity of the correspondence of Abelard and Heloise 41; Peter Dronke: Heloise's *Problemata* and Letters: Some Questions of Form and Content 53; Peter von Moos: *Post festum* -- Was kommt nach der Authentizitäts-debatte über die Briefe Abaelards und Heloises? 75.
II: Abaelard, Philosoph und Logiker im 12. Jahrhundert.
Jean Jolivet: Doctrines et figures de philosophes chez Abélard 103; Mariateresa Beonio-Brocchieri Fumagalli:

Concepts philosophiques dans l'*Historia Calamitatum* et dans les autres oeuvres abélardiennes 121; L. M. de Rijk: Peter Abälard (1079-1142): Meister und Opfer des Scharfsinns / Öffentlicher akademischer Vortrag, gehalten am 18. April 1979 in der Promotionsaula der Theologischen Fakultät in Trier 125; L. M. de Rijk: The semantical Impact of Abailard's Solution of the Problem of Universals 139; Wolfgang L. Gombocz: Abaelards Bedeutungslehre als Schlüssel zum Universalienproblem 153; Klaus Jacobi: Diskussionen über Prädikationstheorie in den logischen Schriften des Petrus Abaelardus. Versuch einer Übersicht 165;

III. Die Stellung Abaelards in der Geschichte der Theologie und Liturgie.

Constant Mews: The development of the *Theologia* of Peter Abelard 183; Eileen F. Kearney: Peter Abelard as Biblical Commentator: A Study of the *Expositio in Hexaemeron* 199; Heinz Robert Schlette: *Aspiratio*. Prareformatorische Akzente in Abälards Erklärung der vierten Vaterunser-Bitte 211; Rolf Peppermüller: Zu Abaelards Paulusexegese und ihrem Nachwirken 217; Thaddaeus Kucia: Die Anthropologie bei Peter Abaelard 223; Elisabeth Gossmann: Zur Auseinandersetzung zwischen Abaelard und Bernhard von Clairvaux um die Gotteserkenntnis im Glauben 233; Maurice de Gandillac: Notes préparatoires a un débat sur le *Dialogus* 243; Lothar Steiger: Hermeneutische Erwägungen zu Abaelards *Dialogus* 247; Chrysogonus Waddell: Peter Abelard as creator of liturgical texts 267; Rudolf Haubst: Marginalien des Nikolaus von Kues zu Abaelard (oder: Abaelard, wie Cusanus ihn sah) 287; Ernst Volk: Das Gewissen bei Petrus Abaelardus, Petrus Lombardus und Martin Luther 297; Register zitierter Personen 331; Autorenverzeichnis 333.

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Resumen: "El propósito de este trabajo es señalar algunos aspectos de la ontología y la gnoseología de Pedro Abelardo en el tratamiento del problema de los universales desarrollado en la primera parte de su *Logica ingredientibus*, o *Glosas a la Isagogé de Porfirio*.(1) Para ello, vamos a hacer, en primer lugar, una breve recapitulación del contenido del pasaje central en que Abelardo comenta las tres cuestiones de Porfirio (I). Nuestro interés es destacar la relevancia que adquieren las críticas a las doctrinas de Guillermo de Champeaux en la propia configuración de la doctrina abelardiana del status rei (II), y la paradójica ausencia, en este tratamiento de Abelardo, de una teoría de la formación del concepto universal, a falta de la cual, sólo hallamos una teoría de la "significación intelectual" de los nombres universales (III). Concluiremos señalando que la inicial limitación que en este aspecto puede presentar la *Logica ingredientibus* se corresponde, en verdad, con una visión de las limitaciones del conocimiento intelectual humano (IV)."

(1) Petrus Abelardus, "Logica ingredientibus" (ed. Geyer) en *Beitrage zur Geschichte der Philosophie des Mittelalters* XXI (1919-1927) 1-3.

7. Daza y García, Rómulo Ramírez. 2017. "Dialéctica y razón práctica en Pedro Abelardo: independencia o laberinto intelectual." *Sincronía. Revista de Filosofía y Letras* no. 21:33-72.

Resumen: "El panlogismo abelardiano filosóficamente considerado coadyuvó de un modo positivo al campo dialéctico, aunque metodológicamente desbocaría su elemento formal, con patentes consecuencias éticas y teológicas, por ser los campos en los que lo aplicó. La

exploración de Abelardo y sus incursiones intelectuales, le posicionan como uno de los más grandes dialécticos de todos los tiempos, y una de las más grandes luminarias de la filosofía medieval. Problematicar el talante de su investigación, lleva a un franco balance tanto de lo infortunado que sus conclusiones en materias aplicadas pudieran tener, como de la pericia innegable de su polémica intelectual, de claros frutos en el campo lógico. Se exploran evaluativamente los alcances de este tipo de filosofía, y se destaca su propia índole que, pese a la caída existencial de su persona dado el contexto en el que se enmarcaba, y pese a su espíritu contestatario y rebelde, su pujanza filosofante nos lleva a considerar y a situar en un sutil encuadre, tanto las fortalezas como las limitantes de su pensamiento."

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Buridan's Logical Works. I. An Overview of the *Summulae de dialectica*

INTRODUCTION: THE PLACE OF BURIDAN IN THE HISTORY OF PHILOSOPHY

"In this essay, I wish to question the view that the distinction between medieval and early modern philosophy is primarily one of method. I shall argue that what has come to be known as the modern method in fact owes much to the natural philosophy of John Buridan (ca. 1295-1361), a secular arts master who taught at the University of Paris some three centuries before Descartes. Surrounded by conflicts over institutional governance and curricular disputes, Buridan emerged as a forceful voice for the independence and autonomy of teachers in the faculty of arts, arguing that philosophy as properly practiced belonged to them, the "artists artistae", not to those who taught in the so-called 'higher' faculties of theology, law, and medicine. Now such voices had been heard before at Paris, most notably from Averroist arts masters in the late 13th and early 14th-centuries.(*). Buridan is different, however, because unlike Boethius of Dacia and John of Jandun, he knew how to make the case for artistic autonomy without denigrating the theology and thereby inviting official

condemnation. His trick was not to argue that there are 'two truths', one acquired and the other revealed, which might well come into conflict with each other, or that propositions whose truth has been revealed in scripture in no way qualify as *scientia*. It was rather to recognize the profoundly different methods of theology and philosophy, without losing sight of the fact that what counts as evidence in a proof in natural philosophy does not work in a theological argument, even if both have the same conclusion, such as that the human soul is immortal. Buridan seems to think that if only people would respect the differences between the rules of philosophical and theological inquiry, no conflicts would arise. He is not so naive as to claim this could ever happen, of course. But it does explain why he almost always diagnoses such conflicts in terms of some logical or linguistic confusion on the part of the people who propose them. Buridan is also different because in him the secularizing sentiment already present in the Latin Averroists begins to take shape as a way of doing philosophy, i.e., as a philosophical grammar. This is clear in his greatest work, the *Summulae de Dialectica*, a comprehensive account of the titles of philosophical discourse written for the guidance of students and scholars alike. Due in large part to the enormous popularity of the *Summulae* and his commentaries on Aristotle's metaphysics and natural philosophy -- copies were made or (later) printed and circulated throughout France, Germany, Italy, Scotland, and Eastern Europe, well into the 16th century -- Buridan helped make possible the secularization of philosophical practice a crucial first step on the road to modernism." (pp. 34-35)

Notes

(*) Fabienne Pironet, "Le sujet de la science dans les "Regulae" de Descartes", *Medioevo*, 24, 1998, pp. 267-281.

From: Jack Zupko, "John Buridan and the Origins of Secular Philosophical Culture", in: Stefano Caroti, Jean Celeyrette (eds.), *Quia inter doctores est magna dissensio. Les débats de*

philosophie naturelle à Paris au XIV siècle, Firenze: Olschki 1994, pp. 33-48.

BURIDAN'S LOGICAL WORK

"The extant writings of Buridan consist of the lectures he gave on subjects comprised in the curriculum of the faculty of Arts at Paris. In the fourteenth century this curriculum was largely based on study of the treatises of Aristotle, along with the *Summulae logicales* of Peter of Spain and other medieval textbooks of grammar, mathematics and astronomy. Buridan composed his own textbook of logic, a *Summula de dialectica*, as a "modern" revision and amplification of the text of Peter of Spain, and he also wrote two treatises on advanced topics of logic, entitled *Consequentiae* and *Sophismata*, which are among the most interesting contributions to late medieval logic. All of his other works are in the form of commentaries, and of critical books of *Questions*, on the principal treatises of the Aristotelian corpus. The literal commentaries are extant only in unpublished manuscript versions, but the books of *Questions* on Aristotle's *Physics*, *Metaphysics*, *De anima*, *Parva naturalia*, *Nicomachean Ethics*, and *Politics* were published, along with Buridan's writings in logic, after the invention of printing. (...) Most of the printed editions represent the lectures Buridan gave during the last part of his teaching career, though earlier versions are found among the unpublished manuscript materials. Until a critical study of the manuscripts is made, however, there is no sure way of determining any order of composition among Buridan's works, or of tracing the development of his thought over the thirty odd years of his academic career.

Buridan made significant and original contributions to logic and physics, but one of his major achievements was that of vindicating the independence of natural philosophy as a

respectable study in its own right, and of defining the objectives and methodology of the scientific enterprise in a manner which gave warrant for its autonomy in relation to dogmatic theology and metaphysics. This achievement was intimately connected with the movement of fourteenth century thought known as Nominalism, and with the controversies precipitated at the universities of Oxford and Paris by the doctrines associated with William of Ockham. Buridan's own philosophical position was thoroughly nominalistic, and indeed very similar to that of Jean de Mirecourt, a theologian of Paris whose teachings were condemned in 1347 by the chancellor of the university and the faculty of theology. That Buridan was able to escape the charges of theological scepticism that were directed against his fellow nominalists of the theological faculty was no doubt due, in part, to his personal qualities of prudence and diplomacy. But it was also due to his methodological, rather than metaphysical, way of employing the logic and the epistemological doctrines of nominalism in formulating the character and the evidential foundations of natural philosophy.

The formal logic presented in Buridan's *Summula de dialectica* is closely related, in topical structure and in terminology, to the so-called terminist logic of the thirteenth century represented by the textbooks of William of Sherwood and Peter of Spain. Though it presupposes the nominalist thesis that general terms are signs of individuals and not of common natures existing in individuals, it does not exhibit any strong evidence of direct influence by the logical writings of Ockham, and it may well have been developed independently of such influence on the basis of the modern logic (*logica moderna*) already well established in the Arts faculties of Oxford and Paris. The doctrine of the supposition of terms, basic to this logic, is used in defining the functions of logical operators or syncategorematic signs in determining the truth conditions of categorical propositions of various forms, and in formulating the laws of syllogistic inference both assertoric and modal. Treatises on topical arguments, fallacies, and on the demonstrative syllogism, conclude the work. Buridan's *Sophismata*, designed to

constitute a ninth part of the *Summula*, was apparently written much later in his life, since it contains criticisms of the theory of propositional meanings, or *complexe significabilia*, which Gregory of Rimini introduced in 1344. This work presents a very fully developed analysis of meaning and truth which corresponds fairly closely to that of Ockham's *Summa logicae*, but it goes well beyond the work of Ockham in presenting original and highly advanced treatments of the problem of the non-substitutivity of terms occurring in intensional contexts, and of the problem of self-referential propositions represented by the paradox of the Liar. Buridan's treatment of these problems exhibits a level of logical insight and skill not again equalled until very recent times. His treatise on *Consequentiae*, which develops the whole theory of inference on the basis of propositional logic, marks another high point of medieval logic whose significance has only been appreciated in the twentieth century." (pp. 442-444 of the reprint)

From: Moody Ernest A. Moody, "Jean Buridan", in: Charles C. Gillispie (ed.), *Dictionary of Scientific Biography*, Vol. II, New York: Charles Scribner's Sons 1969, pp. 603-608. Reprinted in: E. A. Moody, *Studies in Medieval Philosophy, Science, and Logic. Collected Papers 1933-1969*, Berkeley: University of California Press 1975, pp. 441-453.

PHILOSOPHICAL GRAMMAR

"Anneliese Maier once remarked of later scholastic natural philosophy that, «what changes is the method of knowing nature», so that «what is interesting is not the knowledge (*scientia*), but the method of knowing (*modus sciendi*)». (36) Buridan was one of the major agents of this change. His contribution was to rewrite the grammar of philosophy,

supplanting older forms of inquiry with the more powerful method of the *Summulae de Dialectica*, the compendium of logical teachings that was his masterwork. By welding the logic of the *moderni* together with the indigenous Parisian tradition of propositional logic into a single, comprehensive package, he was able to effect a quiet revolution in the speculative sciences. The *Summulae* is essentially a 'how-to' book for the philosopher. The student who mastered its techniques would be equipped not only to read authoritative texts with confidence, but also to advance his knowledge through independent study and dialectical engagement with others.

To modern readers, the *Summulae* looks like a commentary on another text (which it is) on the way to a systematic overview of Aristotelian logical theory. But appearances can be deceiving. Buridan tends to be skeptical of systematizing pretensions in other fields,(37) and there is nothing in his remarks to suggest that he is interested in logical theory in the modern sense. Like most of his colleagues in the arts faculty, he believed that logic and grammar are not speculative but «practical sciences, for they teach its how to construct good syllogisms and well-formed expressions».(38) Once, when asked where the science of dialectic is taught, he does not reply 'in the *Summulae*'. Rather, his answer fragments along the lines of the division of sciences in the arts curriculum: «If it is asked where the science of dialectic is taught, we say that it is taught in the book of the *Metaphysics* as far as metaphysical conclusions are concerned, in the book of the *Posterior Analytics* as far as the conclusions of the posterior science [of demonstration] are concerned, in the book of the *Physics* as far as physical conclusions are concerned, and so on for the other [special] sciences». (39) If Buridan does have a theory of logic, it must be extracted piecemeal from these texts and from the *Summulae*, often with great difficulty, and always with the nagging uncertainty that we have not quite captured what is going on.(40) It seems a better hermeneutical strategy to take Buridan at his word when he says that what holds logic

together is not any single subject matter, but its relation to other subjects in the arts curriculum, over which it is said to rule.(41) How did this new logic change the practice of speculative philosophy? Here we must turn to the details, which I cannot explore here. Suffice it to say that the extent to which Buridan uses logical techniques to clarify and resolve speculative questions is striking even by medieval standards. Thus, we find him considering the nature of universals by determining the significance of terms such as 'universal', 'whole' and 'part'; the relation between bodies and souls by establishing which names have been imposed on the soul to signify distinct natures and which signify merely diverse operations; the limits of human knowledge by asking how the existence of a substance can be inferred from the existence of an accident; the proper subject matter of psychology by distinguishing the various definitions of the soul; the nature of virtue by representing it in terms of the analytical concept of *impetus*; or the basis of human freedom by examining the epistemic character of propositions the will is capable of accepting or rejecting. What these topics have in common is the dialectical method taught in the *Summulae*. The *Summulae* gives the rules of the game." (pp. 44-46)

Notes

(36) Annelise Maier, *Ausgehendes Mittelalter. Gesammelte Aufsätze zur Geistesgeschichte des 14. Jahrhunderts*, I Band. Roma: Edizioni di Storia e Letteratura 1964: «was sich ändert, ist die Methode des Naturekenntnis» (p. 434); «was interessiert, ist der modus sciendi, nicht die scientia» (p. 439).

(37) For example, he doubts whether anyone could show that the whole of physics is one, or even the whole of metaphysics (*In Metaphysicen Aristotelis Quaestiones* VI, 2, Johannes Buridanus 1518, fol. 33vb). Buridan has a more organic conception of the unity of each speculative science. Thus, «the whole of metaphysics derives its unity from our attribution of everything to it to the term 'being', just as an army is unified by its

commander» (*In Metaphysicen Aristotelis Quaestiones* VI, 2, Johannes Buridanus 1518, fol. 34ra). The commander metaphor is used of logic in the preface to the *Summulae*, but in the sense of leading reason to its desired goal (demonstrated truth) and repelling the invader (fallacies), not in the sense of unifying the study of dialectic.

(38) Buridan, *In Metaphysicen Aristotelis Quaestiones* VI, 2, Johannes Buridanus 1518, fol. 34rb: «logica et grammatica sunt scientiae practicae, docent enim quomodo faciamus bonos syllogismos et orationes congruas».

(39) Buridan, *In Metaphysicen Aristotelis Quaestiones* VI, 4, Johannes Buridanus 1518, fol. 15va: «Et si quaeratur ubi traditur illa scientia dialectica, dicitur quod in libro Metaphysicae quantum ad conclusiones metaphysicales, et in libro Posteriorum quantum ad conclusiones posterioristicas, in libro Physicorum quantum ad conclusiones physicales, et sic de aliis».

(40) See especially his remarks on modal syllogisms. Of course, by treating Buridan's logic as *praxis* rather than *theoria*, I am not calling into question all of the good scholarship that has been done on its different aspects over the past few decades, and from which I -- like every other student of Buridan -- have learned a great deal. These books and articles give legitimate readings of the text, but in a different way, i.e., by showing Buridan's place within the broader thematic traditions of medieval logic, e.g., as regards doctrine of supposition, syllogisms, consequences, sophismata, etc.

(41) In any case, logic as a freestanding discipline would have made little sense to someone accustomed to thinking of it as «the art of arts (*ars artium*)». The value of logic as a discipline is expressed in terms of its relation to other disciplines. That is why Buridan begins the *Summulae* with the quotation from the pseudo-Aristotelian *Rhetoric to Alexander* (*Summulae* I, preface, New Haven, Yale University Press, 2001, p. 25): «Just as the commander is the savior of the army, so is reasoning with erudition the commander of life (*rationatio cum eruditione est dux vitae*)».

From: Jack Zupko, "John Buridan and the Origins of Secular Philosophical Culture", in: Stefano Caroti & Jean Celeyrette (eds.), *Quia Inter Doctores Est Magna Dissensio. Les débats de philosophie naturelle à Paris au XIVe siècle*, Firenze: Leo S. Olschki 2004, pp. 33-48.

SUMMARY OF THE SUMMULAE DE DIALECTICA (to be completed)

References to the English translation are from: John Buridan - *Summulae de Dialectica* - Translated by Gyula Klima, New Haven, Yale University Press, 2001.

"In its most extensive form Buridan's *Summulae* consists of the following eight treatises:

- I. On Propositions
 - II. On Predicables
 - III. On Categories
 - IV. On Suppositions
 - V. On Syllogisms
 - VI. On Topics
 - VII. On Fallacies
 - VIII. On Definitions, Divisions, and Demonstrations
- Buridan himself at one time regarded his *Sophismata* as treatise IX, but there is no genuine formal connection between treatise IX and the rest, which are organized quite differently. (5)

On the texts commented upon by Buridan

Buridan's basic idea was to 'read', i.e. comment upon, basic introductory texts. For Tracts I-VII the basic text was taken from a contemporaneous interpolated version of Peter of Spain's thirteenth-century handy introduction to logic, the *Tractatus* or *Summulae logicales*. Buridan himself added a special tract to deal

with demonstrative knowledge, which he prefaced with two short expositions on division and definition, subjects that Peter and the writers of the adapted texts had neglected, as had other authors of thirteenth-century handbooks of logic. When dealing with the introductory texts commented upon by Buridan in his *Summulae*, one has to distinguish between the Tracts I-VII and Tract VIII, *De demonstrationibus*.

[a] As for *Summulae* I-VII, it is clear throughout the work that Buridan had a text at his elbow that had already been considerably altered in the course of transmission, and which he himself may have subjected to further changes, and time and again major ones at that. Buridan regularly uses the term 'auctor' when referring to the text he comments on. Peter of Spain's work originally contained twelve treatises. (6) The 'auctor' had fused Peter's Tracts 8-12 (on relatives, ampliation, appellation, restriction, and distribution) with his own version of the tract on supposition (treatise IV). That left seven treatises. Thus Buridan's additional tract *De demonstrationibus* became *Summulae* VIII. Buridan's text of tracts I-VII consists of lemmata from the auctor's *Summulae*, where the material is presented in such a way as to be easily memorized, and more extensive comments on those lemmata. As Pinborg (7) pointed out, the way Buridan speaks about his choice of Peter's work permits the conclusion that "using Peter of Spain's manual was not the obvious thing to do", and Pinborg may well have been right in his conjecture that Buridan was the first to introduce Peter's manual as a textbook at university level in Paris, where earlier it had been used only at less exalted levels of education ('pro iunioribus'; see also section 11.2.4). Buridan might have made his choice out of the different versions available at the time, but seems to have considered it unnecessary to make a complete version of his own, as may appear from his frequently criticizing that auctor's text quoted in the lemmata.

Buridan commented very extensively on the standard material, which he often re-interprets in ways its authors could scarcely have imagined. He certainly makes no secret of his intentions, as

can be gathered from the general introduction (*Prooemium*) prefaced to the whole work:

Prooemium: "Propter quod de logica tota volens sine nimis exquisita perscrutatione disserere quaedam communia, elegi specialiter descendere ad ilium logicae tractatum brevem quem venerandus doctor magister Petrus Hispanus dudum composuit, exponendum et supplendum, immo etiam et aliter aliquando quam ipse dixerit et scripserit dicendum et scribendum, prout mihi videbitur opportunum."

[Therefore, wishing to learn something in general about logic in its entirety without an excessively detailed investigation, I have chosen to deal in particular with that short treatise of logic which the venerable professor, master Peter of Spain, composed a while ago, by commenting on and supplementing it; indeed, occasionally I am going to have to say and write things that differ from what he has said and written, whenever it appears to me suitable to do so. *Translation by Gyula Klima, Summulae*, p. 4]

In the Renaissance edition of what was issued as Buridan's *Summulae*,⁽⁸⁾ John Dorp's comments have taken the place of Buridan's and thus the reader had no means of seeing how original Buridan was. This much is certain, as Buridan went on commenting upon the 'auctor', he seems to have grown increasingly irritated with the text at his elbow, and sometimes simply dispensed with it, composing instead an alternative text to comment on (thus I, 8, IV and VII).

[b] The basic text underlying Buridan's eighth treatise *De demonstrationibus* is still more difficult to identify. It is not found in any interpolated text of Peter's *Summulae* and it is uncertain if it is by Buridan's own hand. The first major survey of logic to include a chapter on demonstration was William of Ockham's *Summa logicae*, which may be only about ten years older than Buridan's, but it is unknown to what degree, if any, Buridan, or his exemplar, was inspired by Ockham. In any event, by adding treatise VIII Buridan produced a book covering all the main subjects of Aristotle's *Organon* as well as the usual

medieval additions to logic, such as the doctrine of the properties of terms.(9)" (pp. XIII-XV)

Notes

(5) For more evidence of the independent character of the *Sophismata*, see: Johannes Buridanus, *Summulae. De practica sophismatum*, edited by Fabienne Pironet, Turnhout 2004, esp. pp. XII-XIV.

(6) See Peter of Spain, *Tractatus, called afterwards Summule logicales*. First Critical Edition from the Manuscripts with an Introduction by L.M. de Rijk, Assen 1972, ch. 3 of the introduction.

(7) J. Pinborg, 'The Summulae, Tractatus 1, De introductionibus', in: *The Logic of John Buridan*. Acts of the Third European Symposium of Medieval Logic and Semantics, ed. J. Pinborg, Copenhagen 1976, p. 72.

(8) Johannes Buridanus, *Compendium totius logicae*, cum Joannis Dorp expositione. Unverand. Nachdr. der Ausg.: Venedig 1499, Frankfurt/Main 1965.

(9) For more information about Treatise VIII, *De demonstrationibus*, see De Rijk's edition of this treatise, that appeared as part 8 in the present series.

From: Ria van der Lecq, "Introduction" to: Johannes Buridanus, *Summulae de propositionibus*, Turnhout: Brepols 2005.

"The first seven treatises of Buridan's work do, indeed, correspond to this description though the revision is sometimes so thorough that it is difficult to discern the remaining traces of Peter's text. Treatise 8, in which the main topic is the theory of knowledge and science, has no counterpart in Peter's *Tractatus*, nor has Treatise 9, *On Sophisms*, though it is not totally unrelated to Peter's Treatises 8-12. Treatise 8 retains the format adopted for the earlier part of the work, viz. alternation between (a) a text consisting of logical theorems (concise definitions, rules, etc.) and

(b) an extensive commentary which explicates and supplements those theorems. The difference of Treatise 9 consists in the fact that the material for commentaries is furnished by logical examples -- *sophismata* -- rather than by logical theorems. The treatise on sophisms illustrates how some of the theorems of the preceding treatises may be put to use, but it is not a systematic practical companion to the preceding collection of theorems. In short, Treatise 9 bears all the marks of having an independent origin from the rest of the *Summulae* into which it was never successfully integrated." (pp. XII-XIII)

From: Fabienne Pironet, "Introduction" to: Johannes Buridanus, *Summulae: De practica sophismatum*, Turnhout: Brepols 2004.

THE EDITORIAL PROJECT OF THE SUMMULAE

"The present fascicle is number one of the first complete edition of Buridan's *Summulae*, which contains nine treatises, including a new edition of his *Sophismata*. The plan is being realized by an international team composed of scholars from Belgium, Denmark and the Netherlands. A first and overly optimistic version of the project was discussed in 1975 at the Third European Symposium on Medieval Logic and Semantics, which was devoted to the logic of John Buridan. In 1986 The Buridan Society was formed with the explicit purpose of producing an edition of the *Summulae*, and guidelines for the work were laid down. The following scholars initially joined the Society: E.P. Bos, H.A.G. Braakhuis, S. Ebbesen, H. Hubien, R. van der Lecq, E Pironet, L.M de Rijk, J.M.M.H. Thijssen.

To make the task manageable, it was decided to aim only at an edition based on a handful of manuscripts carefully selected on the advice of H. Hubien, who had made pilot studies of the

tradition. Also, considering that all participants in the project were scholars with many other obligations and hence likely to be distracted from the work on Buridan at unpredictable times, it was decided to publish each fascicle of the work as soon as it was finished without regard to regular intervals or an orderly progression from fascicle 1 to fascicle 9." (p. XI)

"Buridan's philosophical production is closely connected to his work as a university teacher. He wrote commentaries on Aristotle, some of which have been edited, as has also his treatise on consequences. And then there is his *Summulae* or *Summa Logica(e)*, undeservedly neglected by historians of logic because it has never been printed. To be sure, there are printed books from the 16th, 17th and 18th centuries purporting to contain the work, but in fact they do not, despite their frequently going under Buridan's name. A fair number of preserved manuscripts, however, testify to the popularity of the *Summulae* during the late 14th century and well into the 15th, especially at the Central European universities".

In its most extensive form Buridan's *Summulae* consists of the following eight treatises:

I. On Propositions

II. On Predicables

III. On Categories

IV. On Suppositions

V. On Syllogisms

VI. On Topics

VII. On Fallacies

VIII. On Definitions, Divisions, and Demonstrations

Buridan himself at one time regarded his *Sophismata* as treatise IX, but there is no genuine formal connection between treatise IX and the rest, which are organized quite differently. (*)" (pp. XII-XIII)

Notes

(*) For more evidence of the independent character of the *Sophismata*, see: Johannes Buridanus, *Summulae. De practica sophismatum*, edited by Fabienne Pironet, Turnhout 2003, esp. pp. XII-XIV.

From: Ria van der Lecq, "Introduction" to: Johannes Buridanus, *Summulae de propositionibus*, Turnhout: Brepols, 2005.

Treatise I. De propositionibus

"The opening chapter of *De propositionibus* consists of six parts and covers some preliminaries. In the first part dialectic (logic) is defined in a way that echoes Aristotle's *Topics* 1.1 101b2-4: dialectic is the art of arts (*ars artium*), which has access to the principles of all inquiries (*methodi*). Dialectic should be distinguished from science (*scientia*). In every science training in logic has to come first, since every science needs to use syllogisms or other types of argument, the doctrine of which is taught by logic. Since logic is mostly exercised in a disputation, and a disputation cannot take place without speech (*sermo*) nor can speech occur without utterance (*vox*) or utterance without sound (*sonus*), sound is the starting point of Buridan's inquiry. Sound is divided into utterance and non-utterance, and utterance (*vox*) into significative and non-significative. Some significative utterances (*voces significativae*) are significative by nature, others by convention. Chapter concludes with the division of conventionally significative utterances into complex (expressions or *orationes*) and incomplex ones (noun and verb). In his comments on this last distinction Buridan mentions Aristotle's division of 'expression' (*oratio*) into mental, vocal and written expressions. The distinction between mental and vocal language plays an important role in the *Summulae* and in Buridan's semantics in general. Spoken words and propositions are

meaningful only by convention, whereas mental words and propositions signify naturally. Mental propositions are the bearers of truth and falsity. Vocal propositions are propositions only in so far as they designate mental propositions, and vocal propositions are true or false only in so far as they designate true or false mental propositions. (22)

Chapter 2 gives the traditional definitions of 'noun', 'verb' and 'expression' (*oratio*). Thus, a noun is a conventionally significative utterance, without time (*vox significativa ad placitum sine tempore*). Obviously, this definition does not apply to mental words: mental words are not *voces* and do not signify *ad placitum*. Peter of Spain does not intend to define mental nouns, but only spoken nouns, concludes Buridan. This is one of the first signs of Buridan's problems with Peter's text.

In chapter 3 we arrive at the core of this treatise: propositions. Peter's definition (a proposition is an expression that signifies something true or false) gives rise to Buridan's repeated warning that this definition applies to spoken language only (1.3.1). A mental proposition does not signify something true or false, it is something true or false. Next (1.3.2), propositions are divided in categorical and hypothetical propositions. In this part Buridan presents his theory that the concepts involved in a mental proposition are its subject, its predicate and a so-called complexive concept. Subject and predicate are called the matter of a proposition, because they are presupposed when a proposition is formed by adding an affirmative or negative complexive concept, i.e. the copula. The following parts discuss the definitions of subject and predicate (1.3.3), and various classifications of propositions: assertoric (*de inesse*) and modal (1.3.4), universal, particular, indefinite and singular (1.3.5) and, finally, affirmative and negative (1.3.6).

Chapter 4 is about the opposition between pairs of categorical propositions that "share both terms", i.e. in which the same two terms occur. If the shared terms occur in the same order, the propositions are contraries, subcontraries, contradictories or subalterns. This results in a simple square of opposition

presented in 1.4.2 (page 61). When categorical propositions are *per se* true, they are said to be in natural matter (1.4.3). When they are *per accidens* true, they are said to be in contingent matter; when they are impossibly true, they are said to be in remote matter. This is the way Buridan explains Peter of Spain's text, although he himself prefers to use the term 'matter' for the subject and predicate of a proposition, as explained in 1.3.2. The fourth and final part of chapter 4 (1.4.4) explains what it means for propositions to be contraries, subcontraries, contradictories or subalterns.

Chapter 5 discusses the concept of formal equivalence (*aequipollentia* or *aequivalentia*) of propositions. The various relationships between categorical propositions with oblique terms and those between categorical propositions in which the predicate precedes the copula are clarified by means of two diagrams.(23) In addition four rules of equivalence are formulated.

Propositions can be converted in three ways: simply, accidentally, and by contraposition. This thesis as found in Peter of Spain's manual is discussed in chapter 6. What is a conversion?

According to Buridan a formal conversion is the formal consequence holding between two propositions that share both terms, but in reverse order (1.6.1). In a simple conversion (1.6.2) the quality and the quantity of the propositions remain the same, as in 'some man is an animal; therefore, some animal is a man'. More complicated is accidental conversion (1.6.3), which involves changing the quantity of the proposition, as in 'every man is an animal; therefore, some animal is a man'. Various doubts arise, e.g. how should we convert 'some stone is in a wall' or 'a donkey is dead' or propositions about the future or the past? Buridan solves most of these problems by means of his theory of supposition. Conversion by contraposition (1.6.4) means changing the finite terms into infinite ones, as in 'some man is not a stone; therefore, some non-stone is not a non-man'. Buridan shows that conversions of this kind are not formal.

Hypothetical propositions of various kinds are discussed in chapter 7. Buridan denies Peter of Spain's thesis that a

hypothetical proposition contains two categorical propositions. It would mean that a true hypothetical proposition like 'if a donkey flies, then a donkey has feathers' would have its principal parts false, which is absurd. Buridan finally arrives at a definition which is 'safer' (*tutior*) than Peter's: a hypothetical proposition is a proposition that has several subjects, several predicates and several copulas, but none of these is predicated of the rest by means of one copula (1.7.1). Peter distinguishes six species of hypothetical propositions: conditional, conjunctive, disjunctive, causal, temporal, and local. Buridan points out that some texts do not provide the species 'temporal' and 'local', and with good reasons, as he argues (1.7.2). In Peter's view the truth of a conditional requires that the antecedent cannot be true without the consequent. Given his remarks in 1.7.1 Buridan cannot possibly agree with this opinion, although "for the sake of brevity, and because phrases signify conventionally", he goes along with Peter's manner of speaking (1.7.3). On the topic of causal propositions Buridan corrects Peter, saying that "it is not properly said that the antecedent is the cause of the consequent". One should rather say that "the thing signified by the antecedent is the cause of the thing signified by the consequent" (1.7.6). A similar critical attitude regarding Peter's text can be seen in 1.7.8 (*De locali*). There Buridan proposes to use a less complicated method to decide whether a hypothetical proposition (be it temporal or local or pertaining to some other Aristotelian category) is true or false.

Chapter 8, on modal propositions, is the last chapter of the treatise. Apparently, the topic was very important for Buridan, for not only is it very large, he also wrote almost the entire chapter himself, saying that "the author of the *Summulae* discusses modal propositions very briefly and incompletely." Only the first line is Peter's: "A mode is a determination belonging to the thing" (1.8.1). Obviously, taken literally, this sentence expresses a realist position, which Buridan rejects. Buridan's ontology and semantics require that 'thing' (*res*) in this context is restricted to supposit for significative terms. 24 The first eight paragraphs

(*partes*) of the chapter discuss propositions that are modal in the proper sense, i.e. propositions in which the mode ('possible', 'impossible', 'necessary', 'contingent', 'true' or 'false') affects the copula, as in 'every man is necessarily an animal'. These are distinguished from propositions in which the modal term is predicated of a *dictum*, as in 'it is possible that a man runs' (*possibile est hominem currere*). The latter are called composite modals, but, according to Buridan, composite modals are in fact assertoric propositions. In proper modals the mode has to be placed between the subject and the predicate (1.8.3); the mode is a part of the copula. In the following parts Buridan discusses the quality (1.8.4) and quantity (1.8.5) of proper modals. Part 7 is about equivalency (*equipollentia*) of modal propositions, resulting in a *magna figura* of oppositions (see text: p. 100), and part 8 contains some rules regarding conversions of modal propositions, e.g. 'if the antecedent implies the consequent, then the contradictory of the consequent implies the contradictory of the antecedent'. The ninth part (1.8.9) discusses composite modals. Rules regarding their quality, quantity and conversion are the same as the rules for assertoric propositions. The remaining part of the book (1.8.10) discusses propositions that are contingent both ways (*de contingenti ad utrumlibet*).

11.3.3. *Prooemium*

"Just as the commander is the savior of the army, so is reasoning with erudition the commander of life."

This is Buridan's opening statement of the Preface (*Prooemium*) of the *Summulae*. The quotation comes from a "certain letter" of Aristotle to Alexander. The attribution appears to be false, (25) but this is not the place to discuss that question. It is Buridan's interpretation of this statement that concerns us here. The commander of an army, says Buridan, saves the army in two ways: first, by repelling the enemy, second, by leading it in the right direction. Logic is to be called reasoning with erudition (*ratiocinatio cum eruditione*), because it educates (*erudit* lit. 'polishes') us in all modes of reasoning and in every science, and

it can be compared to the commander of an army, because it eliminates false arguments and it directs us to good arguments. Furthermore, Buridan points out that, according to Aristotle, there are two most eligible ways of life: the *vita contemplativa* and the *vita civilis seu activa*: the life of a scholar and a scientist and the life of an active citizen. Training in logic helps the scholar to obtain knowledge and discover the truth, and it helps the active citizen to decide what to strive after and what to avoid. In other words, logic is important not only for (future) scholars, but also for (future) politicians. It is the main constituent of a truly liberal education.” (pp. XX-XXV)

Notes

(22) For the importance of this distinction see my introduction to *De suppositionibus*, esp. p. XXV and my paper 'Mental Language: A Key to the Understanding of Buridan's Semantics' (forthcoming).

(23) Gyula Klima (in his translation pp. 44-45) presents a summary reconstruction of these figures in which he shows how these two diagrams are related to the modal diagram of chapter 8. For a detailed discussion of Buridan's modal diagram Klima (*ibid.* p. 43, n. 77) refers to G.E. Hughes, "The Modal Logic of John Buridan," in *Atti del Convegno internazionale di storia della logica: Le teorie delle modalità*, ed. G. Corsi, C. Mangione, and M. Mugnani, Bologna 1989, pp. 93-111.

(24) As I argued in my introduction to *Summulae, De suppositionibus* (p. XXVI), Peter's realism might be one of the reasons for Buridan's growing irritation with Peter's text.

(25) John Buridan, *Summulae de Dialectica*, transl. Klima, p. 3, n. 1.

From: Ria van der Lecq, "Introduction" to: Johannes Buridanus, *Summulae de propositionibus*, Turnhout: Brepols, 2005.

Treatise II. De praedicabilibus

"The present edition contains the second tract, *De praedicabilibus*, which deals with the five 'predicables', introduced by the Neoplatonist commentator of Aristotle, Porphyry (c. 233 - c. 304 A.D.) in his introductory book (*Isagoge*) to the Stagirite's *Categories*, viz. 'genus', 'species', 'differentia', 'proprium', and 'accidens'. From as early as the eleventh century, medieval authors commented upon Boethius' (480 - 524) translation of, and commentary upon, this work.

Buridan's discussion of the predicables is mainly based on the corresponding tract of Peter of Spain's manual. His comments are preceded by the complete text of the lemma from Peter to be discussed. It should be no surprise that Buridan's quotations should go back to an adapted version of Peter's text." (p. XVII)

"II.3.2. A summary of its contents

2.1.1. The opening chapter discusses preliminary items. In this section the technical use of the word 'praedicabile' is explained. Buridan's terminism notably appears from his definition of the term 'praedicabile' properly used, in which the phrase 'praedicari de pluribus' equals 'supponere pro pluribus'.

2.1.2. The formal difference is discussed which exists between 'praedicabile' and 'universale', in spite of their being said convertibly of one another. Buridan feels obliged to reject Hispanus' view of the matter. Again, Buridan's terminism comes to the fore in his identifying 'inesse' and 'praedicari vere et affirmative'.

2.1.3. The division of the predicables is given, including an alternative one given by those who start from the erroneous assumption that the main division of the predicables should be based upon the distinction 'in quid' versus 'in quale'.

2.2. Chapter II deals with genus.

2.2.1. The common definition of genus is given and explained. Equivocal terms (such as 'canis') are said not to be the genus of their different meanings. Buridan's terminism makes him

underline that if 'animal' is said to be predicated of 'man', both the subject and the predicate term have material supposition.

2.2.2. The concepts 'idem ('different' or 'diversum') genere, specie' etc. are discussed. It is noteworthy that the identification of 'subject-substrate' and 'accident' (which is found in some versions of Hispanus' text: 'in aliquibus libris') is rejected by Buridan (lines 75 ff.).

2.2.3. The phrases 'in eo quod quid' and 'in eo quod quantum' etc. are explained.

2.2.4. - 2.2.5. An alternative definition of 'genus' and the latter's usual division into 'genus generalissimum' and 'genus subalternum'.

2.2.6. The definition of 'genus generalissimum' is given and completed by Buridan. In line with common doctrine, the 'genus generalissimum' is divided into the ten categories, and 'ens' is said not to be their 'genus superveniens'.

2.2.7. presents the definition of 'genus subalternum'. Again, the role of material supposition is pointed out.

2.3. This chapter discusses 'species'.

2.3.1. - 2.3.4. 'Species' is defined and divided. Buridan corrects Peter of Spain's definition of 'species specialissima'. The 'Porphyrian Tree' is introduced and explained.

2.3.5. contains the definition of 'individuum' and discusses some interesting 'dubia' on this matter, e.g. the question whether, contrary to the definition of 'individual', individual terms such as 'Johannes' may be predicated of many. Buridan rejects such suggestions by pointing to the equivocation involved in the use of proper names said of diverse individuals. Also the peculiar position of the term 'deus' is discussed.

2.4. Chapter IV deals with 'differentia'.

2.4.1.-2.4.5. The logical use of the word 'differentia' is explained. In Buridan's view, the phrase 'differentibus specie' found in the common definition should be dropped. An alternative definition of 'differentia' is mentioned, and the use of the phrases 'differentia constitutiva' and 'differentia divisiva' is explained. Finally, a corollary is added.

2.5. This chapter deals with 'proprium'.

2.5.1.-2.5.2. The predicable 'proprium' is defined. In this context, some key terms (e.g. 'praedicatio essentialis' versus 'praedicatio denominativa') are discussed, including Buridan's favourite device 'connotatio aliena'.

2.6. This chapter deals with 'accidens'.

2.6.1. Porphyry's definition of the predicable 'accidens' is explained along the lines of terminist logic. Buridan remarks that the 'adesse' of the definition should not be taken in the sense of 'inesse secundum inhaerentiam proprie dictam', rather 'adesse alicui subiecto' is equivalent to 'praedicari vere et affirmative de illo'.

2.6.2. Another definition of 'accidens' is given. In an interesting 'dubitatio', Buridan discusses the relationship between 'praedicabile' and 'praedicatum' and that between the four 'predicates' found in Aristotle's *Topics* and the five 'Porphyrian predicables'.

2.6.3. A third definition of 'accidens' is discussed.

2.6.4.-2.6.5. 'Accidens' is divided into 'accidens separabile' and 'accidens inseparabile', and the proper nature of the latter is explained.

2.7. The final chapter deals with the specific properties of each of the five predicables and the properties they have in common. It contains a great number of interesting incidental remarks on various matters, such as 'praedicatio univoca' vs 'praedicatio aequivoca', and the distinction between 'real priority' and 'formal priority' (2.7.2.); the diverse grammatical 'modi significandi' (2.7.4.); and the logical difficulties involved in the use of comparatives and superlatives (e.g. 'albius' as the species of 'hoc album' and 'illud album').

In the seventh chapter, four of Buridan's five lemmata are completely lacking in Peter's text. Conversely, Peter's final sections (*De predicatione* and *De denominativis*, p. 25, 8-32) are missing in Buridan's tract on the predicables, but both from a doctrinal and from a didactic point of view this omission is quite

understandable, as these items are more properly discussed in the third tract, *De praedicamentis*.(13)

Buridan's work consists of elementary exegesis as well as extensive objections and dubitationes in which specific questions are dealt with, mostly in an original fashion." (pp. XXIV-XXXI)

Notes

(13) See Johannes Buridanus, *Summulae in Praedicamenta*, ed. E.P. Bos, 3.1.3.

From: L. M. de Rijk, "Introduction" to: Johannes Buridanus, *Summulae: De praedicabilibus*, Nijmegen: Ingenium Publishers 1995.

Treatise III. In praedicamenta

"In his commentary Buridan presents an introductory section (3.1), in which the so-called *antepredicamenta* are discussed: first the definitions of *aequivoca* ('equivocals') (3.1.1), *univoca* ('univocals') (3.1.2) and *denominativa* ('denominatives') (3.1.2); then the division of *voces* ('words') (3.1.4) and of *eorum quae sunt* ('of those things that are') (3.1.5). Thirdly, two rules on the logical relations between predicates (3.1.6) and on the relation between genus and species are discussed (3.1.7). Buridan winds up this section with a division of *incomplexa* ('things without combination', 'incomplex things') into the ten categories (3.1.8) and the discussion of a property common to the ten categories (3.1.9), viz. that incomplex things cannot form an affirmation or negation.

In section 3.2 Buridan discusses the categories in the proper sense. First a division and some characteristics of substance (3.2.1 - 3.2.3), next six properties belonging to the members of this category are treated. Section 3.3 is on quantity: first divisions and

species of quantity are discussed (3.3.1 - 3.3.4), then three properties (3.3.5 - 3.3.7). Section 3.4 is on relation: first Buridan gives definitions and species (3.4.1 - 3.4.2), then four properties (3.4.3 - 3.4.6). The section On quality contains a definition of quality and *quale*, and their four kinds (3.5.1 - 3.4.6), then three properties and a note on terms belonging to different categories (3.5.7 - 3.5.10). In section 3.6 Buridan discusses the categories of *actio* (action) and of *passio* (being acted upon) are dealt with as a whole; he presents their definitions, kinds and four properties. In section 3.7 he discusses the four last categories: 'when', 'where', 'being-in-a-position' and 'having' (*quando*, *ubi*, *situs* and *habitus*).

Sections 3.8 - 3.10 discuss what are traditionally called the postpraedicamenta: 3.8 is on four kinds of opposition (*oppositio*), 3.9 is on movement (*motus*) and mutation (*mutatio*) (their kinds, and what is contrary to these *postpraedicamenta*); 3.10 is on the meanings of *prius* ('prior'), *simul* ('simultaneous') and *habere* ('to have' -- in various senses, see below, III, 3. 4, section IX).

Insight into the philosophical principles which underlie Buridan's commentary is a precondition for understanding his detailed interpretations of the categories. These principles can partly be gathered from the *Summulae* themselves, but Buridan has made them especially explicit in other treatises, notably his *Praedicabilia* (16), *Suppositiones*, *Ampliationes* and *Appellationes* (17). I shall try to present them here briefly. I shall not discuss Buridan's position in the history of the theories about the categories, for this would exceed the proper limits of our introduction.

It should be noted that Buridan's view of the categories is more elaborate, and sometimes clearer in his *Quaestiones in Praedicamenta* than in the treatise from the *Summulae* discussed here." (pp. XIX-XX)

Notes

(16) Buridan's commentary (*Summulae*) on Porphyry (the *Praedicabilia*) will be edited shortly by L.M. de Rijk; his *Quaestiones in Porphyrium* have not yet been edited [see the edition by Ryszard Tatarzynski in: *Przegląd Tomistyczny* 2: 111-195 (1986), note added by R. Corazzon]

(17) ed. M. E. Reina, 'Giovanni Buridano, *Tractatus de suppositionibus*, prima edizione a cura di Maria Elena Reina', in *Rivista critica di storia della filosofia* 12 (1957), pp. 175-208; 323-353. In the editorial project of which the present text is a part, Dr. R. van der Lecq is preparing a new critical edition of Buridan's *De suppositionibus* [published in 1998].

[For a detailed summary of the contents see pp. XXIV-XLIV]

From: E. P. Bos, "Introduction" to: Johannes Buridanus, *Summulae in praedicamenta*, Nijmegen: Ingenium Publishers 1994.

Treatise IV. De suppositionibus

"The present edition contains the fourth treatise *De suppositionibus*. As can easily be gathered from the *index capitulorum* (below, p. 3), it consists of six chapters, which deal with various aspects of supposition. (20)

Each chapter consists of several parts containing a lemma followed by an exposition and commentary. Unlike the lemmata of tracts I, II and III, the lemmata of *De suppositionibus* are not taken from Peter of Spain's *Tractatus*. Buridan discusses the topics of Peter's chapters VI (*De suppositionibus*), VIII (*De relativis*), IX (*De ampliationibus*), X (*De appellationibus*), XI (*De restrictionibus*) and XII (*De distributionibus*), but he has used an alternative text. He does not even refer to Peter of Spain.(21) An indication that Buridan may have written the basic text himself is found in the lemmata of 4.3.7.5 and 4.3.8.4, which contain a

reference to another work of his, the *Sophismata*. Moreover, the commentary never indicates that Buridan disagrees with the lemma-text. More than once, e.g. in 4.1.2 and 4.1.4, he expresses some doubts concerning the text, but he subsequently solves them. Finally, in *De suppositionibus* Buridan does not refer to any *auctor*, as he frequently did in the previous treatises.

One may wonder why Buridan felt he could not go on commenting upon Peter's text the way he had done in the first three tracts." (pp. XVII-XVIII)

(20) For an excellent introduction to Buridan's theory of language see: M.E. Reina, *Il problema del linguaggio in Buridano*. Cf. also Th. K. Scott's introduction to John Buridan: *Sophisms on Meaning and Truth*, New York, 1966, esp. pp. 22-49 and J. Biard, *Logique et théorie du signe au XIVe siècle*, Paris 1989, pp. 162-202.

(21) A negative reference may be found in 4.3.2 (p. 38).

[Follows a summary of the content of *De suppositionibus* who will give ample information to answer this question, pp. XVIII-XXV]

From: E. P. Bos, "Introduction" to: Johannes Buridanus, *Summulae de suppositionibus*, Nijmegen: Ingenium Publishers 1998.

Treatise V. On Syllogisms

[In preparation]

Treatise VI. On Topics

(Critical edition not yet published)

Treatise VII. On Fallacies

(Critical edition not yet published)

Treatise VIII. On Definitions, Divisions, and Demonstrations

"The present edition contains the eighth tract, *De demonstrationibus*, by far the greater of which deals with demonstrative argument, and for the sake of this prefaces it with a discussion of the standard lore concerning division and definition.

The main division of the work clearly appears from the opening lines (1.1 in the present edition), in which Buridan proposes to deal with demonstration, but thinks it indispensable to discuss first the doctrine of division and definition which lies at the bottom of that concerning demonstrative argument, despite the fact that 'auctor noster' did not pay any attention to this important part of logic ('pars logicae magis nobilis et finalis')." (p. XXI)

"The following sketch of the contents of the three main parts ('materiae') may be given.

PRIMA MATERIA: *De divisionibus*

8.1 contains the general introduction to the whole treatise, and explains its design, especially the addition of the two preambulatory tracts on division and definition.

8.1.1 presents its division and the subdivision of the tract on division, and next it defines the notions 'division' and 'composition'.

8.1.2 explains what is understood by 'componere' and 'dividere'.

8.1.3 discusses the notions 'totum' and 'pars'.

8.1.4 deals with the various divisions of 'totum' and the corresponding kinds of composition and division.

8.1.5 discusses 'tota praedicabilia' and their parts.

8.1.6 is about perfect and imperfect division. Two problematic questions ('dubitationes') are raised, one concerning the division of some genera into their species, the other about why in such cases the genus can be regarded as the totum of its species, rather than the other way round, and how a species is a subjective part of its genus.

8.1.7 discusses the remaining, less common kinds of division.

SECUNDA MATERIA: *De definitionibus*

8.2 The eight common properties of definitions and things defined are enumerated.

8.2.1 The chapter is divided into seven parts, the first of which deals with the eight properties: (a) definitio (i.e. definiens) and definitum are said reciprocally, i.e. they have converse relationships as every definiens is the definiens of its definition, and vice versa; (b) definiens and definitum are mutually convertible; (c) every definiens notifies the definitum in an explicit way; (d) every definiens is a phrase ('oratio'), while every definitum is an incomposite term, or at least less complex than the definiens; (e) neither the definiens nor the definitum are singular terms; (f) nor are they a proposition; (g) no definiens has a parabolic or metaphoric sense; (h) no definiens should suffer from superfluity or deficiency.

8.2.2 Definitions ('definientia') are divided into nominal, quiditative, causal, and descriptive ones.

8.2.3 Nominal definition is defined and discussed.

8.2.4 Quiditative definition is defined, and its properties are dealt with. In a lengthy digression three questions of semantical interest are raised and extensively answered: (a) whether phrases

such as 'nusus simus' are nugatory; (b) whether definitions such as 'simum est nusus cavus' is nominal; (c) whether a subject's property should be defined by including its subject in the definition.

8.2.5 Causal definition is defined and explained, including the diverse kinds of cause (formal, material, efficient, and final cause).

8.2.6 Description is defined, and its use is clarified.

8.2.7 discusses complex definitions and their use in demonstrative arguments.

TERTIA MATERIA: *De demonstrationibus*

8.3 General division of this tract into ten chapters. (...)

8.4 The next chapter deals with similarities and dissimilarities between demonstrative and dialectical argument, and the distinction between true knowledge ('scientia') and opinion.(...)

8.5 This chapter discusses first and indemonstrables principles. (...)

8.6 This chapter deals with the notions 'de omni', 'per se' and 'secundum quod ipsum'. (...)

8.7 The next chapter is about the division of 'demonstratio'.(...)

8.8 This chapter deals with the 'demonstratio propter quid', about which many difficulties ('dubitationes') can be raised, as has already been observed in the introductory text.(...)

Like the treatises I-VII the present one, too, consists of elementary exegesis as well as extensive objections and *dubitationes* in which specific questions are dealt with, mostly in an original fashion and always along the lines of thought found in Buridan's numerous commentaries on Aristotle. (37) "

Notes

(37) The conspicuous coherence in Buridan's thought coming to the fore throughout his various works is rightly highlighted by Sten Ebbesen, 'Proofs and its Limits according to Buridan, Summulae 8', in Z. Kaluza-P. Vignaux *Preuve et raisons ... etc.*, Paris 1984, p. 97: 'John Buridan was (...) remarkably consistent.

He almost invariably says the same about the same things, and what he says about one subject is usually consistent with what he says about any other somehow related subject. His work abounds in cross-references, from one part of a work to another, and from one work to another. He obviously wanted his readers to think of his philosophical works as one coherent corpus presenting one coherent philosophy.

From: L. M. de Rijk, "Introduction" to: Johannes Buridanus, *Summulae de demonstrationibus*, Groningen-Haren: Ingenium Publishers 2001.

[Treatise IX.] Sophismata

"The Place of the Sophismata in Buridan's Work.

As a Master of Arts, Buridan was not allowed to teach or write on questions of theology, but his work covers most of the areas of philosophy. And as was common, most of his work is in the form of commentaries on the works of Aristotle. Most important among these are commentaries on the *Physica*, *De Caelo*, *De Generatione et Corruptione*, *Meteorologica*, and the short physical treatises known as the *parva naturalia*, together with both commentaries and *quaestiones* on the *Metaphysica* and *quaestiones* on the *Ethica ad Nicomachum* and the *Politica*.

In the area designated by scholastics as logic, Buridan wrote three major works, of which the *Sophismata* is one. The largest of these is the *Summula de Dialectica*, and as is noted in its first few lines, the *Sophismata* may be regarded as a ninth tract of that general survey of logic. The other major logical work is the *Consequentiae*, which is a study of the forms of logical inference. While the *Consequentiae* would be recognized today as a work clearly belonging to the field of logic, neither the *Summula* nor the *Sophismata* could any longer be so classified. The medieval

conception of logic, based on classical grammar and rhetoric, Stoic logic, and Aristotle's *Organon* was very broad indeed by modern standards, embracing not only formal logic, but most of what is today known as the philosophy of language, together with some issues that seem now to belong to metaphysics or the theory of knowledge. Thus Buridan is firmly within the tradition when he includes within a summa of logic consideration of the nature of language, types of languages, the nature of signs, types of terms, the structure of concepts, the nature of propositions, a theory of meaning, a theory of reference, and the nature of truth. However, because of the way many issues were conceived, even this way of classifying the topics covered is apt to be misleading, and the reader would do well to learn the nature of medieval logic not through descriptions in secondary works, but through a study of representative works of the discipline.

Within the tradition of medieval logic itself, Buridan's work can be further specified as being of that variety known as "terminist" logic. Terminist logic, while long in developing, was apparently first brought together in a systematic way in the thirteenth century e. g. in the *Summulae Logicales* of Peter of Spain. It was so named because it was based on a doctrine that the term is the fundamental unit of all language, and on the view that the categorematic term is the only independent.

ly meaningful element of language. Theories of meaning and reference were then developed through an elaborate analysis of what were known as the "properties of terms".

The two principal properties of terms were *significatio* and *suppositio*, though virtually every author discussed a number of derivative properties based on these. Neither of these properties was understood in the same way by all terminists, so that it is difficult to make general remarks about them, a difficulty compounded by the fact that neither property corresponds very nearly with any conception in common use today. However, it may not be too misleading to suggest that *significatio* was usually the basis of a theory of meaning (or perhaps better, a theory of predicability), while *suppositio* was used to account for the actual

referential use of terms in propositions and to develop truth-conditions for propositions of all sorts. For Buridan in particular, the theory of significatio is used to explain the relation of categorematic terms and propositions both to concepts of the mind and to the things conceived by those concepts. The theory of suppositio is then an account of the ways in which categorematic terms function as referring elements in propositions of various forms and in combination with various syncategorematic words to yield true and false propositions.

Buridan's *Sophismata* is best understood as an advanced "problems text" in the terminist tradition, and especially as a treatment of special problems associated with the properties of terms. Virtually the entire work consists of problems associated with significatio and suppositio, though it goes without saying that a great many other sorts of issues get involved in the working out of these problems. For more than a century prior to Buridan, teachers of logic had been compiling lists of problem-sentences or sophismata to be employed by their students as exercises. But Buridan's is different from most of these in that it is rather highly structured and is deliberately placed after the introduction to the fundamental doctrines of terminist logic in the *Summula de Dialectica* as a systematic consideration of special problems growing out of the application of those doctrines." (pp. 10-11)

From: Theodore Kermit Scott, "Introduction" to: Johannes Buridanus, *Sophismata*, Stuttgart - Bad Cannstatt: Frommann-Holzboog 1977.

"Summary of the *Sophismata*.

Although a detailed study of the problems dealt with in the work cannot be undertaken here, it may prove useful, as a guide for the reader, to summarize briefly the main themes of each chapter.

Chapter I: This chapter is intended to clarify Buridan's doctrine of *significatio*. In particular, after the statement of the sixth

sophisma, there are eleven conclusions which together constitute a remarkably clear statement of the doctrine.

The primary aim of the *sophismata* of this chapter is to bring out Buridan's view that truth cannot be a function of *significatio*, because every proposition, whether true or false, signifies a corresponding mental proposition and also signifies concrete particulars. Thus the traditional definition of truth stating that a proposition is true if *qualitercumque significat esse, ita est*, must be understood very broadly.

The fifth *sophisma* is of particular interest, since it involves Buridan's rejection of a fairly common scholastic doctrine, according to which every proposition signifies an abstract entity, known as a *complexe significabile*. For Buridan, every proposition signifies something (even if one of its terms can have *suppositio* for nothing), but no proposition signifies anything other than concrete particulars. Chapter II: Having determined in Chapter I that truth and falsity are not a function of signification, Buridan proceeds in this chapter to his own account of the actual truth-conditions for categorical propositions. In stating these conditions, the doctrine of *suppositio* is introduced, and it is shown that truth is determined by identities and differences of *suppositio* among the categorematic terms of the proposition in question.

After the sixth *sophisma*, fourteen conclusions are given. The first eight of these further clarify the doctrine of *significatio* and make clear its relation to truth, while the last six use the doctrine of *suppositio* to state actual truth-conditions for categorical propositions.

The reader might pay particular attention to the third *sophisma*, which appears tautological and yet is held by Buridan to be false, because of the basis of truth in *suppositio*.

Chapter III: This chapter contains an extraordinarily clear account of the doctrine of *suppositio*. The first five *sophismata* and the remarks which follow the fifth *sophisma* introduce the basic division into *suppositio personalis* and *suppositio materialis* and discuss a number of problems in a way which helps to clarify

the distinction between the two types. The remaining sophismata and the discussion accompanying them is concerned with the several divisions of *suppositio personalis* and the use of these additional types in providing an analysis of propositions containing quantifying words. And finally a number of rules are given governing immediate inferences involving such quantified propositions.

Chapter IV: This chapter requires special attention, since it contains Buridan's fullest discussion of his doctrine of *appellatio*, which differs almost entirely from a doctrine of the same name that occurs in other terminist texts. And furthermore, Buridan applies the doctrine in two ways that are not merely distinct, but are so loosely connected as to seem hardly applications of the same doctrine.

The first application of the doctrine is developed in the first eight sophismata and the remarks associated with them. According to that discussion, every categorematic term is said to have *appellatio* for everything it signifies, beyond that for which it stands in *suppositio personalis*. Furthermore, everything that is thus signified bears some relation to that for which the term stands and so determines the reason why that certain term is used to stand for the thing in question. For example, in the proposition 'Socrates is white', the term 'white' stands for Socrates, but has *appellatio* for the quality of whiteness possessed by Socrates.

This discussion in the early part of the chapter also includes Buridan's view of the way in which the doctrine is to be applied in cases of tensed and other modal propositions or in cases where the logical subject or predicate of a proposition consists of more than one term.

The second application of the doctrine of *appellatio* is covered in the remainder of the chapter. This application has to do with the reference of terms following certain verbs usually associated with cognitive attitudes, such as knowledge, belief, opinion, doubt, etc. In such contexts a term is said to have *appellatio* not for some concrete substances or properties, but for the ratio which

accounts for the fact that just that term and no other is used in the proposition. And because the term does have appellatio for that particular ratio, Buridan holds that it is not possible to substitute another term for that one in such a context, even though the two terms may have the same suppositio. Thus in the proposition 'You know the one approaching', the predicate 'the one approaching' may stand for Plato, but it has appellatio for the ratio by which Plato is known not as Plato but as the one approaching, so that one cannot substitute the term 'Plato' for that predicate salva veritate.

Chapter V: This chapter is a rather straightforward discussion of the doctrine of the extension (ampliatio) and restriction (restrictio) of suppositio. Buridan's version of this doctrine is orthodox and the exposition is clear. In general the doctrine is that suppositio may be limited to presently existing things or it may be extended to things existing in either the past or the future or both, depending primarily on the tense and modality of the verb of the proposition, but also on the occurrence of certain other temporal or modal words, or even on the occurrence of certain prefixes or suffixes.

Chapter VI: The discussion in this chapter is probably more important for modern readers attempting to understand terminist logic than it was for Buridan's scholastic contemporaries. Today we are accustomed to a distinction between sentences and propositions and to thinking of a proposition as an abstract, timeless entity expressed by a spoken or written sentence, so that this chapter is important in emphasizing the common medieval view of a proposition as a purely conventional group of sounds or marks. It also brings out the distinction between propositions so understood and mental propositions, which were thought of as natural signs and so as independent of the human will, both as to content and as to truth. Thus any group of sounds or marks conventionally instituted might be a true or false proposition, depending entirely on whether it was understood to be the correlate of some true or false mental proposition.

Chapter VII: This chapter extends the discussion of the preceding one, by considering the conception of the proposition as purely conventional in the light of certain problems concerning time, which had been alive in the medieval tradition at least since Augustine. Since a proposition is not a timeless entity, but is rather an object that comes to be as it is spoken or written and exists only so long as it is spoken or preserved in written form, how are we to understand the truth of such temporal beings? Does a spoken proposition ever exist, since its words are not all spoken simultaneously? How can a proposition of present tense be true, since the present is past before the proposition fully exists? And if we make it a matter of convention of what duration the present is, it would appear that the same proposition can be either true or false, depending on which convention is adopted.

Chapter VIII: The final chapter of the work is perhaps its richest, and for that reason, it is difficult to summarize briefly. It is a collection and discussion of a number of problems, which were grouped together by medievals and called insolubilia. Originally used as a pedagogical device, insolubilia eventually became the vehicle for discussion of the most advanced problems of terminist logic. Broadly speaking, most insolubilia are paradoxes of some sort and are usually propositions which, either by what they assert or by their form, seem to imply, directly or indirectly, their own denials. But this is not true of all. Some (such as the fifth and sixth sophismata of this chapter) seem to be little more than puns, while others (for example, the sixteenth and seventeenth sophismata) pose a dilemma for action. Because of the range of problems considered, the best brief introduction to the chapter must be an invitation to the reader to give it his detailed attention. But special mention might be made of the seventh sophisma, which may be of particular interest to modern logicians, since it contains Buridan's way of dealing with semantic paradoxes, which are among the more common and interesting insolubilia." (pp. 14-16)

From: Theodore Kermit Scott, "Introduction" to: Johannes Buridanus, *Sophismata*, Stuttgart - Bad Cannstatt: Frommann-Holzboog 1977.

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Buridan's Logical Works. II. The *Treatise on Consequence* and Other Writings

TRACTATUS DE CONSEQUENTIIS

(In preparation)

QUAESTIONES LONGE SUPER LIBRUM PERIHERMENEIAS

"The present work contains the first critical edition of John Buridan's *Questiones longe super Librum Perihermeneias Aristotilis*.

(...)

Now we should have to answer the question: when were the questions on *Perihermeneias* written? Little is known about the chronology of Buridan's works. Even a relative date is difficult to establish. However, some remarks can be made. First, there is the fact that the questions on *Perihermeneias* are quoted several times in *Tractatus I* of the *Summule* (4), in a way that makes it highly probable that the *Summule* were written after the

Questiones on Perihermeneias (5). Now, according to professor Pinborg the first *lectura* of the *Summule* may be dated as early as the late 1320es (6), that is at the very beginning of Buridan's career as a teacher of philosophy at the university of Paris. This may be an indication for an early date of the *Questiones on Perihermeneias*, possibly as early as 1325.

There are two other reasons for assuming that the commentary on *Perihermeneias* is one of Buridan's first works. The first clue is given by the places where Buridan refers to one of his own works: once he refers to his commentary on Porphyry's *Isagoge* (7), twice to his commentary on Aristotle's *Metaphysics* (8), and six times to his commentary on the *Physics* (9). The way in which he refers to these tracts seems also to be significant: the reference to his commentary on Porphyry's *Isagoge* shows that this work is of an earlier date than the present work. As to the other two works, he only refers to the number of the book in which he is going to treat a particular subject, not to the number of the question. A (cross)reference to the *Summule* is not given, although, as Pinborg remarks, there is a general doctrinal concordance between the two works. The questions on *Metaphysics* do not contain a (cross)-reference to the questions on *Perihermeneias*, at least not on the places where one would expect them. I am not certain about possible references occurring in the commentary on *Physics*. However, we should be very careful to draw conclusions from the occurrence of references, since it is always possible that we are dealing with a second or third *lectura* of the text. (10)

Another argument in favour of an early date of the tract is based on the content of the work. Doctrinal analysis of the work shows that most subjects treated in the *Questiones on Perihermeneias* can also be found in other works of Buridan's in a more elaborate way. The work as a whole seems to show an early stage of Buridan's doctrinal development.

Unfortunately, this argument is not as strong as it seems, since the superficial way in which some subjects are discussed in the work may be related to the character of the tract: the questions on

the *Logica vetus* were probably presented to the students in an early stage of their philosophical training.

Thus, there is not much certainty about the date of the questions on *Perihermeneias*. There are some reasons to believe that we have to deal with an early work of Buridan. Although, taken separately, none of these reasons is in itself sufficient, I am inclined to consider the work as an early tract.

The *Questiones breves*.

The present work does not contain an edition of the short version of the questions on Aristotle's *Perihermeneias*." (pp. XIII-XIV)

Notes

(5) Summule I.3.3: Ad tertiam dubitationem ego tractavi expresse et diffuse I. Perihermeneias in &a questione, ad quam recurrat qui voluit.

(6) Jan Pinborg, *The Summule, Tractatus I De Introductionibus*. in: *The Logic of John Buridan* (1976) pp. 71-90.

(7)p. 6,8. The short version gives an explicit reference to the third question of this tract.

(8) p. 52,36; p. 71,34.

(9) p. 35,4 p. 41,11+14+21; p. 58, 27; p. 68, 36.

(10) Edmond Faral, "Jean Buridan: Maître és arts de l'Université de Paris," *Histoire Littéraire de la France* 28 (1949), 462-605 (separate edition 1950).

From: Ria van der Lecq, "Introduction" to: *Quaestiones longe super Librum Perihermeneias*. Nijmegen: Ingenium Publishers 1983.

QUAESTIONES TOPICORUM

"The commentary edited here is a question-commentary. This means that -- like most commentaries of its kind -- it offers the

reader little help to understand Aristotle's text. Or to put the same in another manner: Though we find a considerable number of references to the *Topics* we could remove practically all the references and still have almost the same commentary. Or again: Nearly all the questions are occasioned by a section of Aristotle's text, but the discussions take place within a purely medieval frame-work.

We find, however, three references to *littera* (i.e. Aristotle's text) which are most naturally taken to mean that our work presupposes an exposition of the text.⁽¹¹⁾ These references need not mean that there was ever a 'published' literal-commentary on Aristotle's *Topics* by Buridan. Yet it has been argued convincingly by Christoph Flüeler⁽¹²⁾ that Buridan's habit was to go through a prescribed text by expounding it and discussing questions on it within the same period, though the exposition of the text might proceed at a quicker pace than the disputation of questions. This will mean that the present work originally did not stand alone, but had an explanation of the text as its background. No trace seems to be left of such an exposition of Aristotle's *Topics* by Buridan, and perhaps it was never written down, but only spoken in the class-room.

Flüeler further argues that all or most of Buridan's commentaries have come down to us as students' reportations of oral lectures and not in Flüelera form finished by Buridan himself.⁽¹³⁾ This seems to hold true of the present work: In I qu. 5, arg. 1a we read: *sicut hen dicebatur*; in IV qu. 4 arg. 3b: *sicut hodie dicebatur*; in V qu. 2 arg. 4a: *sicut dicebam heri*; and in I qu. 17, dist. I: *descriptiones horum sunt vobis satis notae*. Such phrases are more naturally said in an oral lecture than written in a finished text. Inevitably this leads to the question: Has the student reported the lecture in the classroom, as it was spoken, or has he later written down a full text on the basis of notes taken in the class-room? Flüeler argues convincingly⁽¹⁴⁾ for the existence of reportations written down in a complete form in the class-room, but certainly we cannot consider it to be proved that all reportations were made in that way. It is hardly possible to decide

the question concerning our commentary, but when reading it we should keep in mind that there probably is, so to speak, a 'mediator' between Buridan and us.

Any reader of our commentary will quickly notice that it does not pay equal regard to all eight books of Aristotle's *Topics*. The questions on book I take up about one third of the work, and the same is true about the questions on book II. The remaining books are then dealt with quickly in the last third of the commentary. This selective attitude to Aristotle's text is one which our work shares with other commentaries from the same period.⁽¹⁵⁾ If we compare with the much bigger number of questions in the commentaries from the 13th century by Boethius de Dacia⁽¹⁶⁾ and Radulphus Brito⁽¹⁷⁾ we cannot avoid the impression that Aristotle's *Topics* interested the authors of the 14th century much less than it did earlier commentators. Or perhaps we could say that the logic of the 14th century followed a course of development of its own, and was to a lesser degree directly inspired by a reading of Aristotle than the logic of the 13th century.

Already in the earliest question-commentaries on Aristotle's *Topics* it became customary for the authors to use the beginning of book II to discuss problems about the syncategoreme *omnis* (all/every).⁽¹⁸⁾ Buridan does the same in our work. We find discussions of standard sophisms like *Omne animal fuit in arca Noe* (II qu. 2); ⁽¹⁹⁾ *Omnis phoenix est* (II qu. 3); *Omnes apostoli sunt duodecim* (II qu. 4); *Omnis homo est omnis homo* (II qu. 4); *Omnis homo de necessitate est animal* (II qu. 6); *Totus Socrates est minor Socrate* (II qu. 4). Further Buridan discusses sophisms like *Quicquid emisti, comedisti; crudum emisti; igitur crudum comedisti*⁽²⁰⁾ (II qu. 6, cf. I qu. 5) and *Denarios in bursa mea scis esse pares*⁽²¹⁾ (II qu. 6). It is remarkable that, except for the last two, Buridan does not include these sophisms in his own collection of sophisms (= the last section of his *Summulae*). Rather they belong to the sophisms commonly discussed in the 13th century. Perhaps it is possible to suggest that this indicates

that the commentary on the *Topics* was an early work by Buridan." (p. XIII-XV)

Notes

(11) I qu. 15; II qu. 10; VIII qu. I.

(12) Christoph Flüeler, From Oral Lecture to Written Commentaries: John Buridan's Commentaries on Aristotle's *Metaphysics*. In *Medieval analyses in language and cognition. Acts of the Symposium: The Copenhagen School of Medieval Philosophy*. Edited by Ebbesen Sten and Friedman Russell L. Copenhagen: Royal Danish Academy of Sciences and Letters 1999, 502-510.

(13) Flüeler 1999, 499-500.

(14) Flüeler 1999, 507-511; 516; 518.

(15) Cf. Niels Jørgen Green-Pedersen, *The Tradition of the Topics. The Commentaries on Aristotle's and Boethius's 'Topics'*. München-Wien, Philosophia, 1984, 89-90; 392-399.

(16) Boethius de Dacia, *Topica - Opuscula*. Edited by N. J. Green-Pedersen and J. Pinborg, *Corpus Philosophorum Danicorum Medii Aevi* V, 1-2. Hauniae Societas Linguae et Litteraturam Danicarum/Gad 1976, 2, 461-466.

(17) Cf. Jan Pinborg, "Die Logik der Modistae". *Studia Mediewistyczne* 16 (1975), 82-86.

(18) Boethius de Dacia 1976, 2, 462; Pinborg 1975, 83-84 (Radulphus Brito).

(19) Cf. Iohannes Buridanus, *Quaestiones Elenchorum*, 8.4.3, P. 35; 9.3.2.1, p. 38.

(20) Cf. Johannes Buridanus, *De Practica Sophismatum*, 64; 73-74; cf. the next section of this introduction.

(21) Cf. Iohannes Buridanus, *De Practica Sophismatum*, 79-80; 90; cf. the next section of this introduction.

From: Niels Jørgen Green-Pedersen, "Introduction" to: Johannes Buridanus, *Quaestiones Topicorum*, Turnhout, Brepols 2008.

QUAESTIONES ELENCORUM

"The treatment of the problem of the *insolubilia* may give us some evidence for a relative date of the *Questiones elencorum*. The subject is discussed in question 19 of the present work. Someone who is not familiar with the discussions on paradoxes may wonder why the subject is treated here at all. Question 19 is one of the few questions in this work that contain no reference at all to Aristotle's text and at first sight it seems to have no connection with the subject of fallacies.

The reason that the subject is discussed here is that paradoxes were very often considered as originating from the fallacy *secundum quid et simpliciter*.⁽¹⁴⁾ From that point of view an insoluble proposition, like '*Sortes dicit falsum*', supposing that Sortes says no other proposition than this one, is neither simpliciter false nor simpliciter true, and therefore it deserves the same treatment as the proposition about the black man with the white teeth. For the sake of clearness: Buridan has never defended this opinion himself. According to him the proposition '*Sortes dicit falsum*', where '*falsum*' refers to the proposition itself, is simply false.

Buridan has dealt with the subject in more than one place in his works, but the most profound exposition can be found in chapter VIII of the *Sophismata*. In sophism 7 he exposes the principles of his solution. First Buridan argues that in the case presented, viz. that all true propositions have been annihilated and only false ones has survived, when Socrates says 'every proposition is false' and nothing more, this proposition is simply false. Then he goes on to reply to some opposing arguments:

7.7.1: Some people have advanced the following view (and it was my opinion too at one time): Even if the only thing that the proposition signifies or asserts, simply in virtue of the meanings of its terms, is that every proposition is false, *nevertheless every proposition, by its very form, signifies or asserts itself to be true*,

and as a result any proposition that either directly or indirectly asserts itself to be false, is false (transl. Hughes,(15) ital. ours). (Aliqui enim dixerunt, et ita visum fuit mihi alias, quod licet ista propositio secundum significationem suorum terminorum non significet vel asserat nisi quod omnis propositio est falsa, tamen omnis propositio de forma sua significat vel assent se esse veram. Ideo omnis propositio asserens se esse falsam, sive directe sive consecutive, est falsa.) (16)

Let us follow G.E. Hughes(17) in referring to this theory (viz. that every proposition signifies its own truth) as the *meaning* theory. Next Buridan goes on to say that strictly speaking it is not correct to say that every proposition signifies or asserts itself to be true. He prefers another view:

7.7.2: one that is quite close to the truth. According to it every proposition virtually implies a second proposition in which the subject would stand for the original proposition and the predicate 'true' would be affirmed of it.

(Ideo dicitur aliter, propinquius veritati, scilicet quod quaelibet propositio implicat virtualiter aliam propositionem de cuius subjecto pro ea supponente affirmatur hoc praedicatum 'verum'.)

Following Hughes we shall refer to this theory (viz. that every proposition implies its own truth) as the *entailment* theory. This introduction is not the right place for a detailed study of Buridan's solution of the problem of paradoxes. What matters for our purpose here is that he first presents an opinion of which he says that he had that opinion too at one time.

Now if we take a look at his remarks in question 19 of the *Questiones Elencorum*, it becomes clear that this text must have been written before the *Sophismata*. In 19.3.2 Buridan states that every proposition formally signifies that it is true or at least it follows from every proposition that it is true:

Et sit prima suppositio quod omnis propositio de significatione formali significat se esse veram. Et ideo quia consequens includitur in antecedente, quaelibet propositio implicat se esse veram, nam omnis propositio est affirmativa vel negativa. Modo

quaelibet illarum significat se esse veram vel saltem ad quamlibet illarum sequitur eam esse veram.

From this passage we may conclude that when writing the *Questiones Elencorum* he had no objections against the meaning theory, although he preferred the entailment theory himself.

Another text where the subject is discussed can be found in Buridan's commentary on Aristotle's *Metaphysics*. In book VI question 11 the author argues that some people suppose that every affirmative proposition formally signifies that in every way the facts are as it says they are (*qualitercumque significat esse ita est*).⁽¹⁸⁾ Now 'that in every way the facts are as the proposition says they are' is considered a truth condition of an affirmative proposition. So it may be assumed that Buridan here refers to the opinion that every affirmative proposition formally signifies that this proposition itself is true: the meaning theory. According to Buridan the defenders of this opinion see the truth but they do not see it completely. Strictly speaking this opinion is not correct (*iste modus loquendi vel non est verus vel non est proprius*). He politely rejects this opinion with the same arguments as in the *Sophismata*, although in the *Sophismata* he seems to be more convinced of his being in the right. In the commentary on the *Metaphysics* as well as in chapter VIII of the *Sophismata* his objection against the opinion that every proposition signifies itself to be true is that in this opinion the signification of e.g. 'a man is an animal' would be 'that a man is an animal' is true', that is, if the expression 'itself to be true' (*se esse veram*) is taken materially. This is incorrect, because according to Buridan in the *Sophismata*, 'that a man is an animal' is true' is a proposition about second intentions, whereas the original proposition 'a man is an animal' is a proposition about first intentions. In other words, as formulated in the commentary on the *Metaphysics*, '*equus est asinus*' does not signify the proposition 'a horse is a donkey'; it only signifies horses and donkeys. If the expression 'itself to be true' or 'that a horse is a donkey' is taken not materially but significatively, the opinion would not be correct either, because in that case 'that a horse is a donkey' would not

refer to anything (*pro nullo supponit*), since there is no such thing as a horse being a donkey, and in just the same way there neither is nor can be such a thing as that proposition being true. Now something that does not and cannot exist cannot be signified or asserted, according to Buridan. The vocal proposition '*homo est asinus*' signifies the corresponding mental proposition, but in reality outside the mind it only signifies men and donkeys and nothing else. From Buridan's discussion in the commentary on the *Metaphysics* and the *Sophismata* it can be concluded that this account holds for propositions that cannot possibly be true, like '*equus est asinus*' and for insoluble propositions, like 'every proposition is false'. What does hold for every proposition is that it implies its own truth (comm. on *Metaphysics*: *tamen ad omnem propositionem de mundo sequitur quod ipsa est vera*), if at any rate it is formulated (*saltem si formaretur*).

It is clear that Buridan's theory as well as the arguments he uses to defend it are very similar in the *Sophismata* and in the commentary on the *Metaphysics*. The treatment in the *Sophismata* seems to be more formal, but that can be explained from the context in which the problem is discussed. Chapter VIII of the *Sophismata* is a logical treatise about the solution of *insolubilia*, whereas the subject in the commentary on the *Metaphysics* is the truth conditions of propositions in general and the question whether a proposition can be true and false at the same time.

Another text where the subject is discussed is the tenth question of Buridan's Questions on the Posterior Analytics. The subject of this question is the problem of the truth-condition of a proposition. Is the fact that in every way the facts are as some proposition says they are, a condition and a sufficient condition for the truth of that proposition (*quaeritur utrum ad veritatem propositionis requiratur et sufficiat quod qualitercumque ipsa significat ita sit*)? In many cases, our author argues, this is not a sufficient condition, e.g. in a proposition that expresses its own falsity ('*ego dico falsum*'). Such a proposition is false, according to Buridan. Nevertheless the facts are as the proposition says they

are, because the proposition signifies itself to be false, and it is false. Still the facts are not in every way (*qualitercumque*) as the proposition says they are, because it also signifies itself to be true, because that is what every proposition does (*ex communi condicione propositionis*).⁽¹⁹⁾

It is clear that in this connection Buridan 'defends' the opinion he rejects in chapter VIII of the *Sophismata* and in the commentary on the *Metaphysics*: the meaning theory.

A comparison of these four texts of Buridan's leads us to the following tentative conclusion regarding the relative date of these works. The commentary on the *Posterior Analytics* should be dated first. Buridan clearly proposes the meaning theory (every proposition signifies that it itself is true) as his own. In the commentary on the *Sophistici Elenchi* (19.3.2) the meaning theory is still brought forward without any criticism (*prima suppositio quod omnis propositio de significatione formali significat se esse veram*), but Buridan adds the remark that every proposition also implies itself to be true, because every proposition is affirmative or negative. Supposedly Buridan wants to say that every speaker is implicitly claiming that he is speaking the truth. This text was probably written after the commentary on the *Posterior Analytics*. The commentary on the *Metaphysics* and the *Sophismata* are clearly of a later date. In the former work he speaks about the adherents of the meaning theory as people who see the truth, but not completely (*aliqui videntes veritatem sed tamen non plene videntes*), because properly speaking one cannot say that a proposition signifies itself (*unde non est propria locutio quod propositio significet seipsam*), because in some cases there would be nothing to be signified. The entailment theory seems to be advanced here as a better alternative for impossible and insoluble propositions (*licet non omnis propositio significet se esse veram quia forte nihil est 'se esse veram', tamen ad omnem propositionem de mundo sequitur quod ipsa est vera*), whereas in the *Sophismata* the meaning theory is simply rejected for every proposition. The *Sophismata* text seems to express a more radical point of view. Here Buridan does not

show the sympathy for the adherents of the meaning theory in the way he did in the commentary on the *Metaphysics*. He simply rejects this opinion as incorrect (*non videtur mihi valere de proprietate sermonis*) for every proposition, although he had defended it himself before. We are inclined to take this as an indication (although not as a proof) for a date of the *Sophismata* after the commentary on the *Metaphysics*.(20)" (pp. XV-XIX)

Notes

- (14) For a historical survey: P. V. Spade, *Insolubilia*, in: *Cambridge History of Later Medieval Philosophy*, Cambridge 1982, pp. 246-253.
- (15) G.E. Hughes, *John Buridan on Self-reference, Chapter Eight of Buridan's Sophismata, translated with an Introduction and a philosophical Commentary*, Cambridge 1982.
- (16) Miss Fabienne Pironet is preparing a new critical edition of this text. The Latin text has been taken from her manuscript, which she was so kind as to make available.
- (17) Op. cit., p. 106.
- (18) A more literal translation of the expression '*qualitercumque significat esse ita est*' would be: howsoever it signifies, so it is. However, we prefer the translation given by G.E. Hughes, op.cit., p. 48.
- (19) Ed. Pironet.
- (20) This conclusion is confirmed by Fabienne Pironet: *John Buridan on the Liar Paradox* in: Klaus Jacobi (hrsg.) *Argumentationstheorie, Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgerns*, Leiden 1993, 293-300. Miss Pironet's study does not include the *Questions Elencorum*.

From: Ria van der Lecq and H.A.G. Braakhuis, "Introduction" to: Johannes Buridanus, *Quaestiones Elencorum*, Nijmegen, Ingenium Publishers 1994.

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[A - K](#)

[L - Z](#)



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Buridan: Editions, Translations and Studies on the Manuscript Tradition

INTRODUCTION

I give an updated list of the published and unpublished logical and metaphysical works of Buridan, and a bibliography of the editions and translations appeared after 2000.

A complete list of Buridan's works and manuscripts can be found in the '*Introduction*' by Benoît Patar to his edition of "*La Physique de Bruges de Buridan et le Traité du Ciel d'Albert de Saxe. Étude critique, textuelle et doctrinale*" Vol. I, Longueuil, Les Presses Philosophiques, 2001 (2 volumes), pp. 33* - 75*.

SUMMARY LIST OF BURIDAN'S LATIN WORKS ON LOGIC AND METAPHYSICS

Logical Works:

N. B. The treatises known as *Artes Veterem* and commented by Buridan were the *Isagoge* by Porphyry and the *Categoriae* (*Predicamenta*) and the *Peri Hermeneias* by Aristotle.

1. *Expositio Super Artes Veterem*
2. *Quaestiones Super Artes Veterem*
3. *Expositio in duos libros Analyticorum priorum Aristotelis*
4. *Quaestiones in duos libros Analyticorum priorum Aristotelis*
5. *Expositio in duos libros Analyticorum posteriorum Aristotelis*
6. *Quaestiones in duos libros Analyticorum posteriorum Aristotelis*
7. *Quaestiones in octo libros Topicorum Aristotelis*
8. *Quaestiones in librum 'de sophisticis Elenchis' Aristotelis*

Summulae de dialectica, commentary of the *Summulae logicae* by Peter of Spain, composed by the following treatises:

1. *De propositionibus*
2. *De praedicabilibus*
3. *In praedicamenta*
4. *De suppositionibus*
5. *De syllogismis*
6. *De locis dialecticis*
7. *De sophisticis elenchis*
8. *De demonstrationibus*
9. *De practica sophismatum* (sometimes considered the ninth treatise of the *Summa logicae*)
10. *Tractatus de consequentiis*

Metaphysical Works:

1. *Expositio Super Metaphysica* [in two redactions]
2. *Lectura Erfordiensis*
3. *Quaestiones Super Metaphysica* [in two redactions]

Polemical Woks:

1. *Duae quaestiones de universali*
2. *Tractatus de relationibus*
3. *Quaestio de possibilitate existendi secundum eandem et non essendi simul in eodem instanti*
4. *Quaestio de dependentiis, diversitatibus et convenientiis*
5. *Determinatio de diversitate generis ad speciem*
(*Defensiones determinationis de diversitate generis ad speciem*)

The *Quaestiones super octo libros Politicorum Aristotelis* are not a work of Buridan, but of Nicolaus Girardi de Waudemonte (Nicholas of Vaudémont), a late Fourteenth-century French writer, as demonstrated by Christoph Flüeler, *Die Rezeption des Politica des Aristoteles an der Pariser Artistenfakultät im 13. und 14. Jahrhundert*, in: Jürgen Miethke (ed.), *Das Publikum politischer Theorie im 14. Jahrhundert*, 1992, pp. 127-138.

DETAILED LIST WITH FULL BIBLIOGRAPHICAL REFERENCES

Logical Works:

1. Buridanus, Johannes. *Expositio in Artem Veterem*. Unpublished manuscript: Biblioteca de la Catedral de Tortosa (España) cod. 108 ff. 26r-74v.

2. ———. *Quaestiones in Artem Veterem (De Tertia Lectura; Ordinatio)*.
This work is now available in critical edition (in three separated editions: see below).
3. Buridani, Johannis. *Quaestione Breves in Artes Veterem*.
Unpublished manuscripts available at the Libraries of Cracow, Leipzig, and Città del Vaticano (two manuscripts).
4. Buridan, Jan. 1986. "Komentarz Do *Isagogi* Porfiriusza [Quaestiones in Isagogen Porphyrii]." *Przegląd Tomistyczny* no. 2:111-195.
Quaestiones Super Artes Veterem I.
Critical edition of the Latin text with an introduction in Polish by Ryszard Tatarzynski.
5. Buridanus, Johannes. 1983. *Quaestiones in Praedicamenta*.
München: Verlag der Bayerischen Akademie der Wissenschaften.
Quaestiones Super Artes Veterem II.
Edited by Johannes Schneider.
6. ———. 1983. *Quaestiones Longe Super Librum Perihermeneias*. Nijmegen: Ingenium Publishers.
Quaestiones Super Artes Veterem III.
Artistarium Supplementa Vol. 4.
Edited with an introduction by Ria van der Lecq.
7. Buridan, John. 1976. "Quaestio 3 *Perihemeneias*." In *The Logic of John Buridan*, edited by Jan, Pinborg, 89-90.
Copenhagen: Museum Tusculanum Press.
8. Buridani, Johannis. *Expositio in Duos Libros Analyticorum Priorum Aristotelis*.
Unpublished manuscript of 1356: Praha, Knihovna Metropolitní Kapituly, cod. L.34, ff. 107r -136v.
9. ———. *Quaestiones in Duos Libros Aristotelis Analyticorum Priorum*.
Unpublished work available in manuscript at the Libraries of: Cracow, Leipzig, Liège, München, Prague, Vienne.
Unpublished transcription by Hubert Hubien available at Peter King's Website.

10. Buridanus, Johannes. 1991. "Quaestiones Super Libris *Analyticorum Priorum*, Quaestio Xx: *Utrum Per Inductionem Probatur Propositio Immediata*." In *Historia Philosophiae Medii Aevi. Vol. I*, edited by Burkhard, Mojsisch and Olaf, Pluta, 100-103. Amsterdam: B. R. Grüner.
Edited by Egbert P. Bos in Appendix (Anhang) to his essay: *Pseudo-Johannes Duns Scotus über Induktion* pp. 71-99.
11. Buridani, Johannis. *Expositio in Duos Libros Analyticorum Posteriorum Aristotelis*.
Unpublished manuscript: Città del Vaticano, Biblioteca Apostolica Vaticana, Urb. lat. 1489, f. 119ra - 150rb.
12. ———. 2006. *Quaestiones in Duos Libros Aristotelis Analyticorum Posteriorum*.
This work was attributed to Albert of Saxony and published in 1497 with the title: *Quaestiones subtilissimi Alberti de Saxonia super libros Posteriorum* Milan, Venise (modern anastatic reprint: Hildesheim, Olms, 1986).
13. Buridanus, Johannes. *Expositio in Topica*.
The attribution of this work to Buridan is doubtful.
Unpublished manuscript: Munich, Bayerische Staatsbibliothek, signature: Clm 12707, ff. 66ra - 99vb.
14. ———. 1994. *Quaestiones Elencorum*. Nijmegen: Ingenium Publishers.
Artistarium Supplementa Vol. 9.
Edited with an introduction, notes and indices by Ria van der Lecq and H. A. G. Braakhuis.
15. ———. 2008. *Quaestiones Topicorum*. Turnhout: Brepols.
Introduction, critical edition and indexes by Niels Jorgen Green-Pedersen.
16. Buridan, John. 1976. "Quaestiones Super *Sophisticos Elenchos* [Index]." In *The Logic of John Buridan*, edited by Jan, Pinborg, 159-160.
17. Buridanus, Johannes. *Perutile Compendium Totius Logicae Joannis Buridani Cum Praeclarissima Solertissimi Viri Joannis Dorp Expositione*.

This work, also known as *Summulae de dialectica* or *Lectura de summa logicae* (the title of Hubert Hubien unpublished transcription) is composed by eight treatises: I. *De propositionibus*; II. *De praedicabilibus*; III. *De praedicamentis*; IV. *De suppositionibus*; V. *De syllogismis*; VI. *De locis dialecticis*; VII. *De sophisticis elenchis*; VIII. *De demonstrationibus*.

A ninth treatise, *Sophismata*, is printed separately in the ancient editions.

The first edition of the *Summulae* was edited by Thomas Bricot (? - 1516) at Paris in 1487.

An anastatic reprint of the edition of Venice 1499, with the commentary by John Dorp (late 14th century) was published at Frankfurt am Main, Minerva, 1965.

For critical editions of treatises I, II, III, IV, V, VI, VIII and IX see below; treatise VII is not yet available in a modern edition.

18. Buridan, John. 1976. " *Summulae*, Tractatus I." In *The Logic of John Buridan*, edited by Jan, Pinborg, 82-88. Edition of: I.1.1; I.1.5; I.1.6; I.2.2; 1.3.2.
19. Buridanus, Johannes. 2005. *Summulae De Propositionibus*. Nijmegen: Ingenium Publishers.
Summulae Vol. I.
Artistarium Supplementa Vol. 10-1.
Introduction, critical edition, and indexes by Ria van der Lecq.

"The present fascicle contains the first treatise of the *Summulae*, called *De propositionibus*. In earlier fascicles we referred to this treatise as *De introductionibus*, which is the name of the corresponding chapter of Peter of Spain's *Tractatus*. (19) Buridan himself, however, does not use the term *introductiones*; in 1.1.1 he announces that the first treatise is going to deal with propositions and their parts and attributes. Therefore, ' *De propositionibus*' seems to be a more appropriate title.

The treatise consists of eight chapters, which correspond with Peter of Spain's *Tractatus 1* (*De introductionibus*) in the following way:

chapter in Buridan chapter in Tractatus 1

1 De quibusdam praemittendis 1-3

2 De nomine, verbo et oratione 4-6

3 De propositione 7-10

4 De oppositionibus propositionum categoricarum 11-14

5 De aequipollentiis 18

6 De conversionibus propositionum 15

7 De propositionibus hypotheticis 16-17

8 De propositionibus modalibus 19-25

A closer comparison between the two treatises (20) shows that Buridan elaborated more on the topics of chapters 6 and 7 (conversions and hypothetical propositions) than the author of his basic text and that he had an extraordinary interest in modal propositions. He even preferred to write a new text for this chapter, because he considered the auctor's account to be incomplete (1.8.1).

The present edition includes the preface (*Prooemium*) of the *Summulae*, in which Buridan says some remarkable things about logic as an art (see below n.3.3) and in which he warns the reader that he will not follow his author's text in every respect: "occasionally I am going to have to say and write things that differ from what he has said and written, whenever it appears to me suitable to do so".

(19) See for an exposition of the term 'introductiones' by John of Salisbury: Peter of Spain, *Tractatus* (...), ed. L.M. de Rijk, p. LXXXIX..

(20) See Jan Pinborg, 'Summulae, Tractatus 1 De introductionibus,' in Jan Pinborg (ed.), *The Logic of John Buridan*, Copenhagen 1976, pp. 74-75.

20. ———. 1995. *Summulae De Praedicabilibus*. Nijmegen: Ingenium Publishers.
Summulae Vol. II.
Artistarium Supplementa Vol. 10-2.

Introduction, critical edition and indexes by L. M. De Rijk. "The present edition contains the second tract [of Buridan's *Summulae*], *De praedicabilibus*, which deals with the five 'predicables', introduced by the Neoplatonist commentator of Aristotle, Porphyry (c. 233-c. 304 A.D.) in his introductory book (*Isagoge*) to the Stagirite's *Categories*, viz. 'genus', 'species', 'differentia', 'proprium', and 'accidens'. From as early as the eleventh century, medieval authors commented upon Boethius' (480-524) translation of, and commentary upon, this work.

Buridan's discussion of the predicables is mainly based on the corresponding tract of Peter of Spain's manual. His comments are preceded by the complete text of the lemma from Peter to be discussed. It should be no surprise that Buridan's quotations should go back to an adapted version of Peter's text. (...)

Buridan's work consists of elementary exegesis as well as extensive objections and *dubitationes* in which specific questions are dealt with, mostly in an original fashion." pp. XVII and XXI.

21. ———. 1994. *Summulae in Praedicamenta*. Nijmegen: Ingenium Publishers.
Summulae Vol. III.
Artistarium Supplementa Vol. 10-3.
Introduction, critical edition and notes by Egbert P. Bos.
22. ———. 1998. *Summulae De Suppositionibus*. Nijmegen: Ingenium Publishers.
Summulae Vol. IV.
Artistarium Supplementa Vol. 10-4.
Introduction, critical edition and indexes by Ria Van der Lecq.
23. Buridano, Giovanni. 1957. "Tractatus De Suppositionibus." *Rivista Critica di Storia della Filosofia* no. 12.
First part pp. 180-208; Second part pp. 323-352.
24. Buridanus, Johannes. 2010. *Summulae De Syllogismis*. Turnhout: Brepols.

Summulae Vol. V.

Artistarium Supplementa Vol. 10-5.

Introduction, critical edition and indexes by Joke Spruyt

" *De syllogismis* is the fifth treatise of John Buridan's *Summulae dialecticae*, a textbook he wrote for his logic course in the Faculty of Arts at the University of Paris. *De syllogismis* contains material related to Aristotle's *Analytica Priora* and Boethius's *De hypotheticis syllogismis*. The textbook discusses inferences involving not only propositions *de inesse*, but also propositions featuring oblique, reduplicative and infinite terms. Buridan displays a keen interest in modal inferences and inferences involving propositional attitudes. Buridan's *De syllogismis* continues along the lines of his nominalist conception of the relations between mind, language and reality."

25. ———. 2013. *Summulae De Locis Dialecticis*. Turnhout: Brepols.

Summulae Vol. VI.

Artistarium Supplementa Vol. 10-6.

Edited by Niels Jorgen Green-Pedersen.

" *De locis dialecticis* is the sixth treatise of John Buridan's *Summulae dialecticae*, a textbook he wrote for his logic course in the Faculty of Arts at the University of Paris. *De locis dialecticis* immediately builds upon Peter of Spain, but Buridan shows his awareness that the doctrine of the *loci* took its origin in Boethius' *De differentiis topicis*, and he frequently quotes from that work. Though not introducing any basically new ideas Buridan contributes a large number of precisions to the standard descriptions of the several *loci*, and he shows that the list of the *loci* and the traditional division of it into three sections is not something given by nature, but was established by earlier logicians, as they found convenient. Accordingly such things can be changed if something better is found. Buridan has here given us perhaps the most precise and most interesting exposition of the doctrine of the *loci* in the medieval logical literature."

26. Buridan, John. 1976. "The *Summulae* of John Buridan. Tractatus Vi De Locis." In *The Logic of John Buridan*, edited by Jan, Pinborg, 121-138.
Edited by Niels Jörgen Green-Pedersen.
27. ———. 1976. "Extracts from the *Summulae*." In *The Logic of John Buridan*, edited by Jan, Pinborg, 153-158.
Edited by Sten Ebbesen: 7.3.2; 7.3.4; 7.3.10 (*de figura dictionis*).
28. Buridanus, Johannes. 2015. *Summulae De Fallaciis*.
Turnhout: Brepols.
Summulae Vol. VII.
Not yet published.
29. ———. 2001. *Summulae De Demonstrationibus*. Groningen-Haren: Ingenium Publishers.
Summulae Vol. VIII.
Artistarium Supplementa Vol. 10-8.
Introduction, critical edition and indexes by L.M. de Rijk.
30. ———. 2004. *Summulae De Practica Sophismatum*.
Turnhout: Brepols.
Summulae Vol. IX.
Artistarium Supplementa Vol. 10-9.
Introduction, critical edition and indexes by Fabienne Pironet.
"Treatise 9, *De practica sophismatum*, or *Sophismata* for short, has been edited once in full and once in part within the last few decades. The 1977 publication of the full text by Th.K. Scott contributed significantly to the scholarly community's awareness of the merits of Buridan's work, but the Latin text was only weakly anchored in the manuscript tradition; in fact it reproduced an incunabulum (our Z) emended by means of collation with usually one manuscript (our F). G.E. Hughes' partial edition of 1982 was based on six manuscripts (our A, E, F, I, 'I' and W) as well as on an incunabulum (our Z) and represented a considerable step forward on the road to a sound text. Our aim is to take one more step along on that road, by re editing the whole

treatise on the basis of not only more but, we think, also better manuscripts." (p. XI, notes omitted).

31. Buridan, Jean. 1966. *Sophisms on Meaning and Truth*. New York: Appleton-Century-Crofts.
Latin text and translation by Theodore Kermit Scott.
32. ———. 1977. *Sophismata*. Stuttgart - Bad Cannstatt: Frommann-Holzboog.
Critical edition with an introduction by Theodore Kermit Scott (now superseded by Pironet 2004).
33. ———. 1982. *John Buridan on Self-Reference. Chapter Eight of Buridan's Sophismata*. Cambridge: Cambridge University Press.
Latin text, translated, with an introduction and a philosophical commentary, by George E. Hughes.
34. Buridani, Johannis. 1976. *Tractatus De Consequentibus*. Louvain: Publications universitaires.
Critical edition by Hubert Hubien.

Metaphysical Works:

1. Buridanus, Johannes. *Expositio in Duodecim Libros Metaphysicorum Aristotelis [First Redaction]*.
Unpublished manuscript (1340): Paris, Bibliothèque Nationale, ms. latin 16 131, 124ra - 214vb.
2. ———. *Expositio in Duodecim Libros Metaphysicorum Aristotelis [Second Redaction]*.
Unpublished manuscript (1392): Carpentras, Bibliothèque Inguimbertaine, cod. 292 (L. 288), 1ra - 42va; other manuscripts at the Libraries of Darmstadt, München, Paris and Wien.
3. ———. 2008. *Lectura Erfordiensis in I-Vi Metaphysicam, Together with the 15th-Century Abbreviatio Caminensis*. Turnhout: Brepols.
Introduction, critical edition and indexes by L. M. de Rijk.
"The aim of the present edition is to make two texts available which can throw some more light on the role of Aristotle's *Metaphysics* in 14th-15th academic teaching. One

of them contains part of an early (hitherto unknown) version of John Buridan's *Questions on Metaphysics*, the other is a 15th century abbreviation of precisely this early version. Remarkably, both texts belong to the East European tradition of Buridan's works, which is the more interesting as they testify to the master's earlier activities as a Parisian teacher on the subject of metaphysics. In particular, they elucidate Buridan's ongoing semantic approach to matters of metaphysics and ontology as well as his attitude to Aristotle's authority."

4. ———. *Quaestiones in Duodecim Libros Metaphysicorum Aristotelis [First Redaction]*.
Unpublished manuscript: Paris, Bibliothèque Nationale, ms. latin 16 131, 2ra - 122vb.
5. ———. *Quaestiones in Duodecim Libros Metaphysicorum Aristotelis [Secundum Ultimam Lecturam]*.
Manuscript: Carpentrat, Bibliothèque Inguimbertaine, cod. 292, 45ra - 118rb.
Other manuscript at the Libraries of Erfurt (two copies), Paris (two copies), Venezia and Wien.
Printed edition: *In Metaphysicen Aristotelis questiones*, Paris, Josse Bede, 1518.
Facsimile reproduction of this edition under the title *Kommentar zur Aristotelischen Metaphysik* (the date 1588 printed in the frontispice is an error), Frankfurt am Main, Minerva, 1965.
6. ———. *Quaestiones Breves in Duodecim Libros Metaphysicorum Aristotelis*.
Unpublished manuscript: Biblioteka Narodowa (Poland), cod. 5835, 194 - 216.

Polemical Works:

1. Buridan, John. 2004. "John Buridan's Treatise, *De Dependentiis, Diversitatibus, Et Convenientiis*. An Edition." *Vivarium* no. 42:115-149.
Edited by Dirk-Jan Dekker.

2. Buridani, Johannis. 1987. "Tractatus De Differentia Universalis Ad Individuum." *Przegląd Tomistyczny* no. 3:137-178.
Also known with the title: *Duae Quaestiones (Tractatus) De Universali*.
Critical edition of the Latin text by Slawomir Szyller.
3. Buridan, John. 1991. *John Buridan's Tractatus De Infinito: Quaestiones Super Libros Physicorum Secundum Ultimam Lecturam, Liber Iii, Questiones 14-19. An Edition with Introduction and Indexes*. Nijmegen: Ingenium Publishers. Artistarium Supplementa Vol. 6.
Edited by Johannes M. M. H. Thijssen.

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1. Buridan, John. 2001. *Summulae De Dialectica*. New Haven: Yale University Press.
An annotated translation, with a philosophical introduction by Gyula Klima.
2. Buridan, Jean. 1985. *Jean Buridan's Logic. The Treatise on Supposition. The Treatise on Consequences*. Dordrecht: Reidel.
Translated, with a philosophical introduction by Peter King.
3. Buridan, John. 2014. *Treatise on Consequences*. New York: Fordham University Press.
Translated, with an Introduction by Stephen Read.
4. Buridan, Jean. 1966. *Sophisms on Meaning and Truth*. New York: Appleton-Century-Crofts.
Latin text and translation by Theodore Kermit Scott.
5. ———. 1982. *John Buridan on Self-Reference. Chapter Eight of Buridan's Sophismata*. Cambridge: Cambridge University Press.
Latin text, translated, with an introduction and a philosophical commentary, by George E. Hughes.

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Unpublished Ph.D thesis by Ariane Economos, available at ProQuest Dissertations & Theses ref. AAT 3377044.

Abstract: "Recent scholars have argued that the skeptical problem of induction was unknown until the 18 th century. They claim that a theory of knowledge such as the one embraced by medieval Aristotelians, which holds that an effect may be demonstratively proven to follow from its cause, must also hold that a necessary connection exists between a cause and its effect. What such scholars overlook is that medieval philosophers also argue that to claim that all knowledge of causal connections must be obtained demonstratively would lead to an infinite regress; the premises from which a demonstration proceeds cannot always themselves be demonstrated if a regress is to be avoided. Thus, medieval philosophers identify some indemonstrable premises which are causal in nature. They take propositions like, "scammony causes the purging of bile," and, "a certain herb results in the reduction of fever," to be indemonstrable principles which may serve as the starting-points of demonstrations. Principles such as these,

medieval Aristotelians claim, are known through induction. Thus, to truly understand whether or not a medieval "skeptical problem" could pre-date that of Hume, what we must examine is the medieval account of the acquisition of indemonstrable first principles.

An examination of such principles and an analysis of the medieval claim that they are acquired through induction is the theme of this dissertation. Over the course of the dissertation, I defend three theses. First, I argue that when medieval philosophers interpret Aristotle's claim that first principles are obtained through induction, they adapt this claim so as to apply to a kind of principle which we do not find in Aristotle, namely, a principle stating a causal connection. Second, I argue that three medieval commentators on Aristotle--Robert Grosseteste, Thomas Aquinas, and John Buridan--each interpret the role which induction plays in the acquisition of these principles in such diverse ways that we ought not look for one overarching "medieval view" of induction. Third and finally, I argue that Buridan's unique approach to induction and its relation to intellectus (the Latin equivalent of nous) is fueled almost entirely by his sensitivity to skeptical concerns."

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Deux volumes.) Dans le premier volume, aux pages 33* - 75* on trouve la liste complète des œuvres authentiques de Buridan.

Related pages

Pages on the Philosophy of Buridan:

[Buridan's Logical Works. I. An Overview of the *Summulae de dialectica*](#)

[Buridan's Logical Works. II. The *Treatise on Consequences* and Other Writings](#)

Annotated Bibliography on Buridan's Logic and Metaphysics:

[A - K](#)

[L - Z](#)



[History of Logic from Aristotle to Gödel](#)

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Buridan's Logic and Metaphysics: An Annotated Bibliography (First Part: A - K)

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"Est-il possible de parler de ce qui n'est pas ou d'y penser sans présupposer une forme d'être pour cela même que nous pensons ne pas exister ? La vieille énigme parméniidienne, qui hante toujours la philosophie contemporaine, est au coeur non seulement de la philosophie médiévale mais aussi des études médiévales, comme en témoigne le récent ouvrage d'Alain de Libera sur la *référence vide* (1). L'objet de cette étude est en comparaison beaucoup très limité, dans la mesure où nous

nous concentrerons sur le traitement de ce problème du non-être par Jean Buridan. Dans la logique et la métaphysique médiévale, le non-être (*non ens*) est l'objet de discussions relevant aussi bien de la logique des termes que de celle des propositions. En employant une terminologie moderne, nous pourrions dire que le non-être apparaît dans la discussion philosophique tant à propos de l'engagement au domaine de quantification des énoncés qu'à propos de ce qui rend vrai les énoncés eux mêmes (2)." p. 95

(1) Sous le titre *La référence vide*, A. de Libera (Paris, Vrin 2002) a abordé ces deux ensembles de questions, en mettant l'accent sur le second (comme l'indique le sous-titre : *Théories de la proposition*). Au long des chapitres de l'ouvrage, l'auteur n'est jamais loin de l'une des problématiques annoncée en introduction (p.3-4) : la référence aux particuliers inexistantes, la référence aux objets imaginaires et le signifié propositionnel. Cependant, conformément à sa propre méthode historiographique, il soutient que le pont explicite entre ces différentes problématiques n'apparaît qu'à la fin du XIVe siècle. Pierre de Venise serait le témoin privilégié de cette quasi-fusion des problèmes à travers une formule définissant disjonctivement le signifié de la proposition : *aliquid vel aliqua vel aliquialiter*. Davantage qu'une fusion, ce serait même plutôt une absorption des deux premières problématiques au sein de celle du signifié propositionnel. La page 338 expose remarquablement ce point de vue : "grâce à la formule disjonctive [absente avant la deuxième moitié du XIVe siècle], les problèmes de référence vide d'un terme sont traités ultimement dans le cadre unifié d'une véritable sémantique des propositions." Si nous devons exprimer un désaccord avec l'auteur, il porterait seulement sur cette hypothèse méthodologique, car nous pensons que les problématiques de la référence vide et du signifié propositionnel sont également abordées conjointement par

un auteur antérieur tel que Jean Buridan. Quoi qu'il en soit, notre dette envers le travail d'A. de Libera est immense.

(2) Pour un partisan des vérificateurs, adversaire du nominalisme comme David Armstrong, il y a par conséquent, outre l'engagement ontologique classique (au domaine de quantification) un engagement distinct aux vérificateurs.

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3. ———. 2004. "Singular Terms and Singular Concepts: From Buridan to the Early Sixteenth Century." In *John Buridan and Beyond. Topics in the Language Sciences 1300-1700*, edited by Ebbesen, Sten and Friedman, Russell L., 121-151. Copenhagen: C. A. Reitzel.
"This article considers medieval treatments of proper names and demonstrative phrases in relation to the question of when and how we are able to form singular concepts. The logical and grammatical background provided by the authoritative texts of Porphyry and Priscian is examined, but the main focus is on John Buridan and his successors at Paris, from John Dorp to Domingo de Soto. Buridan is linked to contemporary philosophers of language through his suggestion that, although the name 'Aristotle' is a genuine proper name only for those who have the appropriate singular concept caused by acquaintance with Aristotle, it can be properly treated as a singular term by subsequent users because of their beliefs about the original imposition of the name."
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Gutschmidt, Holger, Lang-Balestra, Antonella and Segalerba, Gianluigi, 235-255. Frankfurt: Ontos Verlag.

"Late medieval nominalism's ontological commitment is mainly to Aristotelian individual substances and individual qualities, the status of quantities is a matter of dispute (not in semantics, however, but in natural philosophy). In this paper the commentaries on pertinent Aristotelian texts by three main figures of Fourteenth century nominalism, William of Ockham, John Buridan, and Albert of Saxony, are presented and discussed. Regarding the relation between substance and accident the Christian Aristotelians had to conceive of it as a relation of dependence according to the natural laws and not as a relation of logical dependence; otherwise, the sacrament of the Eucharist could not be explained in Aristotelian terms. Finally, two deviating views are mentioned: According to John of Mirecourt reality consists solely of substances (with modes of being such and such), whereas according to Nicholas of Autrecourt ("the Medieval Hume") physical reality consists solely of accidents in the sense of appearances, sensations, sense data."

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- "As a master of arts John Buridan commented on Aristotle's logic. The *quaestiones*, in which specific problems are discussed in the traditional medieval form, are more elaborate and detailed commentaries.
- One of Aristotle's text to be commented are the *Categories* (*Praedicamenta*). The *Quaestiones in Praedicamenta* have been edited recently by J. Schneider (München, 1983); I have prepared a critical edition of Buridan's commentary

(*summulae*) on the same work, which is due to appear soon. This edition is part of an international project, of which it is the intention to issue the first complete edition of Buridan's *Summulae*, which contains eight treatises, supplemented with a new edition of his *Sophismata*.

In the present contribution I shall give an analysis of Buridan's commentary on the category of substance. Before entering this subject, I shall make some remarks on the general nature of the work. This contribution is practically the same as a part of the introduction to my forthcoming edition." p. 85

"4. A summary of the Contents

Buridan starts with a discussion on *aequivocatio*, *univocatio* and *denominatio*. Sometimes, he says, *aequivocatio* is attributed to a *word* having signification, sometimes to *things* signified. Here (3.1.1.) Buridan attributes *aequivocatio* to things as far as they are signified equivocally by one and the same word. This signification is not matched by one concept (*ratio*, 3.1.2), but by two, or more, one for each thing. E.g. a dog, a star and a fish are signified by the word *canis* ('dog') that may have supposition for them under different concepts.

There is univocation when the several things signified are united, not only by a common designation, but also by a common definition. Buridan emphasizes (3.1.2) that both *equivocatio* and *univocatio* are on the level of conventional terms and propositions, and are *not* properties of *mental* terms and propositions.

Equivocation and univocation are mutually opposed in an exhaustive division. The third item of the *Antepredicamenta*, denomination (*denominatio*), is different. For a term to be denominative it must satisfy both a morphological-cum-semantical criterion and a purely semantical one. First, (1.a) it must be a concrete term (a term signifying concrete entities), and (1.b) it must be morphologically related to the corresponding abstract term;

album ('white [thing]') satisfies (1.a-b), having *albedo* ('whiteness') as its abstract counterpart. Second, (2) the term must have appellation. This, Buridan explains, means that it must 'evoke' or 'connote' some disposition which is extrinsic to the nature of that for which the term supposits. *Album* ('white [thing]') satisfies this condition; it may supposit, say, for a man, but it also connotes something which is extrinsic (nonessential) to man, namely whiteness. By contrast, *homo* ('man') only satisfies criteria (1.a-b); it is a concrete noun with a morphologically related abstract counterpart, viz. *humanitas*. Criterion (2) remains unsatisfied because humanity is essential to all supposits of *homo* and thus cannot fulfil the role of an extrinsic disposition connoted by the term." p. 91 (notes omitted).

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Reprinted in: S. Ebbesen, *Topics in Latin Philosophy from the 12th-14th centuries. Collected Essays Volume 2*, Aldershot, Ashgate, 2009, pp. 209-220.

"John Buridan was a remarkable and courageous man. Remarkably consistent. He almost invariably says the same about the same things, and what he says about one subject is usually consistent with what he says about any other somehow related subject. His works abound in cross-references, from one part of a work to another, and from one work to another. He obviously wanted his readers to think of his philosophical works as one coherent corpus presenting one coherent philosophy. Perhaps this ought to scare the historian away from an attempt to interpret Buridan on the basis of one work. But, on the other hand, the fact that he very rarely disagrees with himself and the fact that he repeats his basic tenets in every work make it possible to reconstruct the essentials of Buridanian

philosophy without using all available sources, in particular because his pen was as sharp as his mind. His prose possesses to an eminent degree the virtue of clarity. This paper is based on treatise 8 of his *Summulae*, or Handbook of Logic. As subsidiary sources I have used the remaining part of the *Summulae* and his *quaestiones* on the *Prior* and *Posterior Analytics* and on the *Metaphysics*.

The very existence of treatise 8 of the *Summulae* demonstrates that Buridan was a man of courage. Treatises 1-7, which deal with 1) terms and propositions, 2) predicables, 3) categories, 4) supposition, 5) syllogistic, 6) topics and 7) fallacies, all have models in earlier literature which helped him structure his work. Treatise 8 has no known predecessor. The subject is 'Division, Definition and Demonstration'. Treatise 8 is the longest treatise of all, and demonstration is the subject that takes up most space by far. It takes a bold man to write a summulistic treatise on a subject not thus treated by his predecessors. It requires extra courage when one is Buridan, for the subject is that of Aristotle's *Posterior Analytics*. Is the universalism of the *Posterior Analytics* compatible with Buridanian mentalism and particularist ontology? It might seem not, but a professor from the fourteenth century could not neglect or reject Aristotle's treatment of a broad and important philosophical topic.

(...)

Buridan proceeds like people who renovate old uninhabitable houses. He keeps an Aristotelian facade, but changes the interior so that it fits his purposes. The titles of the ten chapters on demonstration look old-fashioned and Aristotelian. They are: 8.3 "On the questions about which knowledge is obtainable and on knowledge preceding demonstration"; 8.4 "On the affinity and difference between demonstrations and dialectical arguments, and between knowledge and opinion; 8.5 "On the indemonstrable principles of demonstration"; 8.6 "On 'being said of all and

in itself 'and on 'universal 'or 'qua itself ' "; 8.7 "On various classifications of demonstrations"; 8.8 "On 'demonstration because of ' "; 8.9 "On 'demonstration that' and whether demonstration may be circular"; 8.10 "On demonstration 'ad impossibile' "; 8.11 "On comparison of the different sorts of demonstration"; 8.12 "On how to settle each of the questions about which knowledge is obtainable". But this is just the facade behind which Buridan builds up his own doctrine of proof, applying a strongly biased interpretation to Aristotle's text." pp. 97-98.

20. Epstein, Richard. 1992. "A Theory of Truth Based on a Medieval Solution to the Liar Paradox." *History and Philosophy of Logic* no. 13:149-177.

"In the early part of the 14th century Jean Buridan wrote a book called *Sophismata*. Chapter 8 of that deals with paradoxes of self-reference, particularly the liar paradox. Modern discussions of the liar paradox have been dominated by the formal analysis of truth of Tarski, and more recently of Kripke, and Gupta. Each of those either denies that the sentence 'What I am now saying is false' is a proposition, or denies that the usual laws of logic hold for such sentences. In Buridan's resolution of the liar paradox that sentence is a proposition, every proposition is true or false though not both, and the classical laws of logic hold. In this paper I present a formal theory of truth based on Buridan's ideas as expounded by Hughes, contrasting it with the analyses of Tarski, Kripke, and Gupta. I believe that Buridan's ideas form the basis for the most convincing resolution of the liar paradox in a modern formal theory of truth.

I first survey the theories of Tarski, Kripke, and Gupta. Then I state the principles on which the Buridanian theory is based. After a brief description of how these principles are used in analyzing the truth-values of propositions, I set out the formal theory. Following that I discuss a number of examples in which the informal principles and the technical

methods are explained and tested for their aptness; in those discussions I often draw on Buridan's explanations."

21. Fitzgerald, Michael J. 2006. "Problems with Temporality and Scientific Propositions in John Buridan and Albert of Saxony." *Vivarium* no. 44:305-337.

"The essay develops two major arguments. First, if John Buridan's 'first argument' for the reintroduction of *natural supposition* is only that the "eternal truth" of a scientific proposition is preserved because subject terms in scientific propositions supposit for all the term's past, present, and future significata indifferently; then Albert of Saxony thinks it is simply ineffective.

Only the 'second argument', i.e., the argument for the existence of an '*atemporal copula*', adequately performs this task; but is rejected by Albert. Second, later fourteenth-century criticisms of Buridan's *natural supposition*, given in certain *Notabilia* from the anonymous author in, Paris, BnF, lat. 14.716, ff. 40va-41rb, are nothing but an interpolated hodge-podge of criticisms given earlier in the century against various views of Buridan's by Albert of Saxony. It is this fact that makes Albert the real source of late fourteenth-century criticisms of Buridan's view of *natural supposition*.

"

22. Flüeler, Christoph. 1999. "From Oral Lecture to Written Commentaries: John Buridan's Commentaries on Aristotle's *Metaphysics*." In *Medieval Analyses in Language and Cognition. Acts of the Symposium: The Copenhagen School of Medieval Philosophy*, edited by Ebbesen, Sten and Friedman, Russell L., 497-521. Copenhagen: Royal Danish Academy of Sciences and Letters.

"*Summary*. This paper focuses on John Buridan's reported commentaries, especially on the oldest manuscripts, with the aim of finding new evidence regarding the process from oral lecture to written commentary. Six among the more than 250 manuscripts containing authentic works by

Buridan were written in Paris during the philosopher's lifetime, and at least two of them show how the oral teaching of the Parisian master was converted into a written form. The *Expositions*, i.e. the literal commentaries, play an important role in these oldest manuscripts. These were understood as the foundation of the subsequently treated *Quaestiones*, and they had a fixed place in university teaching. The Parisian manuscript BN, lat. 16131 probably contains an original reportation (the original student's copy book) of both exposition of, and questions on, Aristotle's *Metaphysics*. The manuscript Darmstadt, Hessische LuHB, Hs. 561 contains a "compiled", i.e. revised, lecture on the same Aristotelian work, but not the final version as edited in 1518 by Josse Bade. The present study will examine the formal character of these different versions and their relation to one another."

23. Friedman, Russell L., and Ebbesen, Sten, eds. 2004. *John Buridan and Beyond. Topics in the Language Sciences, 1300-1700*. Copenhagen: Royal Danish Academy of Sciences and Letters.

Contains papers of a symposium held by the Royal Danish Academy of Sciences and Letters in Copenhagen in September 2001.

"Whereas the impressive contributions made by John Buridan (d. after 1358) to medieval logic and linguistics are widely recognized today, his influence in the later Middle Ages and Early Modern period remains largely uncharted, as indeed does the development of the language sciences more generally in that period. The eight articles and the introductory essay collected in this volume explore topics in logico-linguistic theory from Buridan in the fourteenth century through Hobbes and Vico in the seventeenth and eighteenth. The focus of the articles range from grammar and logic to epistemology and philosophical psychology, and in nearly every case they demonstrate the impact of Buridan's ideas in the centuries following his death.

Moreover, by investigating early modern thought against the backdrop of medieval ideas, the articles address the issue of the continuity or discontinuity of thought in this period on the border between medieval and modern, and indicate possible avenues of future research."

24. Geach, Peter. 1965. "A Medieval Discussion of Intentionality." In *Logic, Methodology and Philosophy of Science (Vol. 4)*, edited by Bar-Hillel, Yehoshua, 425-433. Amsterdam: North-Holland.

"In this paper I shall critically examine the way a fourteenth-century logician, Jean Buridan, dealt with certain puzzles about intentional verbs. The class of verbs I shall be considering will all of them be expressions that can be completed into propositions by adding two proper names; the class will include, not only ordinary transitive verbs, but also phrases of the verb-preposition type like 'look for' or 'shoot at', and furthermore constructions like 'hopes-will be a better man than his father' or 'believes-to be a scoundrel', which turn into propositions as soon as we add mention of who hopes or believes this and about whom he does so. In modern grammar, the term 'a verbal' rather than 'a verb' is used for this wider class; following a suggestion of Professor Bar-Hillel, I adopt this term.

In either or both of the proper-name places that go with such a verbal, it is possible, without destroying the, propositional structure (*salva congruitate*, as medieval logicians say), to substitute a phrase of some such form as 'some A' or 'every A' or 'the (one and only) A'; the letter 'A' here represents a simple or complex general term which is grammatically a noun or noun-phrase. The peculiarity of certain verbals that presently concern us comes out when such a phrase formed from a general term stands in object position, in a construction 'b F'd an A' or the like. Consider for example the sentence 'Geach looked for a detective story'. This sentence is ambiguous : in ordinary conversation we might successfully resolve the ambiguity by

asking the question 'Was what Geach was looking for a particular detective story, or was it just a detective story?' It is an odd psychological fact that this question would convey the intended distinction of meanings; for logically the words of the question leave it wholly obscure what is intended. After all, nothing in this world or in any possible world could be "just a detective story" without being "a particular detective story"; and even if such an individuum vagum could somehow have being, Geach could not read it, so it certainly is not what he looked for." p. 425

"In a way parallel to the Buridan convention we may distinguish between 'There is a poet whom both Smith and Brown admire' and 'Smith and Brown both admire the same poet'; the latter would cover the case where both Smith and Brown are victims of the same literary fraud as to the existence of a poet, as well as the more normal case where they both admire (say) Wordsworth's poetry. Let us use the expression 'AP' as short for 'admire as a poet someone conceived under the ratio evoked by'; then 'There is a poet whom both Smith and Brown admire' would come out as: For some x , x is a poet and, for some w , w is a description true just of x , and-both Smith and-Brown AP w whereas 'Smith and Brown both admire the same poet', taken as conveying only intentional identity, would come out in the simpler form:

For some w , w is a definite description, and Smith and Brown both AP w .

Unfortunately, the line of solution we have been following leads us into difficulties. Suppose we use 'D'd' as short for the verbal 'dreamed of someone under the ratio expressed by'. Then in our present view we should have to paraphrase 'There is a red-head Harris dreamed of as:

For some x , x is a red-head and, for some w , w is a description true just of x , and Harris D'd w .

Now suppose we take w to be the description 'the fattest woman in the world': The paraphrase would be true if

Harris dreamed of the fattest woman ili the 'world and the fattest woman in the world is in fact a redhead; but the propostion paraphrased might then quite well be false, because in Harris's dream there may have been no red-head, and the fattest woman he saw in his dream may have been as bald as an egg. (I owe this counter-example to my pupil Mr. David Bird) Similar difficulties arise for our account of intentional identify: for if c and d each worshipped something under the ratio expressed by 'the deity of the Sun', it does not follow that c and d both worshipped the same deity-c might be an ancient Egyptian worshipping the ancestor of Pharaoh, and d a Japanese worshipping the ancestress of the Mikado.

I hope this paper shows why modern logicians still need to take medieval logicians seriously. In great measure their problems are ours; while for some of them, like the problems of suppositio, modern logic provides adequate solutions, there are other problems, about modal and intentional contexts for example, that are still wide open; and the talent that was shown by medieval logicians in wrestling with their problems demands our deepest admiration." pp. 432-433

25. Ghisalberti, Alessandro. 1975. *Giovanni Buridano Dalla Metafisica Alla Fisica*. Milano: Vita e Pensiero.
26. ———. 2001. "The Categories of Temporality in William Ockham and John Buridan." In *The Medieval Concept of Time*, edited by Porro, Pasquale, 255-286. Leiden: Brill.
27. Grellard, Christophe. 2007. "Scepticism, Demonstration and the Infinite Regress Argument (Nicholas of Autrecourt and John Buridan)." *Vivarium*:328-342.
28. Habib, Nicholas. 1985. "A Medieval Perspective on the Meaningfulness of Fictitious Terms: A Study of John Buridan." *Franciscan Studies* no. 45:73-82.
29. Hall, Alexander W. 2008. "John Buridan: On Aristotle's *Categories*." In *Medieval Commentaries in Aristotle's*

Categories, edited by Newton, Lloyd A., 295-316. Leiden: Brill.

30. Herzberger, Hans G. 1973. "Dimensions of Truth." *Journal of Philosophical Logic* no. 2:535-556.

Reprinted in: Donald Hockney (ed.), *Contemporary Research in Philosophical Logic and Linguistic Semantics*, Dordrecht: Reidel, 1975, pp. 71-92.

31. Hubien, Hubert. 1975. "John Buridan on the Fourth Figure of the Syllogism." *Revue Internationale de Philosophie* no. 29:271-285.

32. ———. 1981. "Buridan and Lesniewski on the Copula." In *English Logic and Semantics: From the End of the Twelfth Century to the Time of Ockham and Burleigh*, edited by Braakhuis, Henk A.G., Kneepkens, Cornelis Henri and Rijk, Lambertus Marie de, 415-425. Nijmegen: Ingenium Publishers.

"It has often been contended that Lesniewski's Ontology is the best system in which to formalize medieval logic. I submit that this is not the case and propose a new one, which, as I shall show, is both more faithful to one of the medieval logics (for there is more than one) and richer than Ontology, since it contains it but is not contained in it." p. 415

33. Hughes, George. 1989. "The Modal Logic of John Buridan." In *Atti Del Convegno Internazionale Di Storia Della Logica. Le Teorie Della Modalità*, edited by Corsi, Giovanna, Mangione, Corrado and Mugnai, Massimo, 93-112. Bologna: CLUEB.

"This paper will be almost wholly expository. My aim in it is to give an outline, though I fear a very incomplete one, of the system of modal logic developed by one of the greatest of mediaeval logicians, the 14th century French philosopher John Buridan. I shall base my account on two of his logical works. One is his *Consequentiae*, a work on inferences in general, about a third of which is devoted to modal logic. There is an excellent modern edition of this work by Hubert Hubien, in the Introduction to which Hubien argues, to my

mind convincingly, that it was written about 1335. The other is his lengthy and comprehensive work on logic, the *Summulae de Dialectica*, which contains two substantial sections on modal logic. There are serious problems involved in dating this work, but I shall not try to discuss these here. Most of it, including all the modal material, still exists, unfortunately, only in manuscript form. The modal material is arranged differently in these two works, each is fuller than the other on certain topics, and there are a few discrepancies between them on points of detail; but substantially they present the same ideas, and for the most part I shall not try to distinguish between them here." p. 93

34. Jacquette, Dale. 1991. "Buridan's Bridge." *Philosophy* no. 66:455-471.

On Sophism 17 of Chapter 8 of *Sophismata (Insolubilia)*.

35. Karger, Elizabeth. 1984. "Un Débat Médiéval Sur Le Concept De Sujet D'un Énoncé Catégorique. Étude D'un Texte De Jean Buridan." In *Preuve Et Raisons À L'université De Paris. Logique, Ontologie Et Théologie Au Xive Siècle*, edited by Kaluza, Zénon and Vignaux, Paul, 111-125. Paris: Vrin.

"Le présent essai porte sur quelques pages du *Traité des suppositions* (1) de Jean Buridan. Dans ces pages, l'auteur présente un débat portant sur l'identification du sujet d'énoncés catégoriques (2) dont le terme initial est à un cas dit "oblique", c'est-à-dire autre que le nominatif (3). Selon certains logiciens -- que Buridan ne nomme pas --, c'est ce terme à un cas oblique qui est le véritable sujet de l'énoncé; selon l'auteur, au contraire, le sujet ne peut être qu'un terme au nominatif.

Un des exemples discutés est le suivant:

(1) *Cuiuslibet hominis asinus currit*.

Selon l'analyse récusée par Buridan, 'hominis ' est le sujet de cet énoncé, alors que, selon l'auteur, le sujet de (1) est 'hominis asinus' et "principalement" (4) 'asinus'.

D'aucuns jugeront peut-être que l'intérêt de ce débat réside dans l'occasion qu'il fournit de mettre en évidence la difficulté de la tâche à laquelle s'est épuisée la logique scolastique -- tâche qui aurait consisté à remédier aux insuffisances de la logique aristotélicienne.

Tel cependant n'est pas notre propos principal. Notre objectif dans l'étude de ce texte, fut de découvrir plutôt les divergences doctrinales en raison desquelles les théoriciens en présence proposent, pour les énoncés concernés, des analyses aussi différentes, et en particulier de dégager ce qui rend incompatibles *les deux concepts de sujet* présumés par l'une et l'autre des positions adverses.

Nous présentons donc ici les résultats de cette étude. Nous commencerons par exposer l'essentiel de l'argumentation par laquelle, d'après Buridan, ces logiciens anonymes défendent leur thèse ; nous serons ainsi en mesure de dégager les éléments principaux d'une certaine doctrine logico-grammaticale. Nous passerons en second lieu à l'examen des objections que Buridan oppose aux raisons de ses adversaires, découvrant à travers elles ainsi que dans la défense qu'il apporte à sa thèse propre, les caractéristiques d'une doctrine profondément différente de la première. Nous terminerons par une évaluation, du point de vue de leur mérite logique, des deux positions en présence." pp. 111-112.

36. ———. 1992. "Syllogistique Buridanienne." *Dialogue.Canadian Philosophical Review* no. 31:445-458.
37. ———. 1993. "A Theory of Immediate Inferences Contained in Buridan's Logic." In *Argumentationstheorie. Scholastische Forschungen Zu Den Logischen Und Semantischen Regeln Korrekten Folgerns*, edited by Jacobi, Klaus, 407-429. Leiden: Brill.
38. ———. 2007. "John Buridan's Theory of the Logical Relations between General Modal Formulae." In *Aristotle's Peri Hermeneias in the Latin Middle Ages. Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G.

and Kneepkens, Cornelis Henri, 429-444. Nijmegen: Ingenium Publishers.

39. ———. 2010. "A Buridanian Response to a Fourteenth Century Skeptical Argument and Its Rebuttal by a New Argument in the Early Sixteenth Century." In *Rethinking the History of Skepticism. The Missing Medieval Background*, edited by Lagerlund, Henrik, 215-232. Leiden: Brill.
40. Kärkkäinen, Pekka. 2004. "On the Semantics of 'Human Being' and 'Animal' in Early 16th-Century Erfurt." *Vivarium* no. 42:237-256.

"John Buridan discussed the problem, whether it follows from the definition of the term 'animal' that all quantitative parts of an animal are to be called animals. His solution was that parts of the animal are to be called animals, though in an extraordinary, non-connotative, sense of the term. The problem was variously discussed by some later Buridanian authors from Erfurt. Bartholomaeus Arnoldi de Usingen ends up to deny the use of such terms as 'animal' and 'human being' as connotative terms. Jodocus Trutfetter, however, uses the distinction between the absolute and connotative senses of these terms without reservation."
41. King, Peter. 1985. "Introduction to Jean Buridan's Logic." In *Jean Buridan's Logic. The Treatise on Supposition. The Treatise on Consequences*, 3-82. Dordrecht: Reidel.
42. ———. 2001. "Consequence as Inference: Mediaeval Proof Theory 1300-1350." In *Medieval Formal Logic. Obligations, Insolubles and Consequences*, edited by Yrjönsuuri, Mikko, 117-145. Dordrecht: Kluwer.
43. Klima, Gyula. 1991. "Latin as a Formal Language. Outlines of a Buridanian Semantics." *Cahiers de l'Institut du Moyen-Âge Grec et Latin* no. 61:78-106.
44. ———. 1999. "Buridan's Logic and the Ontology of Modes." In *Medieval Analyses in Language and Cognition. Acts of the Symposium the Copenhagen School of Medieval Philosophy January 10-13 1996*, edited by Ebbesen, Sten and Friedman, Russell L., 473-495. Copenhagen: Royal Danish Academy of Sciences and Letters.

"Summary: The aim of this paper is to explore the relationships between Buridan's logic and the ontology of modes (*modi*). Modes, not considered to be really distinct from absolute entities, could serve to reduce the ontological commitment of the theory of the categories, and thus they were to become ubiquitous in this role in late medieval and early modern philosophy. After a brief analysis of the most basic argument for the real distinction between entities of several categories ("the argument from separability"), I point out that despite nominalist charges to the contrary, "older realists" - that is, authors working before and around Ockham's time - were not committed to such real distinctions, and thus to an overpopulated ontology, by their *semantic* principles. However, what *did* entail such a commitment on their part, along with the argument from separability, was treating abstract terms in several accidental categories as "rigid designators", that is, essential predicates (species and genera) of their *supposita*. Therefore, although in the form of "extra-categorical" *modi essendi* modes were well established in earlier medieval thought, their appearance *within* the theory of categories was conditioned on analyzing several abstract terms in the accidental categories as non-essential predicates of their particulars, something that "older realists" would in general not endorse. (This does not mean that even "older realists" were universally committed to really distinct entities in all ten categories. See on this e.g. notes 13 and 18.) Next, I show how this type of analysis is achieved "automatically" by Buridan's theory of "eliminative" nominal definitions (in contrast to the older "non-eliminative" theory). However, since "realist" semantic principles in themselves did not yield a commitment to really distinct entities in all categories, it was also open for later "realists" to operate with not-really-distinct modes in several categories, although using different, "non-nominalist" tactics to treat the abstract accidental terms signifying them as non-rigid

designators. The conclusion of the paper is that, as a consequence, both nominalist and later "realist" thinkers were able to achieve the same degree of ontological reductions in their respective logical frameworks, and so it was not so much their ontologies as their different logical "tactics" that set them apart."

45. ———. 2003. "John Buridan." In *A Companion to Philosophy in the Middle Ages*, edited by Gracia, Joerge J.E. and Noone, Timothy B., 340-348. Oxford: Blackwell.
46. ———. 2004. "John Buridan on the Acquisition of Simple Substantial Concepts." In *John Buridan and Beyond. Topics in the Language Sciences 1300-1700*, edited by Ebbesen, Sten and Friedman, Russell L., 17-32. Copenhagen: C. A. Reitzel.
47. ———. 2004. "Consequences of a Closed, Token-Based Semantics: The Case of John Buridan." *History and Philosophy of Logic* no. 25:95-110.
 "This paper argues for two principal conclusions about natural language semantics based on John Buridan's considerations concerning the notion of formal consequence, that is, formally valid inference. (1) Natural languages are essentially semantically closed, yet they do not have to be on that account inconsistent. (2) Natural language semantics has to be token based, as a matter of principle. The paper investigates the Buridanian considerations leading to these conclusions, and considers some obviously emerging objections to the Buridanian approach."
48. ———. 2004. "John Buridan and the Force-Content Distinction." In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 415-427. Firenze: Leo S. Olschki.
49. ———. 2004. "The Demonic Temptations of Medieval Nominalism: Mental Representation and "Demon Skepticism"." *Proceedings of the Society for Medieval Logic and Metaphysics* no. 4:37-44.

50. ———. 2005. "The Essentialist Nominalism of John Buridan." *Review of Metaphysics* no. 58:301-315.
"To many contemporary philosophers, the phrase "essentialist nominalism" may appear to be an oxymoron. After all, essentialism is the doctrine that things come in natural kinds characterized by their essential properties, on account of some common nature or essence they share. But nominalism is precisely the denial of the existence, indeed, the very possibility of such shared essences. Nevertheless, despite the intuitions of such contemporary philosophers, John Buridan was not only a thoroughgoing nominalist, as is well-known, but also a staunch defender of a strong essentialist doctrine against certain skeptics of his time. But then the question inevitably arises: could he consistently maintain such a doctrine?

In the following discussion I will first examine Buridan's essentialism to show why he could reasonably think that he can both adhere to his nominalist metaphysics and endorse a version of essentialism that can serve as the foundation of genuine scientific knowledge in the strong Aristotelian sense.

In the subsequent section I will argue that on the basis of his logical theory of essential predication Buridan is definitely able to maintain a version of essentialism that is sufficient to provide the required foundation of valid scientific generalizations, and to refute skeptical doubts against the possibility of such a foundation.

Next, I will examine the question whether Buridan's solution is consistent with the broader context of his logic and epistemology. In this section I will argue that although Buridan's logical theory is consistent with his nominalist essentialist position, his cognitive psychology is not. In particular, I will argue that Buridan's abstractionist account of how we acquire our simple substantial concepts is incompatible with his account of the semantic function of absolute terms subordinated to these concepts.

Finally, I will draw some general conclusions from this discussion concerning the relationships between metaphysical essentialism and the philosophy of mind and language." (notes omitted)

51. ———. 2005. "Quine, Wyman, and Buridan: Three Approaches to Ontological Commitment." *Korean Journal of Logic* no. 8:1-22.
52. ———. 2006. "The Universality of Logic and the Primacy of Mental Language in the Nominalist Philosophy of Logic of John Buridan." *Mediaevalia Philosophica Polonorum* no. 35:167-177.
53. ———. 2007. "Aquinas Vs. Buridan on Essence and Existence." *Proceedings of the Society for Medieval Logic and Metaphysics* no. 7:66-73.
54. ———. 2008. "The Nominalist Semantic of Ockham and Buridan: A 'Rational Reconstruction'." In *Mediaeval and Renaissance Logic*, edited by Gabbay, Dov and Woods, John, 389-431. Amsterdam: Elsevier.
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55. ———. 2008. "Logic without Truth. Buridan on the Liar." In *Unity, Truth and the Liar. The Modern Relevance of Medieval Solutions to the Liar Paradox*, edited by Rahman, Shahid, Tulenheimo, Tero and Genot, Emmanuel, 86-112. New York: Springer.
56. ———. 2009. *John Buridan*. New York: Oxford University Press.
57. ———. 2010. "The Anti-Skepticism of John Buridan and Thomas Aquinas: Putting Skeptics in Their Place Versus Stopping Them in Their Tracks." In *Rethinking the History of Skepticism. The Missing Medieval Background*, edited by Lagerlund, Henrik, 145-170. Leiden: Brill.
58. ———. 2011. "Two *Summulae*, Two Ways of Doing Logic: Peter of Spain's 'Realism' and John Buridan's 'Nominalism'." In *Methods and Methodologies. Aristotelian Logic East and West, 500-1500*, edited by Cameron, Margaret and Marenbon, John, 109-126. Leiden: Brill.
59. Knuuttila, Simo. 1991. "Buridan and Aristotle's Modal Syllogistic." In *Historia Philosophiae Medii Aevi. Studien*

Zur Geschichte Der Philosophie Des Mittelalters. Festschrift Für Kurt Flasch Zu Seinem 60. Geburtstag. (Vol. I), edited by Mojsisch, Burkhard and Pluta, Olaf, 477-488.

Amsterdam: B. R. Grüner.

"In the first section of this paper some remarks are made on Aristotle's modal syllogistic. In the second part it is shown at a general level how Aristotle's theory is related to what Buridan says about modal syllogisms. The purpose of the paper is to elucidate late medieval attitudes towards Aristotle's modal logic." (p. 477)

60. Krieger, Gerhard. 2003. *Subjekt Und Metaphysik. Die Metaphysik Des Johannes Buridan*. Münster: Aschendorff.

61. ———. 2005. "Menschliche Vernunft Als Terminus Der Reflexion: Zu Einer Übereinstimmung Zwischen Mittelalterlicher Philosophie Und Kant." *Kant-Studien* no. 96:187-207.

"The article deals with the metaphysical thought of the Magister Artium John Buridan, who was active in Paris in the first half of the fourteenth century, in the context of the discussion of the

relationship of medieval to modern philosophy.

Systematically, the justification of this investigation is that Buridan is in agreement with Kant as to the primacy of practical reason. To this extent, this consideration of the metaphysics of John Buridan in comparison to that of Kant deals with the question of the meaning of the primacy of practical reason for the transcendental justification of knowledge and science and, with this question, also with the transformation of metaphysics."

62. ———. 2006. "*Conceptus Absolutus*: Zu Einer Parallele Zwischen Wilhelm Von Ockham, Johannes Buridan Und Nicolaus Cusanus." In *Intellectus Und Imaginatio. Aspekte Geistiger Und Sinnlicher Erkenntnis Bei Nicolaus Cusanus*, edited by, André, João Maria, Krieger, Gerhard and Schwaetzer, Harald, 3-18. Amsterdam: B.R. Grüner.

63. Kukkonen, Taneli. 2005. "'The Impossible, Insofar as It Is Possible': Ibn Rushd and Jean Buridan on Logic and

Natural Theology." In *Logik Und Theologie. Das Organon Im Arabischen Und Im Lateinischen Mittelalter*, edited by Perler, Dominik and Rudolf, Ulrich, 447-467. Leiden: Brill.

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Buridan's Logic and Metaphysics: An Annotated Bibliography (Second Part: L - Z)

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For Buridan's contributions to the theories of supposition and mental language see: [Medieval Theories of Supposition \(Reference\) and Mental Language](#)

1. Lagerlund, Henrik. 2000. *Modal Syllogistics in the Middle Ages*. Leiden: Brill.

See Chapter 5. *The systemtization of modal syllogistic* pp. 130-164.

"It is unfortunate that of Buridan's logical works dealing with modal logic and modal syllogistic only the *Consequentiae* has been edited (*). This is probably the reason why so few studies of Buridan's modal logic have been done. The most important of the studies that do exist is G.E. Hughes' paper, 'The Modal Logic of John Buridan' from 1989. My present study will mainly extend and clarify what has been said by Hughes." p. 36

- (*) [This was written before the publication of G. Klima's translation of the *Summulae de Dialectica* in 2001].
2. ———. 2004. "Vague Concepts and Singular Terms in a Buridanian Language of Thought Tradition." *Proceedings of the Society for Medieval Logic and Metaphysics* no. 4:25-36.
 3. ———. 2006. "What Is Singular Thought? Ockham and Buridan on Singular Terms in the Language of Thought." In *Mind and Modality. Studies in the History of Philosophy in Honour of Simo Knuuttila*, edited by Hirvonen, Vesa, Holopainen, Toivo J. and Tuominen, Miira, 217-237. Leiden: Brill.
 4. ———. 2010. "Skeptical Issues in Commentaries on Aristotle's *Posterior Analytics*: John Buridan and Albert of Saxony." In *Rethinking the History of Skepticism. The Missing Medieval Background*, edited by Lagerlund, Henrik, 193-214. Leiden: Brill.
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 6. ———. 2004. *Mental Language: A Key to the Understanding of Buridan's Semantics*.
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Reprinted in: E. A. Moody - *Studies in medieval philosophy, science, and logic. Collected papers 1933-1969* - Berkeley, University of California Press, 1975, pp. 441-453.

10. Normore, Calvin. 1963. "Buridan's Ontology." In *Essays in Ontology*, edited by B., Allaire Edwin, 189-203. The Hague: Martinus Nijhoff.

"Here is a recipe for ontology. First divide the expressions of one's language into those which purport to pick things out and those which don't. Then see whether some of those which purport to pick things out can be defined in terms of others. Finally admit into your ontology whatever an undefinable term purports to pick out. This scheme expresses (though vaguely and incompletely) one of the central intuitions behind many ontological programmes. What is admitted by an ontologist operating within this framework will depend, of course, upon how he or she divides expressions, on what resources of definition are available, and, perhaps, on pressures from other theories. What I hope to do in this paper is to show the influence of the intuition behind this sketch on the work of the fourteenth century Parisian master Jean Buridan.

To some extent, I shall compare Buridan's views with those of his contemporary, William Ockham. In doing so, I hope both to present Buridan's own very striking contributions to ontology and to shed a little light on the inner life of 14th century nominalism." (p. 189).

11. Novaes, Catarina Dutilh. 2004. "The Buridanian Account of Inferential Relations between Doubly Quantified Propositions: A Proof of Soundness." *History and Philosophy of Logic* no. 25:225-243.

"On the basis of passages from John Buridan's *Summula Suppositionibus* and *Sophismata*, E. Karger has reconstructed what could be called the 'Buridanian theory of inferential relations between doubly quantified propositions', presented in her 1993 article 'A theory of immediate inference contained in Buridan's logic'. In the

reconstruction, she focused on the syntactical elements of Buridan's theory of modes of personal supposition to extract patterns of formally valid inferences between members of a certain class of basic categorical propositions. The present study aims at offering semantic corroboration -- a proof of soundness -- to the inferential relations syntactically identified by E. Karger, by means of the analysis of Buridan's semantic definitions of the modes of personal supposition. The semantic analysis is done with the help of some modern logical concepts, in particular that of the model. In effect, the relations of inference syntactically established are shown to hold also from a semantic point of view, which means thus that this fragment of Buridan's logic can be said to be sound."

12. ———. 2005. "Buridan's *Consequentia*: Consequence and Inference within a Token-Based Semantics." *History and Philosophy of Logic* no. 26:277-297.

"I examine the theory of *consequentia* of the medieval logician, John Buridan. Buridan advocates a strict commitment to what we now call proposition-tokens as the bearers of truth-value. The analysis of Buridan's theory shows that, within a token-based semantics, amendments to the usual notions of inference and consequence are made necessary, since pragmatic elements disrupt the semantic behavior of propositions. In my reconstruction of Buridan's theory, I use some of the apparatus of modern two-dimensional semantics, such as two-dimensional matrices and the distinction between the context of formation and the context of evaluation of utterances."

13. ———. 2005. "In Search of the Intuitive Notion of Logical Consequence." In *The Logica Yearbook 2004*, edited by Behounek, Libor, 109-123. Prague: Filosofia.
"After decades of predominant focus on the notion of logical truth, the debate on the concept of logical consequence among philosophers and logicians was re-ignited by J. Etchemendy's book *The Concept of Logical Consequence*

(1990). His main tenet was that the model-theoretic notion of logical consequence did not capture adequately the corresponding intuitive notion. One of Etchemendy's central claims was that the intuitive notion could be understood essentially from two different perspectives, one representational and one interpretational - and that the model-theoretic notion failed to match either.

Some years ago, S. Shapiro (1998) sought to vindicate the model-theoretic notion of logical consequence; one of his arguments was that the dichotomy representational/interpretational notion of logical consequence was in a certain way infelicitous, since, according to him, a faithful rendering of the intuitive concept would have to have elements of both notions. Clearly, the resolution of issue as to whether the model-theoretic notion correctly captures the intuitive notion presupposes an at least minimally adequate characterization of this intuitive notion. Shapiro claimed that Etchemendy hadn't really provided such a characterization (1), and attempted to formulate one himself. He further claimed that, thus characterized, the intuitive notion was indeed correctly captured by the model-theoretic notion (albeit with some adjustments). (2)

In this paper, I do not discuss Shapiro's defense of the model-theoretic notion; rather I examine his contention that the best rendering of the intuitive notion of logical consequence is what he called the 'conglomeration' notion, that is, the hybrid notion that combines both the representational and the interpretational view on consequence. More specifically, I claim that such a hybrid view was held by the medieval logician John Buridan (Cf. Hubien, *Iohannis Buridani tractatus de consequentiis*, 1976), and that this fact offers significant historical support to Shapiro's version of the intuitive concept of (logical) consequence."

(1) Cf. Stewart Shapiro 'Logical consequence: models and modality'. In Matthias Schirn (ed.), *Philosophy of Mathematics Today*. Oxford, Oxford University Press, 1988, pp. 131-156. p.143.

(2) 'My claim is that model-theoretic consequence can be made into a good model of this notion [the 'hybrid' intuitive notion of logical consequence] and that both the intuitive notion so characterized and its mathematical model are useful tools for shedding light on the normative/modal/semantic notion of correct reasoning in natural language, the target of logic.' (Shapiro 1998, 148)

14. ———. 2009. "Lessons on Sentential Meaning from Mediaeval Solutions to the Liar Paradox." *Philosophical Quarterly* no. 59:682-704.

"Fourteenth-century treatises on paradoxes of the liar family, especially Bradwardine's and Buridan's, raise issues concerning the meaning of sentences, in particular about closure of sentential meaning under implication, semantic pluralism and the ontological status of 'meanings', which are still topical for current theories of meaning. I outline ways in which they tend to be overlooked, raising issues that must be addressed by any respectable theory of meaning as well as pointing in the direction of possible answers. I analyse a Bradwardinian theory of sentential meaning as it emerges from his treatment of liar sentences, exploring where it requires more thorough elaboration if it is to be a fully developed theory of sentential meaning. "

15. Nuchelmans, Gabriel. 1988. "Appellatio Rationis in Buridan, *Sophismata* Iv, 9-15." In *Die Philosophie Im 14. Und 15. Jahrhundert. In Memoriam Konstanty Michalsky (1879-1947)*, edited by Pluta, Olaf, 67-84. Amsterdam: B.R. Grüner.

Reprinted as Chapter VIII in: G. Nuchelmans - *Studies in the History of Logic and Semantics, 12th-17th Centuries* - Edited by E. P. Bos - Aldershot, Variorum, 1996.

16. Pérez-Ilzarbe, Paloma. 2004. "John Buridan and Jerónimo Pardo on the Notion of *Propositio*." In *John Buridan and Beyond. Topics in the Language Sciences 1300-1700*, edited by Ebbesen, Sten and Friedman, Russell L., 153-182. Copenhagen: C. A. Reitzel.
17. ———. 2004. "'Complexio, Enunciatio, Assensus': The Role of Propositions in Knowledge According to John Buridan." In *Medieval Theories on Assertive and Non-Assertive Language*, edited by Maierù, Alfonso and Valente, Luisa, 401-414. Firenze: Leo S. Olschki.
18. Perini-Santos, Ernesto. 2008. "John Buridan on the Bearer of Logical Relations." *Logica Universalis*:59-70.
"According to John Buridan, the time for which a statement is true is underdetermined by the grammatical form of the sentence - the intention of the speaker is required. As a consequence, truth-bearers are not sentence types, nor sentence tokens plus facts of the context of utterance, but statements. Statements are also the bearers of logical relations, since the latter can only be established among entities having determined truth-conditions. This role of the intention of the speaker in the determination of what is said by an utterance is not isolated in medieval semantics."
19. ———. 2011. "John Buridan's Theory of Truth and the Paradox of the Liar." *Vivarium* no. 49:184-213.
"The solution John Buridan offers for the Paradox of the Liar has not been correctly placed within the framework of his philosophy of language. More precisely, there are two important points of the Buridanian philosophy of language that are crucial to the correct understanding of his solution to the Liar paradox that are either misrepresented or ignored in some important accounts of his theory. The first point is that the Aristotelian formula, '*propositio est vera quia qualitercumque significat in rebus significatis ita est*', once amended, is a correct way to talk about the truth of a sentence. The second one is that he has a double indexing theory of truth: a sentence is true in a time about a time,

and such times should be distinguished in the account of the truth-conditions of sentences. These two claims are connected in an important way: the Aristotelian formula indicates the time about which a sentence is true. Some interpreters of the Buridanian solution to the paradox, following the lead of Herzberger, have missed these points and have been led to postulate truth-values gaps, or surrogates of truth-value gaps, when there is nothing of this sort in his theory. I argue against this tradition of interpretation of Buridan and propose an interpretation of his solution to the Liar."

20. Perreiah, Alan R. 1972. "Buridan and the Definite Description." *Journal of the History of Philosophy* no. 10:153-160.

"Previously unpublished commentaries by Buridan on Aristotle's *Physics* (Book I, Question X) and *Metaphysics* (Book VII, Question XX) are examined in order to determine whether the 14th-century philosopher and logician anticipated a theory of descriptions. The writings show that Buridan's distinctions between singular and common concepts parallels Russell's between knowledge by acquaintance and by description. Basic features of determinate concepts are studied, particularly those of existence and identity. Buridan's treatment of these matters shows that: (a) he had all of the concepts needed to analyze the iota-operator (b) he was sensitive to the restriction that predication involving unquoted descriptive phrases presuppose that existence and identity requirements are met and (c) he appreciated the peculiar behavior of determinate concepts in logical inference. Buridan's theory of concepts is applied to some problematic expressions in direct discourse."

21. Pinborg, Jan, ed. 1976. *The Logic of John Buridan*. Copenhagen: Museum Tusculanum Press.
Acts of the 3rd European Symposium on medieval logic and semantics, Copenhagen 16-21 November 1975.

22. Pironet, Fabienne. 1993. "John Buridan on The Liar Paradox: Study of an Opinion and Chronology of the Texts." In *Argumentationstheorie. Scholastische Forschungen Zu Den Logischen Und Semantischen Regeln Korrekten Folgerns*, edited by Jacobi, Klaus, 293-300. Leiden: Brill.
23. Pluta, Olaf. 2002. "John Buridan on Universal Knowledge." *Bochumer philosophisches Jahrbuch für Antike und Mittelalter* no. 7:25-46.
24. Priest, Graham, and Read, Stephen. 2004. "Intentionality: Meinongianism and the Medievals." *Australasian Journal of Philosophy* no. 82:421-442.

"Intentional verbs create three different problems: problems of nonexistence, of indeterminacy, and of failure of substitutivity.

Meinongians tackle the first problem by recognizing nonexistent objects; so too did many medieval logicians. Meinongians and the medievals approach the problem of indeterminacy differently, the former diagnosing an ellipsis for a propositional complement, the latter applying their theory directly to non-propositional complements. The evidence seems to favor the Meinongian approach. Faced with the third problem, Ockham argued bluntly for substitutivity when the intentional complement is non-propositional; Buridan developed a novel way of resisting substitutivity. Ockham's approach is closer to the Meinongian analysis of these cases; Buridan's seems to raise difficulties for a referential semantics. The comparison between the Meinongian and medieval approaches helps to bring out merits and potential pitfalls of each."
25. Read, Stephen. 2002. "The Liar Paradox from John Buridan Back to Thomas Bradwardine." *Vivarium* no. 40:189-218.

"My aim is to counter recent infatuation with John Buridan's analysis in his *Sophismata* (circa 1356-7) of the liar paradox and other insolubles, and show not only how he derived his solution from Thomas Bradwardine's

Insolubilia (circa 1324), but how he altered it for the worse. Buridan was a great logician and philosopher. He was careful, methodical and had a great influence on succeeding generations. But his analysis of the liar paradox was flawed. It introduced an ad hoc supplement to the truth-conditions of just those propositions which induce paradox to prevent the contradiction from arising. What was really clever in his analysis, and attracted the attention of, among others in recent decades, Moody, Prior and Hughes, was in fact derived from Bradwardine, in whose hands it was dealt with both consistently and successfully. By all the historical evidence, Bradwardine's proposal was an original insight. On analysis, it is seen to be a great and instructive one, too."

26. ———. 2012. "John Buridan's Theory of Consequence and His Octagon of Opposition." In *Around and Beyond the Square of Opposition*, edited by Béziau, Jean-Yves and Jacquette, Dale, 93-110. Basel: Birkhäuser.
"One of the manuscripts of Buridan's *Summulae* contains three figures, each in the form of an octagon. At each node of each octagon there are nine propositions. Buridan uses the figures to illustrate his doctrine of the syllogism, revising Aristotle's theory of the modal syllogism and adding theories of syllogisms with propositions containing oblique terms (such as 'man's donkey') and with propositions of "non-normal construction" (where the predicate precedes the copula). O-propositions of non-normal construction (i.e., 'Some S (some) P is not') allow Buridan to extend and systematize the theory of the assertoric (i.e., non-modal) syllogism. Buridan points to a revealing analogy between the three octagons. To understand their importance we need to rehearse the medieval theories of signification, supposition, truth and consequence."
27. Reina, Maria Elena. 2002. *Hoc Hic Et Nunc. Buridano, Marsilio Di Inghen E La Conoscenza Del Singolare*. Firenze: Leo S. Olschki.

28. Rijk, Lambertus Marie de. 1976. "On Buridan's Doctrine of Connotation." In *The Logic of John Buridan. Acts of the Third European Symposium on Medieval Logic and Semantics, Copenhagen 16-21 November 1975*, edited by Pinborg, Jan, 91-100. Copenhagen: Museum Tusculanum. Reprinted as chapter XI in: *Through language to reality: studies in medieval semantics and metaphysics*. "Mediaeval Terminist logic was concerned with the so-called properties of terms (*proprietaes terminorum*), to the extent that it not only studied the formal structures of Latin language, its logical syntax, and all kinds of specifications within this scope, but also interpreted the linguistic elements and structures. This interpretation mainly focussed on what the moderns would call semantics rather than on formal logic as such. The properties of terms (*significatio*, *appellatio*, *suppositio* and its various forms: *ampliatio*, *restrictio*, *distributio*) were investigated in their relation to the so-called *res extra animam* (extra-mental reality). Two statements can be made. First: Who wants to detect a Mediaeval thinker's implicit ontological points of view, finds a wealth of firm evidence in his doctrine of the properties of terms. Secondly: Within the domain of these properties it is Buridan's *appellatio* that has a very interesting role because of its affinity with the modern concept of connotation. So Buridan's *appellatio* is entitled to have the attention of both the historians of Mediaeval thought and learning as of those modern logicians who do not want to seclude themselves from the historical background of modern doctrines. My approach to the matter concerned now is to compare Buridan's *appellatio* with modern connotation, more specifically to put the translation 'connotation' for Buridan's *appellatio* to the test." p. 91
29. ——. 1992. "John Buridan on Universals." *Revue de Métaphysique et de Morale* no. 97:35-59.

"It is common knowledge that Plato strongly believed that, in order to explain the nature of whatever is (either things or states of affairs, including Man and his environment), the assumption of Transcendent Universal Forms is indispensable. In his view, these universal Forms are the ontic causes of each and every sublunary entity, which all owe their being to their sharing in these Forms.

Consequently, everyone who is in want of firm knowledge (*episteme*) about the things of the outside world is bound to direct his attention to the transcendent domain of the universal Forms'.

However, Plato was the first to recognise, and seriously deal with, the objections that can be raised to this doctrine.

These objections mainly concern the status (and the dignity, however modest) of our transient world and, above all, the possibility to obtain, true knowledge of this world as *it stands*, in its ever-changing nature, that is." p. 35

(...)

"To be sure, the Medievals all rejected the Platonic Ideas taken as separate substances and they adhered to the Aristotelian common sense principle that only individuals have independent existence. Nevertheless, they were still under the spell of the status of «universal being» as the indispensable basis of true knowledge.

Marylin McCord Adams has analysed some early fourteenth century solutions to the problem of universals (Scotus, Ockham, Burley and Harclay) (*). In McCord's article Buridan's view of the matter is left out of consideration. Quite understandably so, since Buridan's solution to the problem differs considerably from the sophisticated arguments given by his contemporaries. Buridan seeks for a solution in analysing the several ways of human understanding. In directing his attention to the propositional attitude involved in the cognitive procedure Buridan is remarkably close to the ingenious solution Peter Abelard had come up with two centuries earlier. In the next

sections I shall give an outline of Abelard's treatment of the question of universals followed by an analysis of Buridan's discussion of the matter (as found in his commentary on the *Metaphysics* and elsewhere)." p. 37

(...)

"We may conclude, then, that two bright logicians of the Parisian tradition have come up with quite an ingenious solution to the problem of universals. Both of them started out from the firm conviction that nothing exists but particulars. Nevertheless, they apparently were not satisfied with purely extensional solutions as brought forward by Oxford logicians such as Heytesbury and Ockham. Maybe extensionalists are out to show how people *ought* to think. Abelard and Buridan, however, were especially interested in the various ways of conceiving we *actually* use in daily life, in our attempts to conceptually deal with the outside world."

p. 59

(*) "Universals in the early Fourteenth century" in *Cambridge History of Later Medieval Philosophy, from the rediscovery of Aristotle to the desintegration of Scholasticism 1100-1600* pp. 411-439.

30. ———. 1993. "On Buridan's View of Accidental Being." In *John Buridan: A Master of Arts. Some Aspects of His Philosophy. Acts of the Second Symposium Organized by the Dutch Society for Medieval Philosophy Medium Aevum on the Occasion of Its 15th Anniversary.*

Leiden-Amsterdam (Vrije Universiteit), 20-21 June, 1991., edited by Bos, Egbert Peter and Krop, Henri A., 41-51.

Nijmegen: Ingenium Publishers.

"One of the most striking characteristics of late medieval metaphysics is the upgrading of 'accidental being'. The strict opposition between '*esse per se*' and '*esse per accidens*', which had been of paramount importance ever since Aristotle, has lost its relevance in the ontological discussions of the fourteenth century. The status of 'accidental being' came rather close to that of 'substantial being'. In the views

of philosophers such as Ockham and Buridan (not to mention thinkers like Crathorn) the nature of 'accidental being' (or rather 'quantitative and qualitative being') can no longer be properly defined in terms of ontological dependency upon substance. In other words, '*per se* subsistence' is assigned not only to substance but to 'accidental being' as well.

In the present contribution I will illustrate this development by discussing some of Buridan's expositions in his *Questiones* commentary on Aristotle's *Metaphysics* (IV, q. 6 and VII, q. 3-4)." p. 41

31. ———. 1994. "John Buridan on Man's Capability of Grasping the Truth." In *Scientia Et Ars Im Hoch- Und Spätmittelalter*, edited by Craemer-Rügenberg, Ingrid and Speer, Andreas, 282-303. Berlin, New York: Walter de Gruyter.

Miscellanea Mediaevalia, vol. 22/1.

"As is well-known, two subjects are distinctive of the fourteenth century theory of cognition, namely '*certitudo*' and '*evidentia*'. It is true, thirteenth century philosophers, such as Thomas Aquinas, were also concerned with certitude and evidentness as indispensable requisites for 'true knowledge' ('*scientia*'). However, until the end of the thirteenth century certitude and evidentness were not prominent in the discussions about the cognitive procedure nor were they treated as separate matters, requiring separate attention. In Thomas Aquinas for example, the conviction that man is really capable of grasping the truth with certainty is really constitutive of his philosophical (and theological) thought and praxis (*), or to speak with J. A. Aertsen, of 'Thomas' way of thought'.(**) This, however, does not alter the fact that in Aquinas' philosophy '*certitudo*' is not highlighted as such, and the specific role of '*evidentia*' is even virtually ignored.

Buridan's theory of cognition, on the contrary, clearly focusses on the ingredients '*certitudo*' and '*evidentia*', and,

within this framework, on the notion of 'assensus'. In the present paper I aim to elucidate the role of this key notion of John Buridan's theory of cognition."

(*) See the excellent paper by Gerard Verbeke, "Certitude et incertitude de la recherche philosophique selon saint Thomas d'Aquin", in: *Rivista di Filosofia neo-scolastica* 66 (1974), 740-57.

(**) Jan Aertsen, *Nature and Creature. Thomas Aquinas' Way of Thought. Studien und Texte zur Geistesgeschichte des Mittelalters* herausgegeben von Albert Zimmermann, Band XXI, Leiden etc. 1988, passim.

32. Roberts, Louise Nisbet. 1952. "Formalism of Terminist Logic in the Fourteenth Century." *Tulane Studies in Philosophy* no. 1:107-112.
33. ———. 1952. *An Introduction to the Terminist Logic of John Buridan*.
Unpublished Ph.D Thesis, available at Proquest Dissertation Express.
34. ———. 1953. "Every Proposition Is False. A Medieval Paradox." *Tulane Studies in Philosophy* no. 2:95-102.
"Paradoxes similar to that of Epimenides the Cretan are present in the highly developed logic of the Late Medieval period. These "sophisms" were known as the "impossibilia" or "insolubilia." an interpretation is given of the analysis of "every proposition is false" which is to be found in the *Sophismata* of John Buridan."
35. ———. 1960. "A Chimera Is a Chimera: A Medieval Tautology." *Journal of the History of Ideas* no. 21:273-278.
"Rejection of the truth of a tautology containing a fiction reveals something of the complexity of the Terminist logic of the late Middle Ages. The analysis of "a chimera is a chimera," to be found in the *Sophismata* of the Fourteenth century logician John Buridan, involves a theory of signs and an interpretation of logical truth."
36. Schönberger, Rolf. 1994. *Relation Als Vergleich. Die Relationstheorie Des Johannes Buridan Im Kontext Seines*

Denkens Und Der Scholastik. Leiden: Brill.

"All central concepts in philosophy contain a relational aspect. The type of reality to be accorded to relations is for this reason one of the core questions of philosophical thought. This is particularly so in the case of nominalism. This book is devoted to John Buridan. While his towering importance in the late Middle Ages and for the development of early modern science has been recognised, his works are still not really well known. How does his theory of relations relate to those of his contemporaries, for example William of Ockham or Gregory of Rimini? The question of the reality of relations is not only of interest as an "experimentum crucis of nominalism, but also because Buridan in his ethics frequently falls back upon older traditions.

The first part of the book contains a discussion of theories of relation from Thomas Aquinas to Gregory of Rimini. The author then offers an exhaustive presentation of the basic lines of Buridan's philosophy and its relation to theology, before turning attention to his theory of relation. Finally he addresses particular forms of relation (identity, analogy, causality, etc.)."

37. ———. 2003. "Quod Omnia Appetunt? Der Begriff Des Guten in Der Nominalistischen Metaphysik Des Johannes Buridan." In *Die Logik Des Transzendentalen. Festschrift Für Jan A. Aerstsen Zum 65. Geburtstag*, edited by Pickavé, Martin, 395-417. Berlin: Gruyter.

38. Sylla, Edith Dudley. 2009. "John Buridan and Critical Realism." *Early Science and Medicine* no. 14:211-247.
"In this paper I examine what John Buridan has to say in his *Quaestiones in Analytica Posteriora* relevant to the subalternate mathematical sciences, particularly astronomy. Much previous work on the scholastic background to the Scientific Revolution relies on texts that were written in the late sixteenth or seventeenth centuries. Here I am interested in texts that might reflect the context of Copernicus, and, in particular those before 1500. John Buridan and Albert of

Saxony were fourteenth century authors influential in Cracow in the fifteenth century, whose conception of science may be characterized as "critical realism." Their view would support the autonomy of astronomy, as well as the idea that sciences may progress over time."

39. Tabarroni, Andrea. 2010. "John Buridan and Marsilius of Inghen on the Meaning of Accidental Terms (*Quaestiones Super Metaphysicam*, Viii, 3-5)." *Documenti e Studi sulla Tradizione Filosofica Medievale* no. 14:389-407.
40. Thijssen, Johannes M.M.H. 1987. "Buridan on the Unity of a Science. Another Chapter in Ockhamism?" In *Ockham and Ockhamists. Acts of the Symposium Organized by the Dutch Society for Medieval Philosophy Medium Aevum on the Occasion of Its 10th Anniversary (Leiden, 10-12 September 1986)*, edited by Bos, Egbert Peter and Krop, Henri A., 93-105. Nijmegen: Ingenium Publishers.
"In an article that appeared in 1974, A.A. Maurer traced the contemporary notion of science as a body of knowledge to the 13th and 14th centuries. One may doubt Maurer's suggestion that the development of the notion of science as a body of knowledge is another chapter in the eclipse of Thomism during the Late Middle Ages. Nevertheless he has certainly pointed out an important change in the notion of the unity of a science which took place in the Later Middle Ages (2).

Within the spectrum of medieval opinions on the unity of a science, Maurer was of the opinion that the extreme positions were represented by Thomas Aquinas and William of Ockham. The purpose of this paper is to determine the position of John Buridan in the debate on the unity of a science. Because Buridan is generally pictured as an 'Ockhamist', a comparison will be made between the essentials of Buridan's and Ockham's theory of science. Apart from their views on the unity of a science, these essentials also include their views on the immediate object of scientific knowledge in general. In this comparison,

priority will be given to Buridan's theory of science, for in contradistinction to Ockham's texts, his texts on this subject are not yet available in a modern edition. Besides, some aspects of Ockham's theory of science which will be touched upon here, have already been studied (3). So, Ockham's philosophy of science will more serve as general background for the presentation of Buridan's opinions (4).

This presentation will be rounded off with some brief remarks on the vexed question as to whether it really makes sense to designate Buridan as an Ockhamist."

(2) A.A. Maurer, 'The Unity of a Science. St. Thomas and the Nominalists' in: *St. Thomas Aquinas 1274-1974*, p. 275 and already in 'Ockham's Conception of the Unity of Science' in: *Mediaeval Studies* 20 (1958), pp. 100-101 and p. 104. A. Zimmermann, *Ontologie oder Metaphysik?* Leiden - Kegan Paul 1965, p. 353 has arrived at the same conclusions with regards to the change that took place in the notion of the unity of a science. This change is also documented in Spade, 'The Unity of Science according to Peter Auriol' in: *Franciscan Studies* 32 (1972).

(3) Especially in Maurer, 'Ockham's Conception of the Unity of Science', and 'The Unity of a Science. St. Thomas and the Nominalists'. See further Goddu, *The Physics of William of Ockham*, Leiden - Köln 1984, pp. 23-27.

(4) Some aspects of Buridan's theory of the unity of a science are discussed in Zimmermann, *Ontologie oder Metaphysik*, pp. 339-348, but he confines himself exclusively to a presentation of some passages taken from Buridan's *Commentary on the Metaphysics*. He does not provide a real analysis of Buridan's position, and besides, he does not draw attention to the differences that exist between Buridan's and Ockham's theories.

41. ———. 2004. "The Buridan School Reassessed. John Buridan and Albert of Saxony." *Vivarium* no. 42:18-42.
42. Thijssen, Johannes M.M.H., and Zupko, Jack, eds. 2001. *The Metaphysics and Natural Philosophy of John Buridan*.

Leiden: Brill.

43. Thom, Paul. 2003. *Medieval Modal Systems. Problems and Concepts*. Aldershot: Ashgate.

See Chapter 9 *Buridan* pp. 169-192.

"With Buridan (c.1300 - c.1358), modal syllogistic reaches its highest point in the Middle Ages, both in terms of completeness and elegance. Lagerlund observes that it was Buridan who gave modal syllogistic the form it would retain for the rest of the Middle Ages, and that his achievement in this field 'surpassed most things done in the history of logic since Aristotle completed the *Prior Analytics*'.⁽¹⁾In this chapter we will look at his modal logic as expounded in Buridan's *Tractatus de Consequentis* and his *Summulae de Dialectica*." p. 169

(1) H. Lagerlund, *Modal Syllogistics in the Middle Ages*, Leiden, Brill, 2000, p. 30.

44. Uckelman, Sara L., and Johnston, Spencer. 2010. "John Buridan's *Sophismata* and Interval Temporal Semantics." *Logical Analysis and History of Philosophy* no. 13:133-147. "In this paper we look at the suitability of modern interval-based temporal logic for modeling John Buridan's treatment of tensed sentences in his *Sophismata*. Building on the paper [Øhrstrøm, P., Buridan on interval semantics for temporal logic. *Logique et Analyse* 106: 211-215, 1984], we develop Buridan's analysis of temporal logic, paying particular attention to his notions of negation and the absolute/relative nature of the future and the past. We introduce a number of standard modern propositional interval temporal logics (ITLs) to illustrate where Buridan's interval-based temporal analysis differs from the standard modern approaches. We give formal proofs of some claims in [Øhrstrøm 1984], and sketch how the standard modern systems could be defined in terms of Buridan's proposals, showing that his logic can be taken as more basic."
45. Willing, Anthony. 1991. "Buridan's Divided Modal Syllogistic." *Notre Dame Journal of Formal Logic* no.

32:276-289.

46. ———. 1998. "Unheard of Objects of Knowledge: A Controversial Principle of Buridan's Epistemic Logic." *Franciscan Studies* no. 56:203-224.
47. Yrjönsuuri, Mikko. 2008. "Treatments of the Paradoxes of Self-Reference." In *Mediaeval and Renaissance Logic*, edited by Gabbay, Dov and Woods, John, 579-606. Amsterdam: Elsevier.
Handbook of the history of logic: Vol. 2.
On Buridan see pp. 600-606.
"John Buridan's massive textbook of logic *Summulae de Dialectica* ends with a collection of sophisms, seemingly as a section containing exercises. The last set in this collection deals with self-referential propositions and thus also with insolubles.
This is not the only location where Buridan discusses paradoxes of self-reference, but it is perhaps the most accessible one. The textbook as a whole was widely used for several centuries, but no other section in it is directly dedicated to self-reference." p. 600 (note omitted)
"If compared to Bradwardine's work, Buridan's discussion of the insolubles does not appear very ingenious and original. He wavers and leaves room for doubt, allowing the reader to get the feeling that his solution is sketchy. The work is, however, clearly on a very advanced logical level and the problems obviously result from difficulties in the subject matter. Given the extremely wide circulation of Buridan's *Summulae*, it is very understandable that his solution achieved a very high reputation and a wide influence in the coming centuries." pp. 605-606
48. Zupko, Jack. 1990. "John Buridan on Abstraction and Universal Cognition." In *Knowledge and the Sciences in Medieval Philosophy. Proceedings of the Eight International Congress of Medieval Philosophy (Siepm), Helsinki, 24-29 August 1987*, edited by Asztalos, Monika, Murdoch, John Emery and Niiniluoto, Ilkka, 393-403. Helsinki: Acta Philosophica Fennica.

Vol. II.

"For the nominalist, the claim that the mind can cognize universally, or that its thoughts can range over non-individual objects such as 'human being', or 'whiteness', requires further explanation. What is it that happens, psychologically speaking, when I cognize universally? Given the standard assumption of nominalist ontologies that the world contains no non-individual entities, what status do the objects of universal thought have, and how do they come to be entertained?

There are two distinct questions here: one semantic, asking how a mental act can mean something universal, and the other psychological, asking about the genesis of universal thoughts. Aristotle's answer to the second can be found in *De memoria*, where he says, "... someone who is thinking, even if he is not thinking of something with a size, places something with a size before his eyes, and thinks of it not as having a size;" (1) thus, the intellect thinks of what is common or universal, such as triangularity, by an effort of abstraction from what is determinate or particular - triangles having physical dimensions. (2) His answer to the first can be reconstructed from his famous remark in *De anima* that "in the case of objects which involve no matter, what thinks and what is thought are identical." (3)³ The identity in question is formal - thinking is, like perceiving, defined as the sort of change in which form is received without matter - and so what makes my thought of triangularity a thought of that universal is my intellect becoming triangularity formally. But does this mean that there is something universal in my mind whenever I think universally?" (p. 393)

"In conclusion, I think Buridan is for most part successful in reconciling his nominalistic world-view with the problem of how we think universally. The task for the nominalist is to explain our evident ability to cognize universally without postulating universals, either as products of abstraction or

thought-objects. Buridan endeavours to steer clear of both these obstacles by on the one hand stipulating that the species by which we entertain a universal is itself singular, and on the other by treating the universality of thought as a function of the way in which concepts refer not to abstract concepts or entities, but to individuals in the world. And although his account of concept-generation explains intellectual abstraction in such a way that its product still looks like a good candidate for a universal, we can tell a more suitable story without much difficulty. At least in this respect, Buridan's psychology does not compromise his ontology." (p. 403).

(1) Arist. *De mem.* 1.450a4-6; tr. Sorabji, *Aristotle on Memory* (Providence: Brown U.P., 1972), 48-49.

(2) Arist., *De an.* I.1.403b15; cf. III.4.429b18; III.7,431b12, III.8.432a5.

(3) Arist., *De an.* III.4.430a3-5.

49. ———. 1993. "Buridan and Skepticism." *Journal of the History of Philosophy* no. 31:191-221.

50. ———. 2003. *John Buridan. Portrait of a Fourteenth-Century Arts Master*. Notre Dame: University of Notre Dame Press.

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INDEX OF THE SECTION: *THE DEVELOPMENT OF MODERN LOGIC*

History of Logic FROM 1400 TO 1850

[History of Renaissance and Modern Logic](#)

[Selected Bibliography on the History of Renaissance and Modern Logic](#)

Leibniz on Logic and Semiotics: the Project of a Universal Language

Bibliography of Leibniz on Logic and Semiotics:

[Leibniz A - K](#)

[Leibniz L - Z](#)



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History of Renaissance and Modern Logic from 1400 to 1850

INTRODUCTION: LOGIC IN CONTINENTAL EUROPE

"At the end of the fourteenth century there were roughly three categories of work available to those studying logic. The first category is that of commentaries on Aristotle's 'Organon'. The most comprehensive of these focussed either on the books of the *Logica Vetus*, which included Porphyry's *Isagoge* along with the *Categories* and *De Interpretatione*; or on the books of the *Logica Nova*, the remaining works of the 'Organon' which had become known to the West only during the twelfth century. In addition there were, of course, numerous commentaries on individual books of the 'Organon'. The second category is that of works on non-Aristotelian topics. These include the so-called *Parva logicalia*, or treatises on supposition, relative terms, ampliation, appellation, restriction and distribution. To these could be added tracts on *exponibiles* and on syncategorematic terms. Peter of Spain is now the best-known author of *parva logicalia*, but such authors as Thomas Maulvelt and Marsilius of Inghen were almost as influential in the late fourteenth and fifteenth centuries. Another group of works belonging to the second category consists of the so-called 'tracts of the moderns', namely treatises on consequences, obligations and insolubles. A third group includes

treatises on sophisms, on the composite and divided senses, and on proofs of terms, especially the well-known *Speculum puerorum* by Richard Billingham. The third and last category is that of comprehensive textbooks. The most famous example is the *Summulae logicales* of Peter of Spain, which gives a complete outline of Aristotelian logic, including categories, syllogisms, topics and fallacies; but others must be mentioned. John Buridan's *Summulae*, which was printed several times with a commentary by John Dorp, was a reworking of Peter of Spain, but integrated the topic of supposition by placing it in Book IV. It also added a new tract on definition, division and demonstration. Paul of Venice's *Logica parva*, which was to be very popular in Italy, presented the material of the *summulae* (except for topics and fallacies) in tract one, and then added a series of tracts dealing with the *parva logicalia* and with consequences, obligations and insolubles. All three categories of works had a role in the curriculum of the late medieval university, though the authors and tracts chosen varied from place to place. It is a mistake to think that Peter of Spain provided the only supplement to Aristotle, for in some places he was not read at all, and in other places only a part of his work was read. Moreover, when studied he was studied through the medium of later commentators.

The medieval traditions of logical writing survived well into the sixteenth century particularly at Paris and at the Spanish universities, though with considerable internal changes. Treatises on sophisms and on proofs of terms ceased to be written; whereas there was a sudden flurry of activity concerned with the various divisions of terms and with the opposition of propositions, i.e. the logical relations between different kinds of categorical proposition. These internal changes were not, however, sufficient to keep the tradition alive, and after about 1530 not only did new writing on the specifically medieval contributions to logic cease, but the publication of medieval logicians virtually ceased. The main exceptions were the logical commentaries by (or attributed to) such authors as Thomas Aquinas and John Duns Scotus,

which found a place in their *Opera Omnia*, and which benefited from a revived interest in the great medieval metaphysicians. The main changes in the teaching and writing of logic during the sixteenth century were due to the impact of humanism. First, commentaries on Aristotle came to display a totally new style of writing. One reason for this was the influence of new translations of Aristotle, and new attitudes to the Greek text. Another reason was the publication of the Greek commentators on Aristotle's logic, Alexander, Themistius, Ammonius, Philoponus and Simplicius. A third reason was the new emphasis on Averroes, which expressed itself in the great Aristotle-Averroes edition of 1550-1552. (30) The effects of these new factors can be seen in the commentaries on individual works of the 'Organon' by such Italians as Agostino Nifo (1473-1546) and Jacopo Zabarella (1533-1589), the latter of whom offered a particularly influential account of scientific method. They can also be seen in the 'Organon' edition of Giulio Pace (1550-1635), which was first published in 1584 and contained the Greek text side-by-side with a new translation which was designed not only to read well but also to capture the philosophical significance of Aristotle's words. The culmination of the new style of writing on Aristotle is found in the *Conimbricenses*, the great series of commentaries produced by the Jesuits of Coimbra, especially (for our purposes) the *Commentarii in universam dialecticam Aristotelis* which appeared in 1606. This has aptly been described as presenting a fusion of two late sixteenth century approaches to Aristotle, the philosophical one of Zabarella and the philological one of Pace. (31) In addition it contains a wealth of material about different interpretations of Aristotle found in the Greek and Arab commentators, the medieval writers such as Aquinas, and more recent Thomists such as Cardinal Cajetan and Capreolus. One finds the occasional reference to Ockham or Marsilius of Inghen, but the perception of who constituted the important logical writers of the middle ages had clearly changed radically since the beginning of the sixteenth century.

Humanism can also be held at least partially responsible for the virtual disappearance of works on the specifically medieval contributions to logic, including the *parva logicalia*, and for the replacement of medieval textbooks by textbooks in a completely new style. The disgust that humanists expressed at the barbarous language and twisted Latin of the scholastics was in itself a minor factor. More important were the philosophical ideals that lay behind the work of Lorenzo Valla (1407-1457) and his follower Rudolph Agricola (1444-1485). As Lisa Jardine has argued, both Valla and, to a lesser extent, Agricola were concerned to offer a logic which was linked with Cicero's Academic skepticism rather than with Aristotelian certainties.⁽³²⁾ They wished to present argumentative strategies for rendering plausible each of the two sides of an undecidable question, or for supporting one of them as, perhaps only marginally, more plausible than the other. They were thus drawn to consider a variety of non-deductive strategies in lieu of the formal techniques which had dominated a large part of medieval logic, especially in the treatises on consequences, and in lieu of Aristotle's own syllogistic. Their attention was focussed on the Topics which, especially as presented by Cicero and Quintilian, seemed to offer a method of classifying these strategies by their key terms rather than by their form. At the same time, much of Agricola's concern was with the art of discourse as such, that is, with the problem of presenting and organizing complete arguments and narrations, whether written or spoken. Logic, or as he preferred to call it, dialectic, was to be applied to all types of discourse, and hence to all areas of teaching. As a result of this interest both in persuasive techniques and in discourse as such, logic came to embrace much of what had traditionally been regarded as belonging to rhetoric; and rhetoric came to be seen as concerned not with the invention of topics but with the ornamentation of discourse.

These doctrines as presented in Agricola's *De inventione dialectica libri tres*, first published in 1515, turned out to be seductive. One of those who was considerably influenced by Agricola was Philip Melanchthon (1497-1560) whose logic text,

first published in 1520 as *Compendiaria dialectices ratio*, but replaced by two later versions, became very popular. In it we see how the insights of Valla and Agricola were transmuted to serve the textbook tradition. Melanchthon enjoyed the Agricolan emphasis on clarity of style and the use of literary allusions; he accepted the importance of the Topics and that part of logic called invention; and some remarks on order in the first version of his text grew into a full section on logical method as a way of ordering discourse.(33) At the same time, Melanchthon was a convinced Aristotelian. The formal techniques he used were those of syllogistic, and his work included a discussion of the other standard Aristotelian subjects including the categories and the square of opposition for propositions. Indeed, the last version of his logic, the *Erotemata dialectices* of 1547, seems considerably less Agricolan in tune than the earlier versions, though it retains references to Cicero and Quintilian. (34)

Another writer who was influenced by Agricola is Petrus Ramus or Pierre de la Ramée (1515-1572), the most notorious logician of the sixteenth century. He is known both for his attacks on Aristotle and for the simplified logic presented in his *Dialectique* of 1555 (published in Latin in 1556 as *Dialecticae libri duo*), a work which enjoyed a remarkable publishing history. Ong lists 262 editions, 151 of which appeared in Germany. (35) The *Dialectique* had two parts. The first, on invention, covered the Topics; and the second, on judgment, presented a deliberately simplified version of the syllogism followed by an account of method as a means of ordering in the arts and sciences. No reference was made to such standard material as the categories, the square of opposition, conversion, demonstration and fallacies. On the other hand, the work is rich with quotations from the poetry and prose of classical authors, which must have strengthened the impression among students that logic was both easy and fun. It is small wonder that (in Jardine's words), Ramus 'cornered the textbook market' despite the absence of genuine logical innovation.(36)

Whatever its attractions, the deficiencies of Ramus's book as a teaching tool became rapidly apparent to those seriously interested in logic at the university level. As a result, a new school of textbook writers known as the Philippo-Ramists appeared in Germany in the 1590s. These authors had the aim of combining what was best in Ramus with what was best in the more Aristotelian work of Philip Melanchthon. Thus they tended to restore all those parts of Aristotelian logic which Ramus had deliberately omitted. An important writer who can be seen as allied to the Philippo-Ramist school, though he is more frequently described as a Systematic, is Bartholomew Keckermann (c. 1572-1609). Keckermann was primarily concerned to defend Aristotle and such Aristotelians as Zabarella, but he paid careful attention to Ramist doctrines. He was particularly noteworthy for his theoretical discussion of the notion of a system, and the criteria for determining whether a body of doctrine, such as logic or ethics, could properly be called a system.(37) J. H. Alsted (1588-1638) was also an important Systematic, who displayed a good deal of sympathy toward Ramism.(38)

Another important group of textbooks from the latter half of the sixteenth century owed a smaller debt to the humanist logic of Rudolph Agricola and Petrus Ramus, and is noteworthy for an attempt to integrate certain parts of the specifically medieval contribution to logic into a generally Aristotelian framework. I shall mention three such texts. The earliest, and most medieval in tone, is the *Compendium logicae* by Chrysostomo Javelli (d. c. 1538) which was first published posthumously in 1551. Javelli retained discussion of such topics as the proofs of terms, and he also retained a number of sophisms and puzzle-cases from the medieval literature. He can therefore be described as a transitional author, representing an intermediate stage between the old medieval textbooks and the Counter-Reformation texts of the Jesuits Francisco de Toledo (1533-1596) and Pedro de Fonseca (1528-1599). Toledo's *Introductio in dialecticam* was first published in 1561 in Rome; and Fonseca's *Institutionum dialecticarum* was first published in 1564 in Lisbon. The Jesuit

Ratio Studiorum of 1586 had recommended the *Summula* of Fonseca for its breadth, clarity, relevance to Aristotle and lack of sophistry; (39) and in the *Ratio Studiorum* of 1599, Toledo was recommended in addition to Fonseca.(40) The two books share important features. Their main objective is to present standard Aristotelian logic. This material is supplemented with an account of certain medieval doctrines, specifically supposition theory, exponible propositions, and consequences, but the presentation of these doctrines is new. There is a complete absence of the sophisms which had formed a prominent feature of late medieval texts. There is also little discussion of problems caused for such operations as conversion by the presence of different linguistic structures. The highly technical language which struck the humanist as barbaric has gone and, in Fonseca at least, there is a conscious attempt to use classical terminology. All three texts were widely disseminated in Europe and, interestingly enough, all seem to have disappeared at much the same time. The last editions that I know of are as follows: Toledo: Milan, 1621; Fonseca: Lyon, 1625; Javelli: Cologne, 1629." (pp. XVI-XXII)

Notes

(30) See C. B. Schmitt, "Renaissance Averroism studied through the Venetian Editions of Aristotle-Averroes", *Atti dei Convegni Lincei* 40 (1979), pp. 131-140.

(31) C. B. Schmitt, "Towards a Reassessment of Renaissance Aristotelianism", *History of Science* 11 (1973), p. 170.

(32) Lisa Jardine, "Lorenzo Valla and the Intellectual Origins of Humanist Dialectic", *Journal of the History of Philosophy* 15 (1977), 143-164. For further discussion and references see the chapter by Jardine in *The Cambridge History of Renaissance Philosophy* (forthcoming) [Cambridge, Cambridge University Press, 1988, *Humanistic logic* pp. 173-198]

(33) See Philip Melanchthon, *Compendiaria Dialectices Ratio* in *Opera* (Corpus Reformationum XX, Brunsvigae 1854: reprinted New York and Frankfurt am Main 1963) columns 724-726; and

Erotemata Dialectices in Opera (Corpus Reformationum XIII, Halis Saxonium, 1846: reprinted New York and Frankfurt am Main 1963) columns 573-578.

(34) Wilhelm Risse, *Die Logik der Neuzeit*. 1 Band. 1500-1640 (Stuttgart- Bad Cannstatt: Friedrich Frommann, 1964), p. 89, wrote of the *Erotemata Dialectices*: "Melanchthon proklamiert hier eine reine, unverdebt aristotelische Logik.... Cicero and Agricola sind nicht mehr als Autoritäten genannt." Risse's judgment is perhaps too strong.

(35) W. J. Ong, *Ramus and Talon Inventory* (Cambridge, Mass., Harvard University Press, 1958). For a full discussion of Ramus, see W.J. Ong, *Ramus, Method and the Decay of Dialogue* (Cambridge, Mass., Harvard University Press, 1958).

(36) Jardine, *The Cambridge History of Renaissance Philosophy*.

(37) For some discussion of Keckermann, see Risse, *Die Logik der Neuzeit*, pp. 440-450; and N.W. Gilbert, *Renaissance Concepts of Method* (New York, Columbia University Press, 1960), pp. 214-220.

(38) For discussion, see Risse, *Die Logik der Neuzeit*, pp. 477-485.

(39) Karl Kehrbach, *Monumenta Germaniae Paedagogica* Band V. (Berlin, 1887) p. 131.

(40) Kehrbach, *ibid.*, p. 332.

From: Earline Jennifer Ashworth, "Editor's Introduction" to: Robert Sanderson, *Logicae Artis Compendium* [1618], Bologna: Clueb 1985.

THE TEACHING OF LOGIC IN THE UNIVERSITY CURRICULUM

"The period 1500 - 1650 is a distinctive one in the history of logic. It begins when the great works of fourteenth-century logic,

embedded in university curricula all over Europe (1), are replaced by new and different texts; it ends when the 'new philosophies', first of Descartes and later of Locke, infiltrate the study of logic and lead logicians to embrace an '[e]xplicit consideration of the cognitive faculties and their operations' (2) at the expense of more formal concerns. Eyed within the 150 year period thus demarcated, there is an enormous variety of change and development to be taken into consideration. At the expense of over-generalization, four different streams can be isolated. First, there is the continuity of the medieval tradition, particularly exemplified by the publications of those working at Paris in the first three decades of the sixteenth century (3). Second, there is the new rhetorical humanism of such men as Rudolph Agricola, whose influential *De inventione dialectica libri tres* was first published posthumously in 1515 (4). Third, there is the Aristotelian humanism of those who, especially in Italy, were involved with the publication of the Greek Aristotle (5), with the publication and translation of the Greek commentators on Aristotle (6), and with the production of new commentaries on Aristotle (7). Finally, there is the investigation of demonstration and scientific method, culminating in the logical work of Jacopo Zabarella, the well-known Paduan Aristotelian (8).

So far as textbook production was concerned, all these four streams were to intermingle. Writings purely in the medieval tradition ceased abruptly after 1530, at least outside Spain; but some parts of the medieval contribution to logic continued to be included in at least some textbooks. The new interests of rhetorical humanism, the emphasis on the topics, on strategies for plausible argumentation, on methods of organizing discourse, on the use of literary examples, had a great impact on the classroom. However, teachers soon found that the works of Agricola himself or of the later Pierre de la Ramée contained insufficient formal material, and their writings were soon supplemented by Aristotelian syllogistic. Thus in Germany from 1520 on, Philip Melanchthon produced a series of textbooks combining humanist insights with Aristotelian logics; and in the

1590s, Germany gave rise to Philippo-Ramism, a school of textbook writers whose aim was to combine what was best in Pierre de la Ramée with what was best in the works of Philip Melanchthon (10). The study of the Greek Aristotle and the Greek commentators had a strong impact on the textbook writers of the second half of the sixteenth century; and, after Zabarella, sections on scientific method were also to find their way into logic textbooks." pp. 75-76

I shall begin my investigation by considering the types of logic text that would have been used at a fifteenth-century university. There are three groups. First, there is the 'Organon' of Aristotle, together with the commentaries so exhaustively enumerated by Charles Lohr (21). I shall not be concerned with this type of literature, except to note that it underwent considerable changes during the sixteenth century owing to the influence of humanism and to the recovery of the Greek commentators. Second, there is the textbook proper, such as the *Summulae logicales* of Peter of Spain, itself typically presented with a commentary by some later author. Third, there is the group of independent texts, each devoted to some aspect of the specifically medieval contribution to logic. If one is to understand later developments, this group must be investigated in some detail, and I shall start by analyzing its subdivisions (22).

The core of the first subdivision is provided by the so-called parva logicalia, or treatises dealing with the properties of terms, including their reference in various contexts. Here we find tracts on supposition, on relative terms, on ampliation, appellation, restriction and distribution. These core treatises were supplemented in three ways. Logicians wrote about syncategorematic terms, those logical particles such as 'all', 'some', and 'not', which determine the logical structure of a proposition; they wrote about exponible terms, those logical particles such as 'except' and 'only' whose presence requires the analysis of an apparently simple categorical proposition into

several conjoined propositions; and they wrote about the proof of terms, or the way in which the truth-conditions of propositions are affected by the presence of exponible terms, of modal terms such as 'necessary' and 'possible' or of epistemic terms such as 'knows' and 'believes'. Obviously there was a good deal of overlap between writings on syncategorematic terms, on exponibles and on the proof of terms, since one and the same logical particle could be treated in all three types of treatise.

The second subdivision contains the 'three tracts of the moderns', the treatises on consequences, obligations and insolubles.

Treatises on consequences covered all types of argumentation, beginning with a good deal of what is now called propositional logic, and they often included the syllogism as a special example of one kind of argumentation. They were also noteworthy for lengthy discussions of the notion of consequence itself, and of the difference between formally valid and materially valid inferences. Treatises on obligations dealt with the rules to be followed in a certain kind of disputation which was specifically designed to test the logical skills of undergraduates, and which therefore deliberately confined itself to exploring the logical consequences of accepting an often bizarre falsehood. Treatises on insolubles dealt with semantic paradoxes, such as the standard liar: 'What I am now saying to you is false', and they explored in some depth the semantic presuppositions of language, including the truth-conditions for contradictory and synonymous propositions.

The third subdivision is formed by the treatises on sophisms in which problematic or puzzling statements were analyzed and tested against various logical rules. Since these rules were drawn from the areas of investigation already mentioned, including supposition theory and its ramifications, there was considerable overlap between the contents of these treatises and those belonging to the first and second subdivisions. Indeed, the latter treatises, as well as the commentaries on Aristotle and on Peter of Spain, themselves made heavy use of sophisms in order to test the rules they enunciated against possible counter-examples.

Thus we get a two-way movement. A treatise on sophisms begins

with the sophisms and proceeds to the rules; a treatise on, for instance, consequences begins with the rules and proceeds to the sophisms. Paul of Venice's *Logica magna* (written 1397 - 98) is a particularly noteworthy example of the use of sophisms as a testing device (23)". (pp. 78-79)

Notes

- (1) For fuller details and references, see E. J. Ashworth, 'Traditional Logic' in *The Cambridge History of Renaissance Philosophy*, edited by C. B. Schmitt (Cambridge: Cambridge University Press, 1988), pp. 150 - 151.
- (2) J. G. Buickerood, 'The Natural History of the Understanding: Locke and the Rise of Facultative Logic in the Eighteenth Century', *History and Philosophy of Logic* 6 (1985), p. 161.
- (3) Ashworth, 'Traditional Logic', pp. 151 - 152.
- (4) For discussion, see L. Jardine, 'Humanist Logic' in *The Cambridge History of Renaissance Philosophy*.
- (5) The first printed edition of the Greek text of Aristotle was produced in Venice by Aldus Manutius from 1495 to 1498.
- (6) See C. B. Schmitt, 'Alberto Pio and the Aristotelian Studies of his Time', Study VI in C. B. Schmitt, *The Aristotelian Tradition and Renaissance Universities* (London: Variorum Reprints, 1984), pp. 55 -
- (7) For a complete listing of Renaissance Aristotle commentaries, see C. H. Lohr, 'Renaissance Latin Aristotle Commentaries: Authors A-B', *Studies in the Renaissance* 21 (1974), pp. 228 - 289; 'Authors C', *Renaissance Quarterly*, 28 (1975), pp. 689 - 741; 'Authors D-F', *ibid.*, 29 (1976), pp. 714 - 745; 'Authors G-K', *ibid.*, 30 (1977), pp. 681 - 741; 'Authors L-M', *ibid.*, 31 (1978), pp. 532 - 603; 'Authors N-Ph', *ibid.*, 32 (1979), pp. 529 - 580; 'Authors Pi-Sm', *ibid.*, 33 (1980), pp. 623 - 734; 'Authors So-Z', *ibid.*, 35 (1982), pp. 164 - 256.
- (8) See N. W. Gilbert, *Renaissance Concepts of Method* (New York: Columbia University Press, 1960).

(9) See E. J. Ashworth, *Language and Logic in the Post-Medieval Period* (Dordrecht, Boston: D. Reidel, 1974), pp. 13 - 14. His logic text was first published in 1520 as *Compendiaria dialectices ratio*, though in the place cited I mention only the first of the later versions, the *Dialectices libri IX* of 1527.

(10) Ashworth, *Language and Logic*, pp. 16 – 17.

(21) For a listing of medieval Aristotle commentaries, see C. H. Lohr, 'Medieval Latin Aristotle Commentaries: Authors A-F', *Traditio* 23 (1967), pp. 313 - 413; 'Authors G-I', *ibid.*, 24 (1968), pp. 149 - 245; 'Authors Jacobus-Johannes Juff', *ibid.*, 26 (1970), pp. 135 - 216; 'Authors Johannes de Kanthi-Myngodus' *ibid.*, 27 (1971), pp. 251 - 351; 'Authors Narcissus-Richardus', *ibid.*, 28 (1972), pp. 281 - 396; 'Authors Robertus-Wilgelmus', *ibid.*, 29 (1973), pp. 93 - 197; 'Supplementary Authors', *ibid.*, 30 (1974), pp. 119 - 144.

(22) For more details and references, see Ashworth, 'Traditional Logic', pp. 146 - 149.

(23) See Paul of Venice, *Logica magna* (Venice, 1499). An edition and translation of this work is being published under the auspices of the British Academy. The first volume to appear was: Paul of Venice, *Logica Magna. Part II Fascicule 6*, edited and translated by F. del Punta and M. M. Adams (published for the British Academy by the Oxford University Press, 1978). For the date of the work, see F. Bottin, 'Logica e filosofia naturale nelle opere di Paolo Veneto' in *Scienza e filosofia all'Universita' di Padova nel Quattrocento*, edited by A. Poppi (Contributi alla Storia dell'Universita. di Padova 15. Trieste: Lint, 1983), p. 88, pp. 91 - 92.

From: E. J. Ashworth, "Changes in Logic Textbooks from 1500 to 1650: The New Aristotelianism", in: Eckhard Kessler, Charles Lohr, Walter Sparn (eds.), *Aristotelismus und Renaissance. In Memoriam Charles B. Schmitt*, Wiesbaden: Otto Harrassowitz 1988, pp. 75-87.

Logicians of the Fifteenth Century

George of Trebizond (1395 - 1472/3)

Lorenzo Valla (1406 - 1457)

Rodolphus Agricola (1443 - 1485)

Logic in the Modern Age. First Part: 1500 - 1640

Jean Luis Vivés (1493 - 1540)

Domingo de Soto (1494 - 1560)

Philipp Melanchthon (1497 – 1560)

Petrus Ramus (1515 - 1572)

Pedro da Fonseca (1528 - 1599)

Franciscus Toletus (1532 - 1596)

Giacomo (Jacopo) Zabarella (1533 - 1589)

Bartholomäus Keckermann (1572 - 1609)

Joachim Jungius (1587 - 1657)

Robert Sanderson (1587 - 1663)

Thomas Hobbes (1588 - 1679)

Franco Burgersdijk (1590 - 1635)

The Conimbricenses (*In universam dialectica Aristotelis*, 1606)

Logic in the Modern Age. Second Part: 1640 - 1780

Athanasius Kircher (1601/2 - 1680)

Sebastián Izquierdo (1601 - 1681)

Juan Caramuel y Lobkowitz (1606 - 1682)

Georges Dalgarno (1616 - 1687)

Antoine Arnauld (1612 - 1694)

John Wallis (1616 - 1703)

Johannes Clauberg (1622 - 1665)

Arnold Geulincx (1624 - 1669)

John Locke (1632 – 1704)

Nicolas Malebranche (1638 – 1715)

Gottfried Wilhelm Leibniz (1646 - 1716)

Ehrenfried Walther von Tschirnhaus (1651 – 1708)

Christian Thomasius (1655 - 1728)

Johann Franz Budde (1667 - 1729)

Giovanni Girolamo Saccheri (1667 - 1733)

Andreas Rüdiger (1673 - 1731)

Johann Peter Reusch (1691 - 1758)

Johann Georg Walch (1693 – 1775)

Joahann Andreas Segner (1704 - 1777)

Leonhard Euler (1707 - 1783)

Étienne Bonnot de Condillac (1714 - 1780)

Joachim Georg Darjes (1714 - 1791)

Gottfried Ploucquet (1716 - 1790)

Georg Friedrich Meier (1718 – 1777)

Immanuel Kant (1724 - 1804)

Johann Heinrich Lambert (1728 - 1777)

Logicians of the First Half of the Nineteenth Century

Jeremy Bentham (1748 - 1832)

Georg Wilhelm Friedrich Hegel (1770 - 1831)

Joseph Diaz Gergonne (1771 - 1859)

Samuel Taylor Coleridge (1772 - 1834)

[Bernard Bolzano](#) (1781 - 1848)

Richard Whateley (1787 - 1863)

William Hamilton (1788 - 1856)

William Whewell (1794 - 1866)

Friedrich Adolf Trendelenburg (1802 - 1872)

Augustus De Morgan (1806 - 1871)

John Stuart Mill (1806 - 1873)

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"The aim of this paper is to outline tentatively some aspects of the techniques of disputation in their history, on the basis of some texts. Modern logic ("mathematical" logic) was

conceived *more geometrico* by Frege, who intended to improve upon Euclid essentially by adding an explicit list of rules of inference (*Grundgesetze* I, p. VI). Thus, the notion of *dialectica* in the sense of "speech between two," so important in the past, could hardly be found relevant by modern historians of logic, who were guided by the new model. These, in fact, have so far neglected to investigate this portion of the logical heritage.(1) Only recently there has been an increasing interest in the *Topica*, not extended, however, to the medieval and post-medieval developments. Good old Prantl seems to be still the best source in this respect. Historical works of a more general nature are of very little help even when they abundantly refer to disputation, because the formal aspects are usually overlooked. For example, a direct examination of the sources mentioned by Thurot would be very rewarding, but what Thurot himself says on disputation is simply useless from a technical point of view.(2)

The dialogical logic developed in the last ten years by Paul Lorenzen and his school provides the needed "modern" motivation to go back to the *ars disputandi*.(3) Sources for antiquity and for medieval *obligationes* (a form of disputation) are known. Before 1800 disputation was considered by a very large number of books on logic; after 1800 at least by most neoscholastic treatises. Fortunately, in recent years bibliographical research in the history of logic has increased so much (4) that now we also know of a small, yet interesting list of postmedieval (second-scholastic) works especially devoted to the theory of disputation."

(1) There are hardly any references in the most distinguished works on the history of logic. In E. Moody's *The Logic of William of Ockham* (London: Sheed & Ward, 1935), the topic of obligations is considered "not very relevant to logic" 294.

(2) Charles Thurot, *De l'Organisation de l'enseignement dans l'Université de Paris au Moyen Age* (Paris: E.

Magdeleine, 1850); pp. 87-90 for the *disputes*.

(3) Paul Lorenzen, *Normative Logic and Ethics*

(Mannheim: Bibliographisches Institut, 1967); Kuno

Lorenz. "Dialogspiele als Semantische Grundlage von Logikkalkülen," *Archiv für mathematische Logik und Grundlagenforschung* (1966).

(4) Above all W. Risse, *Bibliographia logica* (Hildesheim: Olms, 1965). Additions in W. Redmond, *Bibliography of Philosophy in the Spanish-Portuguese Colonies* (The Hague: Nijhoff, forthcoming) [published in 1972 with the title: *Bibliography of the philosophy in the Iberian colonies of America*]; L. Hickman, *Late Scholastic Logic: Another Look*; to appear in *Journal of the History of Philosophy* [1971, 9 pp. 226-234].

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"This essay aims, first, at describing the conflict between the theory of predication (classical, Aristotelian) prevailing in philosophy until the end of the 19th century, and the theory arisen with the new logic (modern, Fregean). Three features characterize the pre-Fregean period: 1) conflation of predication and subordination (extensionally: membership and class-inclusion), 2) conflation of identity and predication, 3) the view of quantificational phrases (e.g. "some men") as denoting phrases. A possible fourth feature is suggested by the consideration of the so-called Locke's "general triangle". Most of the paper is devoted to the first feature, also called the "principal" one, stated by Aristotle. Frege seems to be the first, in 1884, to reject the first feature; he rejected, not less vehemently, the second and the third features. Fregean predication theory became standard, and just taken for granted in the subsequent

developments of logic as well as in the mainstream of philosophy. The second aim of this paper is to evaluate - relative to the notion of predication submitted in section I - the conflict between the two traditions, and to determine if both are somehow right, or one is right and the other wrong. The main result is that the Fregean revolution in predication theory is, at least with regard to the first and second features of the classical view, a clarification that would probably be welcomed by the classical authors themselves (*pace* Hintikka's "logic of being")."

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This book is the first attempt to provide a general introduction to the type of logical inquiry pursued in Europe after 1429 by means of a systematic presentation of the doctrines which were actually written about and taught. It radically alters traditional views of the period by demonstrating that not only were medieval doctrines still of overriding importance at the beginning of the sixteenth century, but that they continued to be discussed in many European universities at least until the mid-seventeenth century.

TABLE OF CONTENTS; PREFACE IX; NOTE ABOUT ABBREVIATIONS XIII; ACKNOWLEDGEMENTS XV; CHAPTER I - HISTORICAL INTRODUCTION 1; 1. The Publication of Medieval Works 2; 2. Scholasticism in Italy and Germany 4; 3. Scholasticism in France and Spain 5; 4. Humanism 8; 5. Rudolph Agricola and His Influence 10; 6. Petrus Ramus and His Influence 15; 7. Seventeenth

Century Logic: Eclecticism 17; 8. Humanism and Late Scholasticism in Spain 19; 9. Other Schools of Logic 20; 10. A Note on Terminology 22; CHAPTER II / MEANING AND REFERENCE 26; I. The Nature of Logic 26; 1. The Contents of Logical Text-books 26; 2. The Definition of Logic 29; 3. The Object of Logic 32; II. Problems of Language 37; 1. Terms: Their Definition and Their Main Divisions 38; 2. The Relationship between Mental, Spoken and Written Terms 42; 3. Other Divisions of Terms 45; 4. Sense and Reference 47; 5. Propositions and their Parts 49; 6. Sentence-Types and Sentence-Tokens 52; 7. Complex Signifiabiles and Truth 55; 8. Other Approaches to Truth 62; 9. Possibility and Necessity 66; III. SUPPOSITION THEORY 77; 1. Supposition, Acceptance and Verification 78; 2. Proper, Improper, Relative and Absolute Supposition 82; 3. Material Supposition 83; 4. Simple Supposition 84; 5. Natural Personal Supposition 88; 6. Ampliation 89; 7. Appellation 92; IV. SEMANTIC PARADOXES 101; 1. Problems Arising from Self-Reference 101; 2. Solution One: Self-Reference Is Illegitimate 104; 3. Solution Two: All Propositions Imply Their Own Truth 106; 4. Solution Three: Insolubles Assert Their Own Falsity 108; 5. Solution Four: Two Kinds of Meaning 110; 6. Solution Five: Two Truth-Conditions 112; 7. Later Writing on Insolubles 114; CHAPTER III / FORMAL LOGIC. PART ONE: UNANALYZED PROPOSITIONS 118; I. THE THEORY OF CONSEQUENCE 120; 1. The Definition of Consequence 120; 2. The Definition of Valid Consequence 121; 3. Formal and Material Consequence 128; 4. 'Ut Nunc' Consequence 130; 5. The Paradoxes of Strict Implication 133; 6. Rules of Valid Consequence 136; II. PROPOSITIONAL CONNECTIVES 147; 1. Compound Propositions in General 147; 2. Conditional Propositions 149; 3A. Rules for Illative Conditionals 154; 3B. Rules for Promissory Conditionals 156; 4. Biconditionals 156; 5. Conjunctions 157; 6. Disjunctions 161; 7. De Morgan's Laws 166; 8. Other

Propositional Connectives 177; III. AN ANALYSIS OF THE RULES FOUND IN SOME INDIVIDUAL AUTHORS 171; 1. Paris in the Early Sixteenth Century 171; 2. Oxford in the Early Sixteenth Century 181; 3. Germany in the Early Sixteenth Century 183; 4. Spain in the Third Decade of the Sixteenth Century 184; 5. Spain in the Second Part of the Sixteenth Century 184; 6. Germany in the Early Seventeenth Century 185; CHAPTER IV / FORMAL LOGIC. PART TWO: THE LOGIC OF ANALYZED PROPOSITIONS 187; I. The Relationships Between Propositions 189; 1. The Quality and Quantity of Propositions 189; 2. Opposition 192; 3. Equipollence 194; 4. Simple and Accidental Conversion 195; 5. Conversion by Contraposition 199; II. Supposition Theory and Quantification 207; 1. The Divisions of Personal Supposition 207; 2. Descent and Ascent 213; III. Categorical Syllogisms 223; 1. Figures and Modes 224; 2. How to Test the Validity of a Syllogism 230; 3. Proof by Reduction 239; 4. Syllogisms with Singular Terms 247; APPENDIX / LATIN TEXTS 253; BIBLIOGRAPHY 282; 1. Primary Sources 282; 2. Secondary Sources on the History of Logic 1400-1650 291; INDEX OF NAMES 297.

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"I outline the developments and changes in logic and logic teaching between 1350 and 1600, paying attention to the survival of medieval doctrines and to the renewed Aristotelianism of the sixteenth century. I also discuss the philosophy of language in the same period, paying attention to speculative grammar, to the doctrines of signs and signification, and to the clash between medieval doctrines of conventional signification and the new renaissance interest in the idea of a naturally significant spoken language."

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"To understand the significance of these developments for the logician, we have to consider three questions. First, how much of the medieval logic described in the previous chapters survived? Second, insofar as medieval logic survived, were there any interesting new development in it? Third, does humanist logic offer an interesting alternative to medieval logic?

In Part One of this chapter I shall consider the first two questions in the context of a historical overview in which I trace developments in logic from the later middle ages thorough to 1606, the year in which the Jesuits of Coimbra published their great commentary on Aristotle's logical works, the *Commentarii Conimbricenses in Dialecticam Aristotelis*. I shall begin by considering the Aristotelian logical corpus, the six books of the *Organon*, and the production of commentaries on this work. I shall the examine the fate of the specifically medieval contributions to logic. Finally, I shall discuss the textbook tradition, and the ways in which textbooks changes and developed during the sixteenth century. I shall argue that the medieval tradition in logic co-existed for some time with the new humanism, that sixteenth century is dominated by Aristotelianism, and that what emerged at the end of the sixteenth century was not so much a humanist logic as a simplified Aristotelian logic.

In Part Two of this chapter, I shall ask whether the claims made about humanist logic and its novel contributions to probabilistic and informal logic have nay foundation. I shall argue that insofar as there is any principled discussion of such matters, it is to be found among writers in the Aristotelian tradition." p. 610

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"The first Scot to have a book of his printed while he was yet alive was James Liddell (Jacobus Ledelh) from Aberdeen. The book came out in 1495, and was sufficiently well received to go through several further editions during the author's lifetime. In view of the chief historical thesis I am concerned to defend here, Liddell's book is a fitting place at which to start the defence, for Liddell, though in his latter days a physician of note, was first and foremost a

philosopher and logician, and the book itself was a work of epistemology entitled *Treatise on Concepts and Signs*. Liddell matriculated at the University of Paris, a very common choice of university for young Scots of that period. He took his master's degree there in 1483 and in the following year began teaching in Paris. Two years later he was appointed examiner of Scottish students working for their bachelor's degree.

In 1491 or 1492 that substantial contingent of Scottish students at Paris was joined by John Mair from the village of Gleghornie near Haddington in East Lothian. Mair rose quickly up the academic ladder. He took his master's degree in 1494 and the following year became a lecturer in arts, while also beginning his studies in theology in the College of Montaigu. He published his first book in 1499, a work on explicable propositions, and by 1506, when he received his doctorate of theology and began teaching theology at the College of Sorbonne, he had already published numerous volumes on logic. In 1517 Mair returned to Scotland to take up the post of principal of the University of Glasgow, though while there he also taught in the Faculties of Arts and Theology. His very full timetable at Glasgow did not however prevent him returning to Paris in 1521 to see through the presses his enormous *History of Greater Britain*, a book motivated at least in part by a desire to further the cause of the union of England and Scotland in a single country, a 'Greater Britain'. In 1523 Mair transferred to the University of St Andrews where he continued his teaching in arts and theological subjects though also actively involved in important administrative roles in that university. Three years later he returned to Paris where he remained teaching theology till 1531 when, for reasons which remain obscure, he again took up a post at the University of St Andrews, and this time he stayed in Scotland. In 1530 he published a critical edition, with extensive commentary, of Aristotle's *Nicomachean Ethics*. It

proved to be his last book, though he lived for a further twenty years, dying an octogenarian in 1550. Among the pupils of Mair at Paris were several Scots whose writings I shall be examining in the succeeding chapters. They were David Cranston, George Lokert, Robert Caubraith, and William Manderston. David Cranston, a priest of the Glasgow Diocese, arrived in Paris in 1495, studied under Mair at the College of Montaigu, and himself began to teach in that college in 1499. Within thirteen years, having completed a number of books of his own and also edited works by Mair and Martin le Maitre, Cranston had died. We shall be studying his *Terminorum* in some detail."

pp. 2-3

"Chapter 8. Conclusion.

The discussion of rules of valid syllogistic inference completes our survey of the formal logic presented in the textbooks of John Mair and his circle. The survey has not dealt with all the main areas of concern represented in those textbooks. We have not, for example, discussed insoluble propositions, that is, paradoxical propositions where typically the paradoxicality is generated by a self-referential element in the proposition. The Liar Paradox 'I now speak falsely' is the most famous, though numerous other paradoxes were investigated. And the problem of the analysis of future contingent propositions, an important subject in which present-day philosophers are taking a lively interest, has not been discussed in the foregoing pages, though both Lokert and Manderston wrote treatises on the subject.

However a great deal of ground has been covered, enough to show that the poor opinion many have of medieval logic is unjustified. There are many philosophers and logicians who believe that medieval logic constituted not so much an advance on the Aristotelian system from which it emerged, as an inflation of that system by endless definitions and divisions all made in a hopeless attempt to provide, from

within the resources of natural language, rules for making valid inferences from propositions expressed in natural language to other propositions likewise expressed.

But the reputation of medieval logic as Aristotle's logic become obese is based on a travesty. And the negative purpose of this book has been to show up that travesty. The first point that has to be made is that the logic we have been examining marks an immense advance on Aristotle's system with respect to the area of *proprietaes logicales*, the logical properties of terms. The single most distinctive contribution of medieval logic was the doctrine of supposition, with the attendant notions of descent to and ascent from singulars, and the consequent ability to give a detailed account of the way quantifier expressions signify. It was in virtue of the doctrine of supposition and its associated rules of order of descent under terms with different sorts of supposition, that the late-scholastic logicians were able to give a detailed exposition of such fallacies as that of the quantifier shift. And it enabled them also to give an account of the validity of inferences involving propositions in which crucially one term stands in genitival relation to another.

The doctrines of ampliation, restriction, and alienation are also characteristically medieval doctrines, not investigated by Aristotle, but clearly of the greatest logical importance in view of the need to be able to state, for example, the truth conditions of past- and future-tensed propositions, an area which has been within the fold of modern formal logic since the late Arthur Prior's seminal work on tense logic. Certainly his employment of tense operators operating on (temporally or timelessly) present-tense propositions accords with the scholastic technique of expressing the tensed element of a non-present-tensed proposition in a predicate whose argument place is to be filled by a present-tense proposition. The examination of exponible propositions is also a distinctively medieval contribution to logic. It should not be forgotten that the medieval logicians at all times stayed

close to natural language and sought to formulate rules of valid inference for propositions in natural language. And given that propositions expressing, say, something's being the only member of a given class, or being an exception to a rule, or being different from something else, or coming to be or ceasing to be, can imply other propositions, the late-scholastic logicians considered there to be a real problem concerning the identification of the associated rules of inference. And if it was not within the remit of the logicians themselves to identify and formulate those rules then whose job was it? The recent interest in this field shown by E. J. Ashworth, Norman Kretzmann, and others, is not merely antiquarian; it reflects a concern with concepts which are of current philosophical interest.

In the field of syllogistic itself the late-scholastics made important advances. Two areas that we considered in which advances were made were, first, the validity conditions of syllogisms in which the middle term does not constitute the whole extreme in each premiss, and secondly the validity conditions of syllogisms whose premisses and conclusion are non all present-tensed. Once again it has to be noted that the medieval logicians were concerned to formulate rules of inference applicable to the kinds of argument that ordinary people using ordinary language commonly formulate.

In the late fifteenth and early sixteenth centuries there was a glorious flowering of logic. It was the last major achievement of the terminist tradition, and the circle of John Mair was especially prominent in that final flourish. Why the fortunes of logic suddenly foundered is a matter for speculation, but there is no good reason to suppose that the explanation is that there was suddenly nothing interesting left to say in that tradition. It would itself be even more in need of explanation why a tradition, which until the third decade of the sixteenth century had been finding so many interesting things in what had proved such a rich seam,

should suddenly strike clay. But it should be said that whatever the reason for a dead hand falling on logic at the time of the Reformation, and whether or not logic itself was a casualty of the Reformation, it remains true that many matters dealt with in the terminist textbooks of the late-scholastics have an immediate bearing on matters of current concern to logicians working within the tradition created by Frege, the man who prised off that dead hand. The logical writings of John Mair and his circle bore little fruit, and gradually slipped away into nearly total oblivion. Perhaps after five centuries those writings will at last come into their own."

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 "Lorenzo Valla's rhetorical reform of logic resulted in important changes in sixteenth-century mathematical sciences, and not only in mathematical education and in the use of mathematics in other sciences, but also in mathematical theory itself. Logic came to be identified with dialectic, syllogisms with enthymemes and necessary truth with the limit case of probable truth. Two main ancient authorities mediated between logical and mathematical concerns: Cicero and Proclus. Cicero's 'common notions' were identified with Euclid's axioms, so that mathematics could be viewed as core knowledge shared by all human

kind. Proclus' interpretation of Euclid's axioms gave rise to the idea of a universal human natural light of reasoning and of a *mathesis universalis* as a basic mathematics common to both arithmetic and geometry and as an art of thinking interpretable as algebra. "

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- Table of Contents: Lorne Falkenstein and Patricia Easton: Preface I-II; I. Introduction. Frederick S. Michael: Why logic became epistemology: Gassendi, Port Royal and the reformation in logic 1; Gary Hatfield: The workings of the intellect: mind and psychology 21; IIa. The Logic of Ideas in early modern philosophy. E. Jennifer Ashworth: Petrus Fonseca on objective concepts and the Analogy of Being 47; Elmar J. Kremer: Arnauld on the nature of ideas as a topic in logic: the *Port-Royal Logic* and *On True and False Ideas* 65; Emily Michael: Francis Hutcheson's *Logicae Compendium* and the Glasgow School of logic 83; IIb. The Logic of relations in early modern philosophy. Jill Vance Buroker: The priority of thought to language in Cartesian philosophy 97; Fred Wilson: Berkeley's metaphysics and Ramist logic 109; IIc. The logic of inference in early modern philosophy. Charles Echelbarger: Hume and the logicians 137; David Owen: Hume on demonstration 153; Patricia Kitcher: Kant on logic and self-consciousness 175; II.d. Modal themes in early modern philosophy. François Duchesneau: Leibniz and the model for contingent truths 191; Phillip D. Cummins: Hume on possible objects and

impossible ideas 211; Manfred Kuehn: The Wolffian background of Kant's transcendental deduction 229; III. Faculty psychology in early modern logic and methodology. Catherine Wilson: Between *Medicina Mentis* and medical materialism 251; Eric Palmer: Descartes's *Rules* and the workings of the mind 269; Louis E. Loeb: Causal inference, associationism, and skepticism in Part III of Book I of Hume's *Treatise* 283; Robert E. Butts: Kant's Dialectic and the logic of illusion 307; Anthony Larivière and Thomas Teufel: Bibliography 319; Index 329; List of Contributors 339-343.

"The papers collected in this volume address two closely related themes: the faculty psychology and the logic of the early modern period. The themes are related because, firstly, early modern logic-especially the early modern "logic of ideas" was explicitly psychologistic. It dealt with "concepts" rather than terms, "judgments" rather than propositions, and "reasoning" rather than arguments, and it saw all of these fundamental explanatory categories as grounded in contents or operations of the mind. And secondly, the lines of influence ran in the other direction as well. The higher cognitive faculties identified by early modern (and, indeed, by medieval and ancient) psychology were determined by logical and even grammatical considerations. Each cognitive faculty was understood relative to the notion that reasoning consists of arguments and that judgments assert relations between concepts. The intellect was understood as the faculty for abstracting universal concepts from the deliverances of sense; judgment, as the faculty for compounding and dividing concepts or as the faculty for inventing the middle term for a syllogism; and finally, reasoning was understood as the faculty for drawing inferences from previously made judgments. Faculty psychology cannot, therefore, be completely understood independently of traditional logic,

and early modern logic certainly cannot be understood independently of faculty psychology.

For most of this century both of these themes have been neglected by philosophers and historians of logic, philosophy, and psychology. The explanatory categories of traditional faculty psychology now seem naive and ill-founded. And the notion that a normative discipline like logic might be grounded on purely descriptive facts of our psychology, or on the arbitrary and conventional features of the grammar of a particular natural language, is rejected as an instance of the naturalistic fallacy. The early modern period has accordingly been judged to be the dark age of logic—a time when the advances of the Middle Ages were forgotten and the entire discipline was turned down the wrong path.

But, as Fred Michael observes in one of the introductory essays to this volume, although early modern logic made virtually no contribution to the history of logic, it was a central part of early modern epistemology and metaphysics. One does not have to look far into the standard early modern logic textbook, with its four-part treatment of ideas or concepts, judgments, reasoning, and method, to find themes of crucial importance to early modern philosophy. It was obligatory that a textbook of early modern logic discuss the notions of conceptual clarity, distinctness and adequacy— notions that played a key role in the epistemology of Descartes, Locke, Leibniz, and Wolff, to name but a few. And in early modern logic, a discussion of general terms could no more be separated from the issues of abstraction and abstract ideas— issues that were to become of central importance for later British empiricism— than a medieval treatment of the same topic could be separated from the issue of the nature of universals. Similarly, the early modern logic of propositions, because it could not be separated from the operation of judgment, dealt not just with the concept of relation, but with the act of relating, and referred crucially

to the basis of that act in the (rationalist) analysis of concepts and the (empiricist) evidence of experience. Again, syllogistic reasoning, based as it is on categorical propositions (out of which the paradigmatic syllogistic forms are constructed), carried with it an implicit ontology of substance and property (the subject and the predicate of the categorical proposition)-an ontology that continued to dominate early modern metaphysics and epistemology long after substantial forms and real qualities had been banished from early modern philosophy of nature. Furthermore, such popular principles of early modern ontology as the notion that whatever is conceivable is a possible object of experience, are obviously parasitic on notions of logical and real possibility. And the analytic and synthetic methods discussed in the fourth part of most early logic textbooks have an obvious relation to the opposed Cartesian and Newtonian paradigms for scientific research." pp. I-II.

27. Friedman, Russell L., and Nielsen, Luge O., eds. 2003. *The Medieval Heritage in Early Modern Metaphysics and Modal Theory, 1400-1700*. Dordrecht: Kluwer.
28. Frisch, Joseph C. 1969. *Extension and Comprehension in Logic*. New York: Philosophical Library.
Contents: Foreword by John R. Gallup VII; Introduction XV-XVI; Part I. Historical survey. Chapter I. Modern logicians (1662-1966) 1; Chapter II. Medieval and ancient logicians (1658-530 B.C.) 78; General summary of Chapter I and II 124; Part II: A doctrinal survey. Chapter III. An essay in doctrine 129; 1. Non-logical meanings of 'extension' 129; 2. Non-logical meanings of 'comprehension' 135; 3. Extension and comprehension with reference to the theory of knowledge 142; 4. Extension and comprehension in logic 149; 5. General summary of Chapter III 172; Epilogue 177; Appendix I. Grammatical sources 179; Appendix II: Different terminology and meanings 183; Bibliography 215; Footnotes 243-293.

"The purpose of this work is to analyze what has been frequently described by logicians as the extension and comprehension of concepts. Even if there is a justification for extension and comprehension in logic, it may be questioned whether there are any concomitant dangers since one historian of logic claims that this distinction has done more harm than good. Can it be said that the importance of extension and comprehension has been magnified out of proportion to the other parts of logic? Would it be more advantageous to correlate extension and comprehension with the predicables, or would it be better to try to eliminate the distinction altogether?

It is the aim of this study to explore the distinction existing between extension and comprehension, to ascertain whether such distinction is justifiable, where it should be placed in a treatise on logic, and how it should be presented. These are questions which should be answered if one intends to have a thorough grasp of logic.

This treatise will be divided into two parts. The first part will be subdivided into two chapters. Chapter I will examine the writings of modern logicians starting from 1662. Chapter II will treat of the works of classical and ancient authors in a reverse order of time starting from 1658. The second part will present an evaluation of extension and comprehension as a doctrine of logic.

It might be stated briefly here that the conclusion of this treatise hopes to present as probable the following declarations: (1) Extension and comprehension are basically an Aristotelian distinction. (2) Extension and comprehension are closely allied with the predicables. A logician cannot have a proper understanding of the former without a thorough understanding of the latter. (3) Any well-organized treatise on logic should begin with a study of the predicables.

The method of the first part which will be employed in this research is the empirical, or *a posteriori*, method. This

particular mode is characteristic of all historical research. On the other hand, the deductive, or a priori, method is unsound because it would oblige one to posit a principle according to which all subsequent facts ought to correspond. There is a constant danger associated with such procedure, namely, the tendency to misstate or distort historical facts for the sake of preserving a methodic balance. However, inasmuch as the second part involves an evaluation, both the a posteriori and a priori methods will be utilized.

Perhaps it will seem strange to the reader to discover that in the initial historical research, the philosophical works of modern logicians will be examined in a chronological order, whereas, when attention is turned to the classical and ancient authors, the order of time will be reversed for this historical research. This mode of procedure was not adopted in any haphazard manner, nor was it introduced merely for the sake of adding variety to the presentation of the study. Inasmuch as the historical evidence on the distinction of extension and comprehension is limited and oftentimes confusing, it was not deemed feasible to begin the investigation at the very moment when the reality underlying the distinction was first discovered and introduced into logic so as to trace its development in one chronological direction. Instead it seemed more reasonable to select one source of information to which many modern authors had recourse and by which they were greatly influenced. It was not difficult to make such a choice. The text which was cited most frequently and which influenced modern logicians was none other than the *Port Royal Logic* (1662)." (pp. XV-XVI).

29. Gabbay, Dov, and Woods, John, eds. 2004. *The Rise of Modern Logic: From Leibniz to Frege*. Amsterdam: Elsevier.

Handbook of the History of Logic: vol. 3.

Contents: Dov M. Gabbay and John Woods: Preface VII; List of Contributors IX-X; Wolfgang Lenzen: Leibniz's logic 1; Mary Tiles: Kant: From General to Transcendental Logic 85; John W. Burbidge: Hegel's logic 131; Paul Rusnock and Rolf George; Bolzano as logician 177; Richard Tieszen: Husserl's logic 207; Theodore Hailperin: Algebraical logic 1685-1900 323; Victor Sanchez Valencia: The algebra of logic 389; Ivor Grattan-Guinness: The mathematical turn in logic 545; Volker Peckhaus: Schröder's logic 557; Risto Hilpinen: Peirce's logic 611; Peter M. Sullivan: Frege's Logic 659; Index 751-770.

30. ———, eds. 2008. *Mediaeval and Renaissance Logic*. Amsterdam: Elsevier.

Handbook of the History of Logic: vol. 2.

Contents: Dov M. Gabbay and John Woods: Preface VII; List of Contributors IX; John Marenbon: Logic before 1100: the Latin tradition 65; Ian Wilks: Peter Abelard and his contemporaries 83; Terence Parsons: The development of Supposition Theory in the later 12th through 14th centuries 157; Henrik Lagerlund: The assimilation of Aristotelian and Arabic logic up to the later thirteenth century 281; Ria van der Lecq: Logic and theories of meaning in the late 13th and early 14th century including the Modistae 347; Gyula Klima: The nominalist semantic of Ockham and Buridan: a 'rational reconstruction' 389; Catarina Dutilh Novaes: Logic in the 14th century after Ockham 433; Simo Knuuttila: Medieval modal theories and modal logic 505; Mikko Yrjönsuuri: Treatments of the paradoxes of self-reference 579; E. Jennifer Ashworth: Developments in the fifteenth and sixteenth centuries 609; Peter Dvůrák: Relational logic of Juan Caramuel 645; Russell Wahl: Port-Royal: the stirrings of modernity 667; index 701.

31. ———, eds. 2008. *British Logic in the Nineteenth Century*. Amsterdam: Elsevier.

Handbook of the History of Logic: vol. 4.

Contents: Dov M. Gabbay and John Woods: Preface VII; List of Contributors XIII-XIV; Gordon R. McOuat and Charissa S. Varma: Bentham's logic 1; Tim Manes: Coleridge's logic 33; James Van Evra: Richard Whately and logical theory 75; Ralph Jessop: The logic of Sir William Hamilton: tunnelling through sand to place the keystone in the Aristotelic arch 93; Laurta J. Snyder: "The whole box of tools": William Whewell and the logic of induction 163; Fred Wilson: The logic of John Stuart Mill 229; Michael E. Hobart and Joan L. Richards: De Morgan's logic 283; Dale Jacquette: Boole's logic 331; Maria Panteki: French 'Logique' and British 'Logic': on the origins of Augustus de Morgan's early logical enquiries, 1805-1835 381; Amirouche Moktefi: Lewis Carroll's logic 457; James Van Evra: John Venn and logical theory 507; Bert Mosselmans and Ard van Moer: William Stanley Jevons and the substitution of similars 515; Shahid Rahman and Juan Redmond: Hugh McColl and the birth of logical pluralism 533; David Sullivan: The Idealists 605; William J. Mander: Bradley's logic 663; Index 719-735.

32. Gens, Jean-Claude, ed. 2010. *La Logique Herméneutique Du Xvii^e Siècle. J. C. Dannhauer Et J. Clauberg*. Argenteuil: Le Cercle Herméneutique Éditeur.
33. Ghisalberti, Alessandro. 2005. "Étapes De La Logique. De La Voie Moderne À La Logique De Port-Royal." *Les Études Philosophiques*:521-536.
34. Giard, Luce. 1984. "Du Latin Médiéval Au Pluriel Des Langues, Le Tournant De La Renaissance in Logique Et Grammaire." *Histoire, Epistémologie, Langage* no. 6:35-55. "L'Auteur étudie la manière dont, dans l'Europe de la Renaissance, les relations entre langue, logique et grammaire se sont modifiées, passant de l'étude du latin et des modèles logiques d'analyse à la pluralité des approches des langues vernaculaires prônées par les Humanistes."
35. ———. 1985. "La Production Logique De L'angleterre Au Xvi^e Siècle in Bacon." *Études Philosophiques*:303-324.

"La production logique éditée en Angleterre, majoritairement rédigée en latin, est analysée en quatre blocs: l'héritage médiéval de grammaire modiste et de logique, le renouveau aristotélicien progressif, la querelle ramiste, enfin les premiers traités en anglais."

36. Grandt, François de. 2001. "Response to Jonathan Barnes." In *Whose Aristotle? Whose Aristotelianism?*, edited by Sharples, Robert W., 133-134. Aldershot: Ashgate.
Reply to J. Barnes - *Locke and syllogism* - in the same volume pp. 105-132
37. Hailperin, Theodore. 1988. "The Development of Probability Logic from Leibniz to Maccoll." *History and Philosophy of Logic* no. 9:131-191.
38. Heath, Terence. 1971. "Logical Grammar, Grammatical Logic, and Humanism in Three German Universities." *Studies in the Renaissance* no. 18:9-64.
39. Hickman, Larry. 1971. "Late Scholastics Logics: Another Look." *Journal of the History of Philosophy* no. 9:226-234.
40. ———. 1980. *Modern Theories of Higher Level Predicates. Second Intentions in the Neuzeit*. München: Philosophia Verlag.

Table of Contents: Foreword by Ignacio Angelelli 7;
Introduction 9; Part One 15; Chapter One: Predication 17;
Chapter Two: Logical concepts 32; Part Two 57; Chapter
Three: Higher level predicates 59; Chapter Four: Second
Intentions: Conceptualism One and Nominalism 73;
Chapter Five: Second Intentions: Conceptualism Two 103;
Chapter Six: Second Intentions: Conceptualism Three 132;
Part Three 167; Chapter Seven: Special problems 169;
Bibliography 183; Index of names and subjects 189-191.
"The theory of higher predicates (predicates of predicates)
contained in the traditional discussions on second
intentions has been largely ignored, even by historians of
logic, who as a rule have concentrated on nominalism, a
scholastic trend so fruitful in formal logic yet so poor in this
particular topic.

Larry Hickman's work makes available for modern readers many of the riches related to higher predication, that have been so far buried in rather unknown authors mainly from the post-medieval or "second" scholasticism.

Hickman not merely shows us selected "pictures" of the unfamiliar territories he has been exploring: his inquiry, although primarily historical, is analytical and systematically oriented.

Bochenski wrote about twenty years ago: "Logic shows no linear continuity of evolution. Its history resembles rather a broken line. From modest beginnings it usually raises itself to a notable height very quickly -- within about a century -- but then the decline follows as fast. Former gains are forgotten; the problems are no longer found interesting, or the very possibility of carrying on the study is destroyed by political and cultural events. Then, after centuries, the search begins anew. Nothing of the old wealth remains but a few fragments; building on those, logic rises again." (1) Obviously during the cycle of so-called modern philosophy (Descartes to Kant, roughly) the problem of higher predication was not found interesting and this explains why Frege may have believed that the distinction of proper ties of the second and first level (*zweiter and erster Stufe*) was *his* ("meine, Unterscheidung"). At any rate, one can hardly find a better example of the "broken line" character of the history of logic than in this issue of iterated predication and properties of properties.

Predication is perhaps one of the very few topics in which most if not all philosophical schools seem to have something in common. This should be sufficient as a hint at the significance of Hickman's historical investigations, not merely for the logical historiography but for philosophy in general." (from the Foreword).

(1) I. M. Bochenski: *A History of Formal Logic*, Notre Dame, 1961 Introduction § 3.

41. Howell, Wilbur Samuel. 1956. *Logic and Rhetoric in England, 1500-1700*. Princeton: Princeton University Press. Contents: Preface V-VII; 1. Introduction 3; 2. Scholastic logic 12; 3. Traditional rhetoric: the three patterns 64; 4. The English Ramists 146; 5. Counterreform: systematics and neo-Ciceronians 282; 6. New horizons in logic and rhetoric 342; Index 399-411.

"Logic, conceived today as the science of validity of thought, and as the term for the canons and criteria that explain trustworthy inferences, was in the English Renaissance a theory not so much of thought as of statement. For all practical purposes, the distinction between thoughts and statements is not a very real distinction, since the latter are merely the reflection of the former, and the former cannot be examined without recourse to the latter. But what distinction there is consists in a differentiation between mental phenomena and linguistic phenomena, the assumption being that the thing to which either set of phenomena refers is reality itself. Logicians of the twentieth century are primarily interested in mental phenomena as an interpretation of the realities of man's environment, and in that part of mental phenomena which we call valid or invalid inference. Logicians of the English Renaissance were primarily interested in statements as a reflection of man's inferences, and in the problem of the valid and invalid statement. Thus Renaissance logic concerned itself chiefly with the statements made by men in their efforts to achieve a valid verbalization of reality. Since such statements were the work of scholars and science, not of laymen, Renaissance logic founded itself upon scholarly and scientific discourse and was in fact the theory of communication in the world of learning. The data upon which this theory rested were all learned tractates of that and earlier times. The theory itself attempted on the one hand to explain the nature of these tractates, as to language, sentence structure, and organization, and on the other to

offer assistance to the learner in his effort to master learned communication, as part of his entrance fee to the scientific and philosophical world." p. 3

42. ———. 1971. *Eighteenth-Century British Logic and Rhetoric*. Princeton: Princeton University Press. Contents: Preface VII-IX; 1. Introduction 5; 2. The Aristotelian inheritance in logic (1615-1825). I. Some Seventeenth-century Peripatetics 13; II. Bishop Sanderson and the attack on Ramus 16; III. Crakanthorp's *Logicae Libri Quinque* 22; IV. John Wallis's *Institutio Logicae* 29; V. Dean Aldrich's famous *Artis Logicae Compendium* 42; VI. Syllogisms and science: John Sergeant's view 61; 3 The Eighteenth-century Ciceronians (1700-1759). 1. Rhetoric as the counterpart of logic 75; II. John Ward's Lectures at Gresham College 83; III. John Holmes's *The Art of Rhetoric Made Easy* 125; IV. Separative tensions in rhetoric: a retrospect 142; 4 The British elocutionary movement (1702-1806). I. Rhetorical delivery adopts a new name 145; II. Some reflections on a semantic problem 147; III. Why delivery aroused urgent interest 152; IV. Continental backgrounds of British elocution 160; V. Le Faucheur's *Traitté* in England 164; VI. Betterton: Major actor as minor elocutionist 182; VII. Some rules for speaking and action 190; VIII. Orator Henley: preacher, elocutionist, merry-andrew 193; IX. Mason's *Essay on Elocution* 204; X. Action proper for the pulpit 209; XI. Sheridan: minor actor as major elocutionist 214; XII. Burgh, Herries, Walker, Austin 244; 5. The new logic (1690-1814). I. Seven points of friction 259; II. John Locke and the new logic 264; III. Other voices: Le Clerc, Crousaz, Watts, Duncan, Wolff 299; IV. The new accent: Reid, Kames, Campbell, Stewart 372; 6 The new rhetoric (1646-1800). I. Rhetoric versus rhetoric: a litigation in six issues 441; II. Voices of the Royal Society: Wilkins, Boyle, Sprat, Glanvill, Locke 448; III. Influences from abroad: Lamy, Fénelon, Rapin, Bouhours, Rollin 503; IV. The new rhetoric comes of age: Adam Smith's Lectures at

Edinburgh and Glasgow 536; V. George Campbell and the philosophical rhetoric of the new learning 577; VI.

Discordant consensus: Hume, Lawson, Priestley, Blair, Witherspoon 613; 7 Conclusion 695; Index 719-742

"This book undertakes to present an analysis of the major eighteenth-century British writings on logic and rhetoric and to place those writings in a chronological perspective, so that the reader may see them in relation to their antecedents in the seventeenth and their consequents in the nineteenth centuries and also in relation to their influences upon each other. Moreover, this book undertakes, as part of these two objectives, to introduce the reader to the authors of these writings and to make them and their works stand together as partners in an intellectual effort of appreciable size and duration. If history, as Carl Becker observed, is the memory of things said and done, then the present history is an attempt to tell our modern world what the chief British logicians and rhetoricians of the 1700's said when they wrote about their specialties, and what their works mean within the context of their particular time.

The main conclusion to be drawn from this history is that the changes which took place in logical and rhetorical doctrine between 1700 and 1800 are perhaps best interpreted as responses to the emergence of the new science.

The old science, as the disciples of Aristotle conceived of it at the end of the seventeenth century, had considered its function to be that of subjecting traditional truths to syllogistic examination, and of accepting as new truth only what could be proved to be consistent with the old. Under that kind of arrangement, traditional logic had taught the methods of deductive analysis, had perfected itself in the machinery of testing propositions for consistency, and had served at the same time as the instrument by which truths could be arranged so as to become intelligible and convincing to other learned men. In short, traditional logic

prided itself upon being a theory of learned enquiry and of learned communication. Meanwhile, traditional rhetoric also prided itself upon having a share in these same two offices, its special purpose being to communicate truths through a process which, on the one hand, blended scientific conclusions with popular opinions and manners, and, on the other hand, transmitted that blend to the general populace. For all practical purposes, the differences between logic and rhetoric, within the context of the old science, were derived from the differences between the learned and the popular audience. A good statement of the concepts which governed this view of the relations of these disciplines to each other is contained in the epigraph at the head of this chapter.

The new science, as envisioned by its founder, Francis Bacon, considered its function to be that of subjecting physical and human facts to observation and experiment, and of accepting as new truth only what could be shown to conform to the realities behind it. Bacon's vision became that of the Royal Society of London, and of similar organizations throughout Europe. The intoxicating novelty and enormous productivity of the new methods of investigation led young scientists and scholars to practice them with increasing sophistication; and logic, which had always claimed anyway to be the theory of enquiry, began to incorporate the new methods into its doctrines and ended by becoming so enamored of them that it allowed them to crowd out its waning interest in the methods of learned communication. Meanwhile, rhetoric began to see itself as the rightful claimant to the methods of learned communication and as the still unrivaled master of the arts of popular discourse; and by making these two activities its new concern, it came ultimately to think of itself as the art which governed all forms of verbal expression, whether popular or learned, persuasive or didactic, utilitarian or aesthetic. Thus in the context of eighteenth-century

learning, rhetoric became the sole art of communication by means of language, and logic moved towards the realization that it was destined to become the science of scientific enquiry. A good statement of the concept which controlled these emerging relations of logic and rhetoric to each other was made by John Stuart Mill in the first half of the nineteenth century, and I have quoted it as the epigraph of Chapter 7, although in a real sense it also belongs to this Introduction." pp. 5-6

43. Jardine, Lisa. 1974. "The Place of Dialectic Teaching in Sixteenth Century Cambridge." *Studies in the Renaissance* no. 21:31-62.
44. ———. 1976. "Humanism and Dialectic in Sixteenth Century Cambridge: A Preliminary Investigation." In *Classical Influences on European Culture, Ad 1500-1700*, edited by Bolgar, Robert Raplh, 141-154. Cambridge: Cambridge University Press.
45. ———. 1982. "Humanism and the Theaching of Logic." In *The Cambridge History of Later Medieval Philosophy*, edited by Kretzmann, Norman, Kenny, Anthony P. and Pinborg, Jan, 797-807. Cambridge: Cambridge University Press.
46. ———. 1988. "Humanistic Logic." In *The Cambridge History of Renaissance Philosophy*, edited by Schmitt, Charles B. and Skinner, Quentin, 173-198. Cambridge: Cambridge University Press.

"The history of medieval and Renaissance logic has traditionally been the history of the great medieval syllogistic logicians and the *fortuna* of their innovatory treatments down through the fifteenth and sixteenth centuries. When historians of logic characterise humanist dialectic as a misguided and non-rigorous intervention which disrupted the smooth development of medieval syllogistic logic, they confirm their own commitment to the interests and techniques pioneered by logicians like William of Sherwood. It is not surprising, then, if these scholars find the very different approach of the humanists trying. They

hold up against the 'non-rigorous' humanist treatment of ratiocination, the 'rigour' of a commitment to formal validity as the central focus for the study of logic - a commitment, that is to say, to those fixed patterns of argumentation which guarantee that from any true premises whatsoever one can only infer a true conclusion. Humanist treatments of logic, on the other hand, have a good deal in common with the interests of some recent, modern logicians, who have chosen to give a good deal of attention to non-deductive inference, and to 'good' arguments (arguments which can be counted on to win in debate), and the problematic nature of their validity. Like modern logicians they are interested, above all, in 'good' arguments.

A humanist treatment of logic is characterised by the fundamental assumption that *oratio* may be persuasive, even compelling, without its being formally valid (or without the formal validity of the argument being ascertainable). It takes the view, therefore, that any significant study of argument (the subject-matter of logic/dialectic) must concern itself equally with argument (strictly, argumentation) which is compelling but not amenable to analysis within traditional formal logic.' It is this fundamental difference of opinion over what is meant by 'compelling' argument which accounts for the dogmatic insistence (on ideological grounds) of the scholastic (and of the historian of scholasticism) that the humanist is a 'grammarian' or a 'rhetorician'. Either term announces that what the humanist is concerned with is not 'rigorous' in the restricted scholastic sense: all discourse not amenable to such 'rigorous' analysis is, for the scholastic, a matter for the grammarian (to parse and construe) or the rhetorician (to catalogue its persuasive devices). It is in the same spirit that humanists always refer to their study of ratiocination as 'dialectic' (reasoning conducted between two interlocutors), rather than as 'logic', to emphasise the active, pragmatic

nature of the argumentation which captures their interest."
(pp. 175-176, notes omitted)

47. Kessler, Eckhard. 2002. "*Logica Universalis Und Hermeneutica Universalis*." In *La Presenza Dell'aristotelismo Padovano Nella Filosofia Della Prima Modernità*, edited by Piaia, Gregorio, 133-171. Padova: Antenore.
48. Lolli, Gabriele. 1983. "Quasi Alphabetum. Logic and Encyclopedia in G. Peano." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 133-155. Bologna: CLUEB.
49. Maat, Jaap. 2006. "The Status of Logic in the Seventeenth Century." In *Foundations of the Formal Sciences Iv. The History of the Concept of the Formal Sciences*, edited by Löwe, Benedikt, Peckhaus, Volker and Rasch, Thomas, 157-167. London: College Publications.
50. Mangione, Corrado, and Bozzi, Silvio. 1983. "About Some Problems in the History of Mathematical Logic." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 157-174. Bologna: CLUEB.
51. Michael, Frederick S. 1997. "Why Logic Became Epistemology: Gassendi, Port Royal and the Reformation in Logic." In *Logic and the Workings of the Mind. The Logic of Ideas and Faculty Psychology in Early Modern Philosophy*, edited by Easton, Patricia A., 1-20. Atascadero: Ridgeview.
"Introduction.

It is quite obvious that epistemology permeates most of the logic texts written from a period beginning in the late seventeenth century and continuing into the beginning of the contemporary era in logic at the end of the nineteenth century. The model of this kind of logic appears to be the *Port Royal Logic*. Since this is a work suffused throughout with Cartesian doctrine, it is natural to conclude that this kind of logic is of Cartesian inspiration. Even though Descartes himself did not think of logic in this way, indeed

he appears to have viewed logic, and abstract thought generally, with suspicion, the epistemological approach to logic taken in the *Port Royal Logic* can be seen to be a natural outgrowth of Cartesian philosophy. The problem with this judgment is that there had been an earlier logic of this same type and its author, Pierre Gassendi, not only was not Cartesian, but was Descartes's principal rival among the moderns. His *Institutio Logica*, published not as a separate work, but as part of the *Syntagma Philosophica*, which itself is available only as the first two volumes of Gassendi's posthumous *Opera Omnia*, was, as I will try to show, both conceptually and structurally, the *Port Royal Logic*'s principal model.

Inasmuch as each of these logics has as its foundation a theory of ideas, it seems appropriate to call this kind of logic, the logic of ideas. Historians of logic do not look with much favour upon this kind of logic. In the introduction to his English translation of Gassendi's *Institutio Logica*, Howard Jones states that this work is "not a revolutionary logic which rejects all that the logical tradition has to offer, but a logic which Gassendi renders contemporary by selecting from that tradition only what is appropriate to seventeenth century needs." (1) Wilhelm Risse's assessment of the *Port Royal Logic* is similar. He says of this work, that it is historically one of the high points of logic, comparable in influence to that of Aristotle, Peter of Spain, Ramus and Wolff. But he adds: "This logic is certainly not original. Its extraordinary success is due to its elegance and its pedagogically effective manner of presentation." (2) With respect to logic after the medieval period, which includes the humanist logics of the Renaissance period in addition to the logic of ideas, William and Martha Kneale in their *The Development of Logic* remark that "from the 400 years between the middle of the fifteenth and the middle of the nineteenth century we have...scores of textbooks but few works that contain anything at once new and good." (3) The

logic of this same era is called by I.M. Bochenski, "classical logic" and is characterized by him as "something held the field in hundreds of books for nearly four hundred years"(4) but while he sees it as new, he certainly does not see it as good. This is his assessment: "Poor in content, devoid of all deep problems, permeated with a whole lot of non-logical philosophical ideas, psychologist in the worst sense-that is how we have to sum up the "classical" logics.(5)

While I don't think that this attitude is wholly wrong, I would contend that the logic of ideas *was* revolutionary. More specifically, it was the completion of a revolution that took two hundred years to accomplish, from the sixteenth to the eighteenth century. This was the era of the religious reformation, and it would be as appropriate to speak of a philosophical and scientific reformation in this era as well. It was a period of intense intellectual ferment and upheaval, in which the medieval world view was abandoned and replaced by the modern world view. It began with an attack on medieval logic. This at first sight seems odd inasmuch as if there is one area of medieval philosophy which those involved with the history of philosophy do not think was in need of reformation, it is logic. That is no doubt at least part of the reason why the reformed logics are viewed today with so little enthusiasm

The reform of logic occurred in two phases. The first phase was largely reactive. Medieval logic was discredited by the humanists and largely abandoned. The humanists hoped to convert logic from the formal and theoretical discipline of the medieval period into a practical study, which they hoped would be an improved instrument for argumentation and disputation, and so for the discovery of truth. There was however no consensus about how this was to be accomplished. The second phase in the reformation of logic began in the early seventeenth century, with the abandonment of the view that the way to truth is via argumentation and disputation. Disputation does not lead

to truth, it was held, rather the road to truth is by the way of ideas.

The logic of this era is, as Bochenski says, something new. It is an important development in the history of logic. But is it also something good? Were the humanists responsible for an advance in logic? Was the epistemological turn which the logic of ideas brought about, the right turn for logic? For the most part, I would have to answer no. These developments were on the whole not good for logic; certainly they were not good for formal logic. In the four hundred years from the end of the medieval era to the beginning of the era of contemporary logic, while there was some development in informal logic, formal logic was largely neglected. It was a reform of logic, a revolutionary change. But revolutions aren't always good and this one was not good for formal logic. Contemporary logicians and historians of logic have reason to be dismayed by its results.

On the other hand, the situation could hardly have been more favourable for the development of epistemology, and of the theory of ideas in particular. Logic was typically the first subject in a course of university studies, and in the logic of ideas, the theory of ideas was the subject matter to which the student was first exposed. The chief focus in the logic of ideas was not on form but on content, principally on epistemological content. Yet it really was a form of logic, as I hope to make clear and the conception of logic it embodies is legitimate.

My principal purpose in this paper is to examine the logic of ideas as it is found in Gassendi's *Institutio Logica* and in the *Port Royal Logic*, to compare these two works and to explain how this form of logic came about. But I do not think that this form of logic can be understood except in its broad intellectual context. Accordingly, it is with this that I begin." pp. 1-3

(1) Howard Jones, *Pierre Gassendi's Institutio Logica* (1658) (Assen, The Netherlands: Van Gorcum, 1981) p.

LXVII. This work will henceforward be referred to as "Jones," followed by page number(s).

(2) Wilhelm Risse, *Die Logik der Neuzeit* (Stuttgart-Bad Carstatt: Friedrich Frommann Verlag, 1964) vol II, p. 79.

(3) William and Martha Kneale, *The Development of Logic* (Oxford, 1962) p. 298.

(4) I. M. Bochenski, *A History of Formal Logic*, translation by Ivo Thomas (Notre Dame, Indiana: Notre Dame University Press, 1961) p. 254.

(5) I. M. Bochenski, *A History of Formal Logic*, translation by Ivo Thomas (Notre Dame, Indiana: Notre Dame University Press, 1961) p. 258.

52. Mugnai, Massimo. 1983. "Alle Origini Dell'algebra Della Logica." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 117-132. Bologna: CLUEB.
53. ———. 2002. "Denken Und Rechnen: Über Die Beziehung Zwischen Logik Und Mathematik In Der Frühen Neuzeit." In *Neuzeitliches Denken. Festschrift Für Hans Poser Zum 65. Geburtstag*, edited by Abel, Günter, Engfer, Hans-Jürgen and Hubig, Christoph, 85-100. Berlin: de Gruyter.
54. ———. 2005. "Logic and Mathematics in the 18th Century: Before and after Christian Wolff." In *Wolffiana 1: Macht Und Bescheidenheit Der Vernunft: Beiträge Zur Philosophie Christian Wolffs; Gedenkband Für Hans Werner Arndt*, edited by Cataldi Madonna, Luigi, 97-109. Hildesheim: Georg Olms.
55. ———. 2010. "Logic and Mathematics in the Seventeenth Century." *History and Philosophy of Logic* no. 31:297-314. "According to the received view (Bocheński, Kneale), from the end of the fourteenth to the second half of nineteenth century, logic enters a period of decadence. If one looks at this period, the richness of the topics and the complexity of the discussions that characterized medieval logic seem to belong to a completely different world: a simplified theory of the syllogism is the only surviving relic of a glorious past. Even though this negative appraisal is grounded on good

reasons, it overlooks, however, a remarkable innovation that imposes itself at the beginning of the sixteenth century: the attempt to connect the two previously separated disciplines of logic and mathematics. This happens along two opposite directions: the one aiming to base mathematical proofs on traditional (Aristotelian) logic; the other attempting to reduce logic to a mathematical (algebraical) calculus. This second trend was reinforced by the claim, mainly propagated by Hobbes, that the activity of thinking was the same as that of performing an arithmetical calculus. Thus, in the period of what Bocheński characterizes as 'classical logic', one may find the seeds of a process which was completed by Boole and Frege and opened the door to the contemporary, mathematical form of logic."

56. Muñoz Delgado, Vicente. 1964. *La Lógica Nominalista En La Universidad De Salamanca, 1510-1530. Ambiente, Literatura, Doctrinas*. Madrid: Revista Estudios.
57. ———. 1972. "Logica Hispano-Portuguesa Hasta 1600 (Notas Bibliográfico-Doctrinales)." *Repertorio de Historia de las Ciencias Eclesiásticas en España* no. 4:9-122.
58. ———. 1973. "España En La Historia De La Lógica Prerrenacentista (1350-1550)." *La Ciudad de Dios* no. 186:372-394.
59. ———. 1974. "La Lógica Formal Y Su Dimensión Histórica." *Cuadernos Salmantinos de Filosofía* no. 1:111-156.
60. ———. 1975. "Introducción Al Patrimonio Escolastico De Lógica." *Cuadernos Salmantinos de Filosofía* no. 2:45-76.
61. ———. 1982. "Lógica Hispano-Portuguesa E Iberoamericana En El Siglo Xvii." *Cuadernos Salmantinos de Filosofía* no. 9:279-398.
62. Normore, Calvin G. 1993. "The Necessity in Deduction: Cartesian Inference and Its Medieval Background." *Synthese* no. 96:437-454.
 "Although we now dismiss Kant's suggestion that logic was already essentially a completed science, we ourselves embrace its ghost, the idea that the conception of logical inference with which we are most familiar is just the

common conception of our illustrious philosophical ancestors. This ghost works mischief. It causes us to think whiggishly of the history of logic and so lends respectability to the thought that only since 1879 has there been great logic. More concretely, I shall argue here, the idea that there is and always has been a single dominant conception of valid inference (ours) blinds us to part of Descartes's project. By setting that project against its medieval background I hope to revive our sense of both its strangeness and its possibilities."

63. Nuchelmans, Gabriel. 1994. "Can a Mental Proposition Change Its Truth-Value? Some 17th-Century Views." *History and Philosophy of Logic* no. 15:69-84.
" In the first half of the seventeenth century the Aristotelian view that the same statement or belief may be true at one time and false at another and, on the other hand, the conception of a mental proposition as a fully explicit thought that lends a definite meaning to a declarative sentence originated a lively debate concerning the question whether a mental proposition can change its truth- value. In this article it is shown that the defenders of a negative answer and the advocates of a positive answer argued on the basis of different notions of what a mental proposition is: one side taking it as more or less equivalent to a specific utterance- meaning and the other side as more or less equivalent to a generic sentence-meaning."
64. ———. 1998. "Logic in the Seventeenth Century: Preliminary Remarks and the Constituents of the Proposition." In *The Cambridge History of Seventeenth-Century Philosophy*, edited by Garber, Daniel and Ayers, Michael, 103-117. Cambridge: Cambridge University Press.
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65. ———. 1998. "Proposition and Judgement." In *The Cambridge History of Seventeenth-Century Philosophy*, edited by Garber, Daniel and Ayers, Michael, 118-131. Cambridge: Cambridge University Press.

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66. ———. 1998. "Deductive Reasoning." In *The Cambridge History of Seventeenth-Century Philosophy*, edited by Garber, Daniel and Ayers, Michael, 132-146. Cambridge: Cambridge University Press.

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67. Peckhaus, Volker. 1999. "19th Century Logic between Philosophy and Mathematics." *Bulletin of Symbolic Logic* no. 5:433-450.

"The history of modern logic is usually written as the history of mathematical or, more general, symbolic logic. As such it was created by mathematicians. Not regarding its anticipations in scholastic logic and in the rationalistic era, its continuous development began with George Boole's *The Mathematical Analysis of Logic* of 1847, and it became a mathematical subdiscipline in the early 20th century. This style of presentation cuts off one eminent line of development, the philosophical development of logic, although logic is evidently one of the basic disciplines of philosophy. One needs only to recall some of the standard 19th century definitions of logic as, e.g., the art and science of reasoning (Whateley) or as giving the normative rules of correct reasoning (Herbart).

In the paper the relationship between the philosophical and themathematical development of logic will be discussed.

Answers to the following questions will be provided:

1. What were the reasons for the philosophers' lack of interest in formal logic?
2. What were the reasons for the mathematicians' interest in logic?
3. What did "logic reform" mean in the 19th century? Were the systems of mathematical logic initially regarded as contributions to a reform of logic?
4. Was mathematical logic regarded as art, as science or as both?"

68. Picardi, Eva. 1989. "Assertion and Assertion Sign." In *Le Teorie Delle Modalità. Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Corsi, Giovanni, Mangione, Corrado and Mugnai, Massimo, 139-154. Bologna: CLUEB.
69. Proust, Joëlle. 1989. *Questions of Form. Logic and the Analytic Proposition from Kant to Carnap*. Minneapolis: University of Minnesota Press.
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Translated by Anastasios Albert Brenner.
See the Third Chapter: *Bolzano's renovation of analiticity* - pp. 49-108.
70. Redmond, Walter. 2002. *La Lógica Del Siglo De Oro: Una Introducci3n Hist3rica a La L3gica*. Pamplona: Eunsa.
71. Roncaglia, Gino. 1990. "Cum Deus Calculat -- God's Evaluation of Possible Worlds and Logical Calculus." *Topoi* no. 9:83-90.
72. ———. 1996. *Palestra Rationis. Discussioni Su Natura Della Copula E Modalità Nella Filosofia 'Scolastica' Tedesca Del Xvii Secolo*. Firenze: Olschki.
73. Rossi, Paolo. 2000. *Logic and the Art of Memory. The Quest for a Universal Language*. New York: Athlone Press. Reprinted 2006 by Continuum.
Original edition: *Clavis Universalis. Arti della memoria e logica combinatoria da Lullo a Leibniz* - Bologna, Il Mulino, 1983
74. Schuurman, Paul. 2004. *Ideas, Mental Faculties and Method. The Logic of Ideas of Descartes and Locke and Its Reception in the Dutch Republic, 1630-1750*. Leiden: Brill.
75. Sgarbi, Marco. 2012. "Towards a Reassessment of British Aristotelianism." *Vivarium* no. 50:85-109.
"The aim of the paper is to reassess the role of British Aristotelianism within the history of early modern logic between the sixteenth and seventeenth centuries, as a crucial moment of cultural transition from the model of humanistic rhetoric and dialectic to that of facultative logic,

that is, a logic which concerns the study of the cognitive powers of the mind. The paper shows that there is a special connection between Paduan Aristotelianism and British empiricism, through the mediation of British Aristotelianism. British Aristotelians took the ideas of the Paduan Aristotelian tradition and carried them to an extreme, gradually removing them from the original Aristotelian context in which they were grounded and developing what would later become the fundamental ideas of British empiricism."

76. ———. 2013. *The Aristotelian Tradition and the Rise of British Empiricism. Logic and the Rise of British Empiricism. Logic and Epistemology in the British Isles (1570-1689)*. New York: Springer.
77. Thiel, Christian. 1982. "From Leibniz to Frege: Mathematical Logic between 1679 and 1879." In *Logic, Methodology and Philosophy of Science, Vi.*, edited by Cohen, Jonathan L., 755-770. Amsterdam: North-Holland. Proceedings of the Sixth International Congress of Logic. Methodology and Philosophy of Science, Hannover 1979.
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79. Ueberweg, Friedrich. 1871. *System of Logic and History of Logical Doctrines*. London: Longmans, Green and Co. Translated from the German, with notes and appendices by Thomas M. Lindsay. Reprinted by Thoemmes Press 2001.
80. Vasoli, Cesare. 1974. "Profilo Della Logica Umanistica Nell'età Del Rinascimento." In *I Miti E Gli Astri*, 247-282. Napoli: Guida.
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Leibniz on Logic, Language and Semiotics. Annotated bibliography (First Part: A - K)

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"The work purports to provide a philosophical history of Leibniz's logical works. The principal conclusion is that Leibniz's work on logical calculi, the modifications in it coinciding with the three periods identified by Couturat, rest upon refinements in the expression of his philosophical system, and end when his philosophical thought reached that point at which it is manifest that a logical calculus such as he had envisaged is not competent to his philosophical standpoint."

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 "The main purpose of this paper is to show that Leibniz did not accept what today is usually known as Leibniz's rule of substitutivity (or indiscernibility of identicals, etc.). This purpose is attained by quoting three texts, in Latin, one of them not yet published. Another aim of the paper is to show how Frege believed that the rule Leibniz had used only for restricted calculi, could be extended to the ordinary language. This is construed as the source of the axiomatic status enjoyed by the rule among philosophers in the last century."
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"The aim of this paper is to reassess some cardinal ideas of Leibniz in the light of the methods and goal of model theory. It is a leitmotiv in Abraham Robinson's work that, as well as Leibniz wanted logic to be an "ars inveniendi" for mathematics, model theory has to "produce useful tools for the development of actual mathematics." This paper tries to clarify the meaning and the far-reaching consequences of such a statement by comparing the method of logical analysis of the mathematical language to Leibniz's concepts of 'analysis' and 'characteristica'. Some results of Alfred Tarski and Abraham Robinson are briefly sketched in order to give evidence of the contemporary achievement of what Leibniz wished logic to be."

11. Berliner, Paul. 1987. "Zur Problematik Einer Ars Inveniendi." *Philosophia Naturalis* no. 24:186-198.
 "The "Ars inveniendi" and her scientific tools, "Ars combinatoria," "Ars characteristica," "Ars significandi," cover a creative conception of Leibniz. The conception combines the idea of theory constitution and the unlimited formal integrity and stringency of combinatory techniques. It explains the mechanism of invention and natural adherence to methodological rules, when scientific theories are not presupposed to exist. The art is applied to a system of inventive axiomatics, which embodies a previous work of the author."
12. Berlioz, Dominique. 1993. "Langue Adamique Et Caractéristique Universelle Chez Leibniz." In *Leibniz and Adam*, edited by Dascal, Marcelo and Yakira, Elhanan, 153-168. Tel Aviv: University Publishing Projects.
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"New light is shed on Leibniz's commitment to the metaphysical priority of the intensional interpretation of logic by considering the arithmetical and graphical representations of syllogistic inference that Leibniz studied. Crucial to understanding this connection is the idea that concepts can be intensionally represented in terms of properties of geometric extension, though significantly not the simple geometric property of part-whole inclusion. I go on to provide an explanation for how Leibniz could maintain the metaphysical priority of the intensional interpretation while holding that logically the intensional and the extensional stand in strictly inverse relation to each other."
17. Brands, Hartmut. 1986. "Eine Anmerkung Zur Vermeintlichen Unvollständigkeit Der Beiden Regeln Der Qualität in Leibniz' "Dissertatio De Arte Combinatoria"." *Studia Leibnitiana* no. 18:83-88.
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20. Burkhardt, Hans. 1980. *Logik Und Semiotik in Der Philosophie Von Leibniz*. München: Philosophia Verlag.
"This book provides the first account of the Janus-headed character of Leibniz's philosophy. Burkhardt presents not only an exhaustive survey of the background of Leibniz's thought in scholasticism, but also an estimation of his significance for contemporary logic and philosophy. On the one hand Leibniz is a representative of protestant Aristotelianism. His philosophical training was scholastic; his terminology is scholastic. On the other hand, it was he

who developed the first logical calculi. His work on the theory of possible worlds means that he can be regarded as a precursor of possible world semantics in modal logic. And deontic logic, too, makes its first appearance in Leibniz's writings. He did original work also in probability theory, an area which at his time stand in a close relationship with logic. It was only with the development of mathematical logic by Boole and Frege that Leibniz's achievements in logic and semiotic could properly be grasped. An account of his contributions to these fields therefore presupposes a knowledge of those branches of Contemporary mathematical logic which he anticipated. Leibniz was also highly original in the area of linguistics. He put forward a series of theories and analyses in rational grammar which have hitherto been little considered in the literature. The present work offers, then, systematic discussions of the syllogism, of rational grammar, of the *characteristica universalis*, of combinatorics. It deals with the development of logical calculi, the relation between algebra and logic, geometry, ontic and deontic modal logic, the interconnections between logic and probability theory, and the relations between ontology, logic and semiotics."

21. ———. 1983. "Modaltheorie Und Modallogik in Der Scholastik Und Bei Leibniz." *Anuario Filosofico de la Universidad de Navarra Pamplona* no. 16:273-292.
22. ———. 1987. "The Leibnizian *Characteristica Universalis* as Link between Grammar and Logic." In *Speculative Grammar, Universal Grammar, and Philosophical Analysis of Language*, edited by Buzzetti, Dino and Ferriani, Maurizio, 43-63. Amsterdam: Benjamins.
23. ———. 1988. "Modalities in Language, Thought and Reality in Leibniz, Descartes and Crusius." *Synthese* no. 75:183-215. "This essay tries to give a survey of the theories of modality in the philosophy of Leibniz. Leibniz distinguishes implicitly between five different kinds of modality: linguistic, logical, epistemic, ontological, and metaphysical. "Linguistic"

modalities concern the different linguistic expressions of modalities. "Logical" modality concerns consistency and maximally consistent concepts in the case of individual concept. "Epistemic" modalities include understandability, thinkability, moral certainty and absolute certainty.

"Ontological modalities" include compossibility, necessity and impossibility "per accidens", physical modality.

"Metaphysical modality" is related to God, his thinking and his action, thus, for example, "prima possibilia", moral necessity and possible worlds."

24. ———. 1989. "Das Vorurteil Zugunsten Des Aktualen: Die Philosophischen Systeme Von Leibniz and Meinong." In *Le Teorie Delle Modalità. Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Corsi, Giovanni, Mangione, Corrado and Mugnai, Massimo, 155-182. Bologna: CLUEB.
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"This work is a contribution to a new view of Leibniz's logic, pretending to show that his writings were not only rich in projects (*Characteristica, Combinatoria, Mathesis*), but also in concrete logico-mathematical developments. We prove that his Numerical Characteristic, assigning pairs of numbers to terms of categorical propositions, is a complete and correct semantics for aristotelian syllogistic, and the algebraic system presented in *Fundamentals of Logical Calculus* is essentially a complete version of boolean algebraic logic."

28. Castañeda, Hector-Neri. 1974. "Leibniz's Concepts and Their Coincidence 'Salva Veritate'." *Noûs* no. 8:381-398. "Discusses Leibniz's views of concepts and their coincidence, which is, not identity of concepts as Ishiguro and others think, but Leibniz's fundamental copula linking concepts into propositions. Formulates fifteen Leibnizian theses on the topics. Examines five theses propounded by Hidé Ishiguro in "Leibniz's philosophy of logic and language" (1972) arguing that they belittle Leibniz's work in logic and misrepresent his views in the philosophy of logic and language. Opposes Ishiguro's Athenian approach, which strings together passages from anywhere in a philosopher's corpus, regardless of dates, as if the philosopher had all along before his mind a full-blown consistent system. Illustrates the contrastive Darwinian approach by staying within Leibniz's *General inquiries about the analysis of concepts and of truths*."
29. ———. 1976. "Leibniz's Syllogistico-Propositional Calculus." *Notre Dame Journal of Formal Logic* no. 17:481-500. "This is a constructive appraisal of Leibniz's attempts, in three papers written in 1686-1690, at formulating an equational calculus that formalizes both classical syllogistics and propositional logic. The attempts failed to provide a calculus adequate for monadic predicate logic, because of Leibniz's inadequate treatment of existence and the particular quantifier. But Leibniz did come remarkably close to formulating an adequate propositional calculus with biconditional and negation as primitive connectives, and some primitive rules of substitution of material equivalents. The degree of closeness can be appreciated by seeing how easy it was for Castañeda to complement Leibniz's axioms and rules in order to produce a complete propositional calculus LC with those primitives. the completeness of LC is shown, and other alternatives to LC suggested by Leibniz himself are discussed briefly."

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"In this paper I present a careful examination of Leibniz's mereological views, based in large part on the theory he presents in *The Metaphysical Foundations of Mathematics*" (1715). Leibniz begins with a primitive notion of compresence and, in a step by step manner, builds up more complex mereological notions culminating in his definitions of parthood, whole, and composition. I use this mereological account to clear up a confusion in the literature regarding whether or not monads can be located in space. Along the way we gain some insight into Leibniz's views on infinity and the structure of the universe."
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38. ———. 1988. "On Knowing Truths of Reason." In *Leibniz. Questions De Logique*, edited by Heinekamp, Albert, 27-37. Stuttgart: Steiner Verlag.
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 "Logical works of this period, beginning with "Generales Inquisitiones" and ending with the two dated pieces of August 1, 1690 and August 2, 1690, are read as a sustained effort, finally successful, to develop a set of axioms and an appropriate schema for the expression of categorical propositions faithful to traditional syllogistic. This same set of axioms is shown to be comprehensive of the propositional calculus of "Principia Mathematica", providing that 'some A is A' is not a "thesis" in an unrestricted sense. There is no indication in the works of this period that Leibniz understood just how significant is this logical system he developed. But it is undeniable that he held tenaciously to this particular set of axioms throughout the period, a set of axioms of great power."
41. Drapeau Contim, Filipe. 1999. "Aspects Sémantique Et Métaphysique De La Réduplication Chez Leibniz." In *L'actualité De Leibniz: Les Deux Labyrinthes*, edited by Berlioz, Dominique and Nef, Frédéric, 321-361. Stuttgart: Franz Steiner.
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 "In *the Nouveaux essais sur l'entendement humain*, book III "Des mots" offers a rather closely knit presentation of Leibniz's ideas about language and its connection with

knowledge. Though genuinely Leibnizian, this development is cast in a foreign mould, built out of an empiricist and analytic assessment of the twofold relationship of words with ideas and essences. Of the many issues in Locke's *Essay* which prompted Leibniz's antagonistic replies, I shall select this one: our natural processes of thought result in complex ideas, which, expressed in substantive terms, fall short of representing the "real essences" of things, but make it possible to classify them according to "nominal essences". In contraposition to the nominal/real essence distinction, which he disqualifies, Leibniz reintroduces and recasts for his purposes the distinction between nominal and real definitions of terms. Accordingly, a major trend of his analysis of words consists in elucidating the principle "the possible governs the real" in its application to language and to its classificatory function. I will attempt (1) to tract the origin of this doctrine back to some of Leibniz's previous reflections on language; (2) to assess Nicholas Jolley's analysis of this theme in his recent book on the *Nouveaux essais*;^{*} (3) to show the possible implications of the principle for Leibniz's concept of empirical knowledge."

^{*} Leibniz and Locke. A study of the *New essays on human understanding* - New York, Oxford University Press, 1984.

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46. Elgueta, Raimon, and Jansana, Ramon. 1999. "Definability of Leibniz Equality." *Studia Logica*:223-243.
"Given a structure for a first-order language *L*, two objects of its domain can be indiscernible relative to the properties expressible in *L*, without using the equality symbol, and

without actually being the same. It is this relation that interests us in this paper.

It is called Leibniz equality. In the paper we study systematically the problem of its definability mainly for classes of structures that are the models of some equality-free universal Horn class in an infinitary language $L_{\kappa\kappa}$, where κ is an infinite regular cardinal."

47. Englebretsen, George. 1981. *Three Logicians. Aristotle, Leibniz, and Sommers and the Syllogistic*. Assen: Van Gorcum.

Preface VII; Introduction 1; *Three logicians*; Aristotle 9; Leibniz 28; Sommers 42; *The syllogistic*; Contemporary mathematical logic 67; Syllogistic logic 77; Concluding remarks 109; Bibliography 113; Index 116-118.

"In his *Introduction to Logical Theory* (London, 1952) P.F. Strawson attempted to show that traditional syllogistic logic was more reflective of various features of ordinary language than was modern mathematical logic. P. Geach, the best modern critic of traditional logic, responded to Strawson in "Mr. Strawson on Symbolic and Traditional Logic", *Mind*, 72 (1963). His brief remarks there show that Strawson's defense of the old logic is, at best, naive. Geach clearly believes that there just can be no sound defense of traditional logic. He even suggests that those who would persist in their allegiance to the old logic are either irrational or lazy. He says:

Many readers will vaguely think Strawson has *proved* that the traditional system with all its faults is philosophically less misleading than the new-fangled one. Those Colleges of Unreason where the pseudo-Aristotelian logic is presented as the only genuine logic, and those lecturers who would like to teach the philosophy of logic without having to learn any modern logic, may well thus have been supplied with a pretext for supine ignorance.

We believe that syllogistic logic is philosophically defensible. What Geach sees as its faults are either not faults at all or can be remedied. The result of applying such remedies is a new syllogistic - a logic which is broader and stronger than Aristotle's original. It is a logic competitive with the "new fangled" logic of today. This new syllogistic was envisaged, but not built, by Leibniz. The hope for such a logic lay dormant during the period when mathematical logic was being born and nurtured through its rapid maturity. But recently that hope has been revitalized, and virtually fulfilled, in the work of F. Sommers. The best general answer to Geach's overall charge is simply a presentation of this new syllogistic.

While the primary motive in presenting this essay is the defense of syllogistic against its modern detractors, we also believe that it is time for a concise introduction to Sommers' logical work. This work is scattered throughout a wide variety of journals and anthologies; and there is now no available account of it. Given the great originality of Sommers' ideas, and the importance of the issues he has chosen to deal with in logic, this void must be filled. Part of this essay is intended as a modest start at that task." From the Preface.

48. ———. 1982. "Leibniz on Logical Syntax." *Studia Leibnitiana* no. 14:119-126.

49. ———. 1984. "Feldman and Sommers on Leibniz's Law." *Dialogos* no. 43:91-96.

34. "Following suggestions made recently by F. Sommers it can be shown that Leibniz's law is in fact a principle of term substitutability. Terms are the same if and only if they are intersubstitutable for one another. More importantly for Leibniz's general program for syllogistic is the fact that this principle is but a special case of the dictum de omni."

50. ———. 1986. "A Note on Truth and Existence in Leibniz." *Manuscrito.Revista Internacional de Filosofia* no. 9:7-9.

"Leibniz was able to connect the notion of truth for a sentence with the idea of existence for individuals. Words and sentences are taken to both denote individuals and signify concepts. If a true sentence two conditions must hold. The concept signified by the subject and the word denoted by the sentence must be the actual word."

51. ———. 1988. "A Note on Leibniz's Wild Quantity Thesis." *Studia Leibnitiana* no. 20:87-89.
52. Esquisabel, Oscar M. 2002. "¿Lenguaje Racional O Ciencia De Las Fórmulas? La Luridimensionalidad Del Programa Leibniziano De La Característica General." *Manuscrito.Revista Internacional de Filosofia* no. 25:147-197.
 "In this paper is approached the Leibnizian project for a general characteristics. Intended as a instrument to help the limitations and deficiencies of the natural human reason, the general characteristics presents itself moreover as a tool for expanding the power of the human thought by adopting and generalizing the methods of the algebraic representation. This goal however entails a difficulty when it is attempted to define with accuracy the extent of the project."
53. Ferriani, Maurizio. 1983. "Boole, Frege E La Distinzione Leibniziana 'Lingua-Calculus'." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 301-306. Bologna: CLUEB.
54. Gensini, Stefano. 1991. *Il Naturale E Il Simbolico. Saggio Su Leibniz*. Roma: Bulzoni.
55. ———. 2000. *"De Linguis in Universum": On Leibniz's Ideas on Languages. Five Essays*. Munster: Nodus Publikationen.
56. ———. 2005. "Leibniz on the Arbitrariness of Sign." In *Leibniz Et Les Puissances Du Langage*, edited by Berlioz, Dominique and Nef, Frédéric, 55-68. Paris: Vrin.
 "A fact generally accepted by critique is that Leibniz holds a relevant position within the history of linguistic thought and

language studies. Institutional works such as those of Aarsleff (1975), Heinekamp (1992) or Rutherford (1995), as well as the more analytical studies of Heinekamp (1972, 1975), Mugnai (1976), Dascal (1978) or, more recently, Pombo (1987) and Gensini (1991) agree with this general statement. Furthermore, against Cassirer's well known theory, developed in the first volume of his *Philosophie der symbolischen Formen* (1923), growing consent is given to the hypothesis of a substantial unity of Leibniz's view of language and sign systems. Whether his focus is on universal languages or on single dialects, on the general features of natural-historical languages or on the symbolic systems of chemistry and mathematics, on cryptography or on monastic languages, his notion of *meaning* as a flexible dimension of language and as a semiotic articulation of knowledge can be seen as the device that connects all the various stances regarding different forms of language. Given these assumptions, this work will focus on a particular aspect of Leibniz's considerations on language, and it will be discussed with special attention to two writings (the *Dialogus* of August 1677 and some pages of the *Nouveaux essais sur l'entendement humain*, book III, 1704-1705) which differ as to date of composition and scope and therefore delimit an entire theoretical itinerary. The topic in question is the critique to the principle of arbitrariness of linguistic signs. This issue runs through Leibniz's entire philosophical and linguistic quest and it is intertwined to a number of more general problems of his system of thought such as the relationship between knowledge and truth, the limits of human cognitive skills, the need to affirm the autonomy (also in a strong semiotic sense) of thought and, the other hand, to safeguard the platonic reign of essence (or of the possibility of things) to which even God is in some way subordinated. Inevitably, this work will focus more on the historical and theoretical impact that Leibniz's ideas had on philosophy of

language than on the sophisticated internal filigree of his reflections. Hopefully, this will not obscure the complexity of Leibniz's perspective. Given that every perspective is historically determined, an approach to a classic necessarily has to face the challenge of finding a balance between the *internal* reconstruction of facts and the need to relate to those general theoretical issues of the tradition that still engage us to this day."

57. Giannetto, Giuseppe. 2001. "Mondi Possibili E Calcolo Divino in Leibniz." *Metalogicon* no. 14:181-222.
58. Godart, Béatrice. 1987. "Les Enoncés Sui-Falsificateurs: Nouvelle Classe D'excéptions a La Loi De Leibniz." *Logique et Analyse* no. 30:235-256.
59. Görz, Gunther. 2002. "Rationale Grammatik, *Characteristica Universalis* Und Moderne Beschreibungslogik." In *Medium Mathematik. Anregungen Zu Einem Interdisziplinären Gedankenaustausch. Band 1*, edited by Löffladt, Günter and Toepell, Michael, 170-196. Hildesheim: Franzbecker.
60. Heidegger, Martin. 1984. *The Metaphysical Foundations of Logic*. Bloomington: Indiana University Press.
Transkated by Michael Heim.
Original German edition: *Metaphysische Anfangsgründe der Logik im Ausgang von Leibniz* - (Sommersemester 1928) - Herausgegeben von Klaus Held - Frankfurt, Klostermann, 1978, (Heidegger Gesamtausgabe, 26)
61. Heinekamp, Albert. 1972. "Ars Characteristica Und Naturliche Sprache Bei Leibniz." *Tijdschrift voor Filosofie* no. 34:446-488.
62. ———. 1975. "Naturliche Sprache Und Allgemeine Charakteristik Bei Leibniz." In *Akten Des Ii. Internationalen Leibniz-Kongress, Hannover 17-22 Juli 1972. Band 4: Logik, Erkenntnistheorie, Methodologie, Sprachphilosophie*, 257-286. Wiesbaden: Franz Steiner. *Studia Leibnitiana. Supplementa* 15
63. ———. 1976. "Sprache Und Wirklichkeit Nach Leibniz." In *History of Linguistic Thought and Contemporary*

Linguistics, edited by Parret, Herman, 518-570. Berlin New York: Walter de Gruyter.

64. ———, ed. 1988. *Leibniz: Questions De Logique*. 15 ed. Symposion organisé par la Gottfried-Wilhelm-Leibniz-Gesellschaft, Hannover (Bruxelles, Louvain-la-Neuve, 26 au 28 août 1985).
Studia Leibnitiana. Sonderheft.
65. ———. 1991. "Logica Y Metafisica De Leibniz. Principales Lineas De Interpretacion Durante El Siglo Xx." *Dialogo Filosofico* no. 19:4-31.
Spanish translation by Juan A. Nicolás Marín of the *Introduction to: Leibniz' Logik und Metaphysik* - edited by Albert Heinekamp (1988)
66. ———. 1992. "Gottfried Wilhelm Leibniz (1646-1716)." In *Sprachphilosophie. Ein Internationales Handbuch Zeitgenössischer Forschung = Philosophy of Language = La Philosophie Du Langage. Vol. I*, edited by Dascal, Marcelo, 320-330. Berlin: de Gruyter.
67. Heinekamp, Albert, and Schupp, Franz, eds. 1979. *Die Intensionale Logik Bei Leibniz Und in Der Gegenwart*. 8 ed.
Symposion der Leibniz-Gesellschaft Hannover, 10. und 11. November 1978.
Studia Leibnitiana. Sonderheft.
68. ———, eds. 1988. *Leibniz' Logik Und Metaphysik*.
Darmstadt: Wissenschaftliche Buchgesellschaft.
69. Herget, Don Emil. 1987. "Non-Standard Categorical Syllogism: Four That Leibniz Forgot." *History and Philosophy of Logic* no. 6:1-13.
" n his "Mathesis rationis" Leibniz discounted out of hand four categorical propositions that would have considerably broadened the resultant syllogistic logic. He did this despite the facts both that he had devised a suitable manner for expressing the latent quantification over terms, and that he had reasoned adequately to determine which of the syllogisms in the resulting broadened logic were valid. Leibniz's reasons for discounting these non-standard

propositions are shown to be inadequate, and the resultant syllogistic logic is outlined."

70. Hernández Márquez, Víctor Manuel. 1999. "Leibniz Y La Lingua Characterica." *Dianoia* no. 45:35-63.
71. Ibáñez, Alejandro Herrera. 1982. "La Logica Intensional De Leibniz." *Dianoia* no. 28:141-154.
"Couturat's and the Kneales' view that Leibniz's logic was extensional is examined and rejected. Some misreadings of Leibniz's texts by C. I. Lewis are exhibited. It is shown that for Leibniz "ens" does not mean "existens" but "possible". O'Briant's reply to Parkinson's intensional reading of Leibniz is rejected, and an attempt is made to ground Leibniz's intensional logic in his ontology of possible worlds and entities."
72. Imaguire, Guido. 2006. "A Crítica De Russell À Concepção Leibniziana Das Relações." *Manuscrito.Revista Internacional de Filosofia* no. 29:153-183.
"Against the monistic conception of relations that he imputed to Leibniz, Russell defended the reality, externality and irreducibility of relations. For Russell, relations are objective and not merely mental entities; they are not always essential to the individuation of an entity; and propositions of the relational form cannot be reduced to subject-predicate propositions. My primary aim in this article is the analysis of Russell's arguments for this triple thesis. We can say that Russell was primarily concerned with issues of logic, and because of this misunderstood Leibniz's metaphysical perspective."
73. Ishiguro, Hidé. 1972. "Leibniz's Theory of the Ideality of Relations." In *Leibniz. A Collection of Critical Essays*, edited by Frankfurt, Harry, 191-213. New York: Doubleday.
74. ———. 1981. *Contingent Truths and Possible Worlds*. Vol. Leibniz. Metaphysics and philosophy of science. London: Oxford University Press.
75. ———. 1990. *Leibniz's Philosophy of Logic and Language*. Cambridge: Cambridge University Press.

Second revised edition.

First edition Lodon, Duckworth, 1972.

76. ———. 2005. "Leibniz Et La Distinction Frégéenne Entre "Sens" Et "Référence"." In *Leibniz Et Les Puissances Du Langage*, edited by Berlioz, Dominique and Nef, Frédéric, 201-210. Paris: Vrin.
77. Kaehler, Klaus Erich. 1989. *Leibniz' Position Der Rationalität. Die Logik Im Metaphysischen Wissen Der "Natürlichen Vernunft"*. Freiburg: Alber.
78. Kalinowski, Georges. 1977. "La Logique Juridique De Leibniz." *Studia Leibnitiana* no. 9:168-189.

"En fait, Leibniz a apporté à la logique juridique une double contribution. D'une part, il a oeuvré à la manière de ses devanciers et contemporains (Everardus, Freigius, Otto, Schickhardus, Vigelius, etc.) en formulant des règles d'interprétation juridique, en particulier les règles de solution des cas difficiles ("*de casibus perplexis*") et les règles à appliquer aux dispositions sous condition ("*de conditionibus*"). De l'autre, il fait figure de novateur et de précurseur en découvrant les fondements logiques des inférences juridiques ("*de legum interpretatione, rationibus, applicatione, systemate*"), en particulier les principales thèses de la logique des normes ("*elementa juris naturalis*")."
79. Kalinowski, Georges, and Gardies, Jean-Louis. 1974. "Un Logicien Deontique Avant La Lettre: Gottfried Wilhelm Leibniz." *Archiv für Rechts und Sozialphilosophie* no. 60:79-112.

"In their introduction the authors sketch the story of Robert Blanché's rediscovery of Leibniz' texts containing his logic of norms. Then G. Kalinowski analyses the *Theoremata quibus combinantur iuris modalia inter se* (he draws from them Leibniz' theory of opposition of deontic statements, based on the analogy between these statements and the modal ones) and J.-L. Gardies studies the *Theoremata quibus combinantur iuris modalibus logicis*."

80. Karofsky, Amy. 1999. "The Primitiveness of Leibnizian Alethic Modalities." *History of Philosophy Quarterly* no. 16:297-320.
81. Kauppi, Raili. 1960. "Über Die Leibnizsche Logik Mit Besonderer Berücksichtigung Des Problems Der Intension Und Extension." *Acta Philosophica Fennica* no. 12. Reprint: New York, Garland, 1985
82. ———. 1968. "Substitutivity *Salva Veritate* in Leibniz." *Ratio* no. 10:141-149.
"Problems concerning substitutivity are discussed in the light of examples from Leibniz, Frege, Carnap, Mates, Putnam. Leibniz reduced truth to interconceptual relations, which accordingly must not be changed by substitutions *salva veritate*. In modern logic "salva veritate" has an entirely different meaning. Attempts to formulate conditions of substitutivity, applicable e. g. to belief sentences of everyday language, in terms of intensional isomorphy, are criticized. Their failing depends on the fact that a substitution *salva veritate* in such a sentence presupposes empirical knowledge, not expressed by this sentence, about the linguistic usage, the knowledge, the opinions, etc. of the person concerned."
83. Knapp, Hans Georg. 1978. "Notwendige Und Zufällige Wahrheiten: Die Summierung Unendlicher Reihen Im Lichte Der Leibnizschen Begriffslogik." *Studia Leibnitiana* no. 10:60-86.
"I want to show that Leibnizian mode to thinking is based in a kind of logic of concepts. As an example, his first attempt to sum infinite series is analyzed. The question concerning the justification of the Leibnizian syllogism leads to the analysis of the fundamental definition. A conclusion obtained by "real-definitions" ("realdefinitionen") is logically justified. It is classified as a "vernunftwahrheit." A conclusion obtained by paradoxical definitions ("paradoxe definitionen") is classified as a "tatsachenwahrheit." according to Leibniz it has validity by contingency. A

conclusion obtained by "impossible definitions" is logically unjustified."

84. Kneale, William, and Kneale, Martha. 1962. *The Development of Logic*. Oxford: Clarendon Press. Reprinted 1975 with corrections.
See: Chapter V. *Logic after the Renaissance*: § 2. *The interests of Leibniz* (p. 320-336) and § 3. *Leibniz's Calculus de Continentibus et Contentis* (pp. 336-345).
85. Knecht, Herbert. 1981. *La Logique Chez Leibniz. Éssai Sur Le Rationalisme Baroque*. Lausanne: L'Age d'Homme.
86. Krajewski, Wladyslaw. 2001. "Aristotelian and Leibnizian Concepts of Possibility." In *Aristotle and Contemporary Science. Vol. 2*, edited by Sfendoni-Mentzou, Demetra, Hattiangadi, Jagdish and Johnson, David M., 51-56. Bern: Peter Lang.

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Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 23-46.
"Against the prevailing opinion expressed, e.g., by L. Couturat it is argued that the so-called "intensional" point of view which Leibniz mostly preferred to the nowadays usual extensional interpretation is neither "*confuse et vague*" nor may it be made responsible for the alleged "*échec final de*

son système" (Couturat, *La logique de Leibniz*, 387). We present a precise definition of an "intensional" semantics which reflects the Leibnizian ideas and which may be proven to be equivalent to standard extensional semantics."

4. ———. 1984. "'Unbestimmte Begriffe' Bei Leibniz." *Studia Leibnitiana* no. 16:1-26.

Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 99-131.

"In many of his logical writings, G. W. Leibniz makes use of two kinds of symbols: while a, b, c,...stand for certain determinate or definite concepts, x, y, z,...are referred to as "indefinite concepts." We investigate the various roles played by these variables and show: I) that their most important function consists in serving as (hidden) quantifiers; II) that Leibniz's elliptic representation of the quantifiers (both universal and existential) by means of two sorts of "indefinite concepts" leads to certain difficulties; III) that despite these problems Leibniz anticipated the most fundamental logical principles for the quantifiers and may thus be viewed as a forerunner of modern predicate logic."

5. ———. 1984. "Leibniz Und Die Boolesche Algebra." *Studia Leibnitiana* no. 16:187-203.

Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 47-64.

"It is well known that in his logical writings Leibniz typically disregarded the operation of (conceptual) disjunction, confining himself to the theory of conjunction and negation. Now, while this fact has been interpreted by Couturat and others as indicating a serious incompleteness of the Leibnizian calculus, it is shown in this paper that actually Leibniz's conjunction-negation logic, with '*est ens*', i.e., 'is possible' as an additional (although definable) logical operator, is provably equivalent (or isomorphic) to Boolean algebra. Moreover, already in the "Generales inquisitiones" of 1686 Leibniz had established all basic principles that are

- necessary for a complete axiomatization of "Boolean" (or better: Leibnizian) algebra. In this sense Leibniz should be acknowledged as the true inventor of the algebra of sets."
6. ———. 1986. "'Non Est' Non Est 'Est Non'. Zu Leibnizens Theorie Der Negation." *Studia Leibnitiana* no. 18:1-37.
Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 133-179.
Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. "Leibniz's development of a "calculus universalis" stands and falls with his theory of negation. During the entire period of the elaboration of the algebra of concepts, L1, Leibniz had to struggle hard to grasp the difference between propositional and conceptual negation. Within the framework of (scholastic) syllogistic, this difference seems to disappear because '*omne a non b*' may be taken to be equivalent to '*omne a est non-b*'. Within the "universal calculus", however, the informal quantifier expression '*omne*' is to be dropped. Accordingly, '*a non est b*' expresses only the propositional negation of (the U A) '*a est b*' and is hence logically weaker than (the U N) '*a est non-b*'. Besides Leibniz's cardinal error of confusing propositional and conceptual negation the following issues are dealt with in this paper: "aristotelian" vs "scholastic syllogistic; metalinguistic theory of the truth-predicate; individual-concepts vs concepts in general."
 7. ———. 1987. "Leibniz's Calculus of Strict Implication." In *Initiatives in Logic*, edited by Srzednicki, Jan, 1-35.
Dordrecht: Reidel.
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9. ———. 1989. "Mögliche Individuen Und Mögliche Welten. Eine Begriffslogische Axiomatisierung Der Leibnizschen Ontologie." In *Leibniz. Tradition Und Aktualität. V. Internationaler Leibniz-Kongress (Hannover, 14-19 November 1988)*, 464-470. Hannover: Gottfried Wilhelm Leibniz Gesellschaft.
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13. ———. 1990. *Das System Der Leibnizschen Logik*. Berlin: de Gruyter.
Inhalt: Vorwort VII; Danksagung XIII; Leseanweisung XV-XVI; 1. Syllogisti 1; 2. Die Algebra der Begriffe 28; 3. Quantorenlogik 84; 4. Syllogistik im allgemeinen Kalkül 122; 5. Satzlogik 159; 6. Metaphysik 178; Verzeichnis der Formeln 213; Verzeichnis der Zitate 225; Sachverzeichnis 231-235.
14. ———. 1990. "Precis of the History of Logic from the Point of View of the Leibnizian Calculus." In *Estudios De Historia De La Lógica. Actas Del Ii Simposio De Historia De La Lógica, Universidad De Navarra, Pamplona, 25-27 De*

Mayo De 1987, edited by Angelelli, Ignacio and D'Ors, Angel, 13-38. Pamplona: Ediciones Eunate.

15. ———. 1990. "On Leibniz's Essay '*Mathesis Rationis*' (Critical Edition and Commentary)." *Topoi* no. 9:29-59.
16. ———. 1991. "Leibniz on Privative and Primitive Terms." *Theoria.Revista de Teoria, Historia y Fundamentos de la Ciencia* no. 6:83-96.

"We first present an edition of the manuscript LH VII, B2 39, in which Leibniz develops a new formalism in order to give rigorous definitions of positive, of private, and of primitive terms. This formalism involves a symbolic treatment of conceptual quantification which differs quite considerably from Leibniz's "standard" theory of "indefinite concepts" as developed, e.g., in the "General Inquiries". In the subsequent commentary, we give an interpretation and a critical evaluation of Leibniz's symbolic apparatus. It turns out that the definition of privative terms and primitive terms lead to certain inconsistencies which, however, can be avoided by slight modifications."
17. ———. 1991. "Leibniz on Ens and Existence." In *Existence and Explanation. Essays Presented in Honor of Karel Lambert*, edited by Lambert, Karel, Spohn, Wolfgang, Fraassen, Bas C.van and Skyrms, Bryan, 59-75. Dordrecht: Kluwer.

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18. ———. 1995. "Frege Und Leibniz." In *Logik Und Mathematik. Frege-Kolloquium Jena 1993*, edited by Ingolf, Max and Stelzner, Werner, 82-92. Berlin: de Gruyter.

Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 65-74.

"In the essay "*Booles rechnende Logik und die Begriffsschrift*" of 1880 and in the posthumously published paper "*Ueber den Zweck der Begriffsschrift*" Gottlob Frege had briefly discussed the main elements of Leibniz's logic. By way of comparison with Boole's logic, Frege came to

interpret Leibniz's expressions *ens'* and *non ens'* as equivalent to Boole's 1' (= universe of discourse) and 0' (= empty domain), respectively. This interpretation is not fully warranted, however. A closer examination of Leibniz's formal representation of the categorical forms in terms of *ens'* and *non ens'* reveals that *A est ens'* does not mean that (the extension of) concept A is equal to 1. Instead it only says that (the extension of) A is nonempty or--from an "intensional" point of view--that concept A is self-consistent."

19. ———. 2000. "Wenn 0=1, Dann Ist Die, 'Reine Inhaltslogik' Unmöglich. Bemerkungen Zu Liskes Kritik Der Leibnizschen Begriffstheorie." *Studia Leibnitiana* no. 32:105-116.

"In a 1994 paper entitled *Ist eine reine Inhaltslogik möglich?*, M. Liske attempted to show that Leibniz's theory of intensional concepts suffers from a serious inadequacy. Liske begins by defining the intension of a concept in two slightly different ways. *Broadly* conceived, *Int*(A) is the set of *all* concepts B which are contained in A, while in a *narrow* sense, *Int*(A) consists of all such B other than A itself."

20. ———. 2000. "Guilielmi Pacidii Non Plus Ultra, Oder: Eine Rekonstruktion Des Leibnizschen Plus-Minus-Kalküls." *Logical Analysis and History of Philosophy* no. 3:71-118. Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 229-279.

"In the first part of this paper a short review of the recently published 4th volume of Series 6 (*Philosophical Writings*) of the Akademie-Ausgabe of Leibniz's *Sämtliche Schriften und Briefe* is given. This 3,000-page volume was edited by the Leibniz-Forschungsstelle in Münster, Germany. It contains unsurpassable, text-critical versions of more than 500 pieces which Leibniz composed between 1677 and 1690. One major topic dealt with in these essays is "Scientia Generalis, Characteristica, Calculus Universalis". Here we

find in particular various fragments of a logical calculus that Leibniz developed around 1687. The main part of this paper presents a detailed reconstruction of this so-called "plus-minus-calculus" which, by way of its somewhat unorthodox operators of "addition" and "subtraction", inclusion and identity, "communication", "commune" and "nothing", provides an interesting alternative to the Boolean algebra of sets."

21. ———. 2001. "Zur Logik Alethischer Und Deontischer Modalitäten Bei Leibniz." In *Zwischen Traditioneller Und Moderner Logik. Nichtklassische Ansätze*, edited by Stelzner, Werner and Stöckler, Manfred, 335-351. Paderborn: Mentis.
Reprinted in revised form in: W. Lenzen - *Calculus Universalis* (2004) pp. 309-324.
22. ———. 2003. "Grundfragen Des Logischen Kalküls. Eine Art Rezension Von F. Schupp (Hrg.), G. W. Leibniz, *Die Grundlagen Des Logischen Kalküls*." *History and Philosophy of Logic* no. 24:141-162.
23. ———. 2004. *Calculus Universalis. Studien Zur Logik Von G. W. Leibniz*. Paderborn: Mentis Verlag.
Inhaltverzeichnis: Vorwort 5; 1. Leibniz und die (Entwicklung der) moderne(n) Logik 15; 2 Zur extensionalen und "intensionalen" Interpretation der Leibnizschen Logik 23; 3. Leibniz und die Boolesche Algebra 47; 4 Frege und Leibniz 65; 5 'Ens' und 'existens' bei Leibniz 75; 6. "Unbestimmte Begriffe" bei Leibniz 99; 7 'Non est' non est 'est non' - Zu Leibniz' Theorie der Negation 133; 8. Zur Einbettung der Syllogistik in Leibniz' "Allgemeinen Kalkül" 181; 9. Arithmetizismus, oder: Wie Leibniz die Mengenlehre aus dem kleinen Einmaleins ableitet 217; 10. Guilielmi Pacidii Non plus ultra 229; 11. Leibni' Kalkül der strikten Implikation 281; 12. Zur Logik alethischer und deontischer Modalitäten bei Leibniz 309; 13. Mögliche Individuen und mögliche Welten - Eine begrifflogische Reknstruktionen von Leibniz' Ontologie 325; 14. Leibniz'

ontologischer Gottesbeweis und das Problems de
unmöglichen Dinge 331; 15 Anhänge 343;
Literaturverzeichnis 367; Personenverzeichnis 373;
Sachverzeichnis 376-380.

"This book is a collection of essays published by the author in the long run of 1 about 20 years and is centered on the reconstruction of Leibniz's logical calculi. All the essays have been revised for the present edition and some of them constituted the background for Lenzen's first monograph on Leibniz's logic (*Das System der Leibnizschen Logik*, Berlin-New York, De Gruyter, 1990). A feature common to all these essays is the vindication of the relevance and originality of Leibniz's logical achievements. Lenzen manifests strong dissatisfaction with the evaluations of Leibniz's logic previously offered by interpreters like Louis Couturat, Clarence I. Lewis, Karl Dürr, William and Martha Kneale, and states that till now Leibniz's results in the field of logic have been widely underestimated (p. 22).

The book contains a careful and detailed examination of almost all Leibniz's papers on the logical calculus and it is based on the knowledge of a wide range of texts unknown (or only partially known) to previous interpreters. Lenzen's acquaintance with the entire corpus of Leibniz's logical texts (including a number of relevant manuscripts) is impressive. Some chapters of the book in particular contain very solid and useful logical analyses. Chapter 7, for instance, includes the most profound account of Leibniz's theory of negation I ever read. Chapter 8 presents in a very clear way Leibniz's attempt to reduce traditional syllogistic to a calculus based on logical inclusion between terms. Chapter 14 is devoted to Leibniz's a priori proof of the existence of God and presents the first edition of an important manuscript on the proof. On chapters 3 and 5 a series of convincing reasons are given to argue that Leibniz's concept of *ens* does not have to be considered a constant in the logical calculus. In brief: this work discusses a wide range of topics in such a clear and

learned way that it will surely become a reference book for scholars interested in the study of Leibniz's logical papers in the forthcoming years."

From the Review of the book by Massimo Mugnai - *The Leibniz Review* - vol. 15, 2005, pp. 169-181

24. ———. 2004. "Leibniz's Logic." In *The Rise of Modern Logic: From Leibniz to Frege*, edited by Gabbay, Dov and Woods, John, 1-83. Amsterdam: Elsevier.
Handbook of the History of Logic: Vol. 3.
25. ———. 2004. "Logical Criteria for Individual (Concepts)." In *Individuals, Minds and Bodies: Themes from Leibniz*, edited by Carrara, Massimiliano, Nunziante, Antonio-Maria and Tomasi, Gabriele, 87-107. Stuttgart: Steiner.
Studia Leibnitiana. Sonderhefte 32
26. ———. 2005. "Leibniz on Alethic and Deontic Modal Logic." In *Leibniz Et Les Puissances Du Langage*, edited by Berlioz, Dominique and Nef, Frédéric, 341-362. Paris: Vrin.
27. Levey, Samuel. 2002. "Leibniz and the Sorites." *Leibniz Review* no. 12:25-49.
28. Lewis, Clarence Irving. 1918. *A Survey of Symbolic Logic*. Berkeley: University of California Press.
See Chapter I. *The development of symbolic logic* pp. 1-117.
(On Leibniz pp. 5-18 and *Appendix. Two fragments from Leibniz* pp. 373-388).
Reprinted New York, Dover Publishing 1960, with the omission of chapter V and VI.
29. Madouas, Sébastien. 1999. "L'adam Vague Et La Constitution Des Mondes Possibles: Une Pensée Modale De L'individu." In *L'actualité De Leibniz: Les Deux Labyrinthes*, edited by Berlioz, Dominique and Nef, Frédéric, 363-388. Stuttgart: Franz Steiner.
30. Marchlewitz, Ingrid, and Heinekamp, Albert, eds. 1990. *Leibniz' Auseinandersetzung Mit Vorgängern Und Zeitgenossen*. 27 ed.
Studia Leibnitiana. Sonderheft.
31. Martin, Gottfried. 1964. *Leibniz: Logic and Metaphysics*. Manchester: Manchester University Press.

- German edition: *Leibniz. Logik und Metaphysik* - Berlin, de Gruyter 1967; reprint: New York, Garland, 1985
32. Mates, Benson. 1968. "Leibniz on Possible Worlds." In *Logic, Methodology, and Philosophy of Science Iii.*, edited by Rootselaar, Bob van and Staal, Johan Frederik, 507-529. Amsterdam: North-Holland.
Reprinted in: Harry Frankfurt (ed.) - *Leibniz. A collection of critical essays* - New York, Doubleday, 1972, pp. 335-364 and in: Roger Woolhouse (ed.) - *Gottfried Wilhelm Leibniz. Metaphysics and its foundations* - *Gottfried Wilhelm Leibniz. Critical assessments* - Vol. I - New York, Routledge, 1994, pp. 208-229.
33. ———. 1979. "The *Lingua Philosophica*." *Studia Leibnitiana.Sonderheft* no. 8:59-66.
34. McCadden, Carlos. 2001. "Leibniz's Principle of Contradiction Is Not What Aristotle Called the Most Certain of All Principles." *Aletheia.An International Journal of Philosophy*:469-485.
"The object of this article is to show that the principle of contradiction in Leibniz is not the same principle that Aristotle called "the most certain of all principles". The five parts of this study are as follows: the first part shows the importance of the problem; the second is an *exposé* of Aristotle's thought on "the most certain of all principles." The third part treats of the principle of contradiction according to Leibniz; the fourth compares the thought of the two philosophers and draws some conclusions about the ramifications of their differences; the fifth part is a summary."
35. Mertz, Donald. 1980. "Leibniz's Monadic Treatment of Relations." *Auslegung* no. 7:256-269.
"Continuing in the line of Ishiguro and Hintikka, this paper explicates further the form of Leibniz's brief logical/syntactical program for relations, and this is then contrasted with his metaphysical/semantical treatment of them. The analysis shows a similar though not identical

treatment of relations under both programs. The similarity lies in Leibniz's treating multi-term relations as one-term, monadic predicates with all other term-places being either instantiated, or bound by existential quantifiers, depending upon the program. Both programs require Leibniz to introduce a new non-truth-functional, yet "relational" connective between propositions."

36. Mondadori, Fabrizio. 1975. "Leibniz and the Doctrine of Inter-World Identity." *Studia Leibnitiana* no. 7:22-57. Reprinted in: R. Woolhouse (ed.) - *Gottfried Wilhelm Leibniz. Critical Assessments*, Volume 1 - New York, Routledge, 1994, pp. 256-289
37. ———. 2003. "Leibniz on Compossibility: Some Scholastic Sources." In *The Medieval Heritage in Early Modern Metaphysics and Modal Theory, 1400-1700*, edited by Friedman, Russell L. and Nielsen, Luge O., 309-338. Dordrecht: Kluwer.
38. Moriconi, Enrico, and Offenberger, Niels. 1984. "Zur Frage Der Iv Syllogistischen Figur in Der *Dissertatio De Arte Combinatoria*: Eine Jugendsunde Leibnizens?" *Studia Leibnitiana* no. 16:212-216.
 "This paper is a discussion of Leibniz's juvenile thesis according to which "quarta figura aeque bona est ac ipsa prima; imo si modo, non praedicationis, ut vulgo solent, sed subjectionis, ut aristoteles, eam enunciemus, ex IV fiet I et contra" (*Dissertatio de Arte Combinatoria*, 25). The authors maintain that that thesis is syllogistically untenable, since the reduction device Leibniz suggested does not change the logical function of termini, but introduces a difference only from a grammatical point of view."
39. Mugnai, Massimo. 1973. "Bertrand Russell E Il Problema Delle Relazioni in Leibniz." *Rivista di Filosofia* no. 64:356-362.
40. ———. 1976. *Astrazione E Realtà. Saggio Su Leibniz*. Milano: Feltrinelli.
41. ———. 1978. "Bemerkungen Zu Leibniz' Theorie Der Relationen." *Studia Leibnitiana* no. 10:2-21.

"Many of the problems traditionally related to the interpretation of Leibniz' theory of relations may be seen in a better light considering essentially two factors: 1) the different plans (ontological, metaphysical, psychological and logical-linguistic) implied by Leibniz reflections on the subject; 2) the reference to scholastic and late-scholastic texts read or consulted by Leibniz. Relations for Leibniz are, from a metaphysical point of view, denominations only seemingly external, they are in reality "denominationes intrinsecae", and are founded on the general connection of all things. From a psychological point of view they are abstract entities that our mind builds by resemblance. From an ontological point of view they are individual accidents inherent to the substances. From a logical-linguistic point of view they are abstract structures that connect the one to the other at least two subjects. The propositions in which they appear, as for example the proposition "Paris loves Helen" are transformed by Leibniz in equivalent propositions joined by operators, which in medieval logic were known as "termini reduplicantes" (terms which define mostly intensional contexts)."

42. ———. 1979. "Contesti Intensionali E Termini Reduplicativi Nella *Grammatica Rationalis* Di Leibniz." *Rivista di Filosofia* no. 70:32-44.
43. ———. 1990. "A Systematical Approach to Leibniz's Theory of Relations and Relational Sentences." *Topoi* no. 9:61-81.
44. ———. 1992. *Leibniz's Theory of Relations*. Stuttgart: Franz Steiner.
45. Nef, Frédéric. 1999. "La Philosophie Modale De Leibniz Est-Elle Cohérente?: Essai Sur Des Problèmes D'interprétation De Notions Modales Leibniziennes À Propos Du Mythe De Sextus Et De L'oracle De Kégila." In *L'actualité De Leibniz: Les Deux Labyrinthes*, edited by Berlioz, Dominique and Nef, Frédéric, 277-305. Stuttgart: Franz Steiner.
46. ———. 2000. *Leibniz Et Le Langage*. Paris: Presses Universitaires de France.

47. ———. 2005. "Accidents Et Relations Individuelles Che Leibniz. Analyse Linguistique Et Formes Logiques." In *Leibniz Et Les Puissances Du Langage*, edited by Berlioz, Dominique and Nef, Frédéric, 125-139. Paris: Vrin.
48. Nelson, Alan. 2005. "Leibniz on Modality, Cognition, and Expression." In *A Companion to Rationalism*, edited by Nelson, Alan. Malden: Blackwell.
49. Noordraven, Andreas. 2001. "Leibniz' onto-Logik Und Die Transzendente Logik Kants." In *Kant Und Die Berliner Aufklärung. Akten Des 9. Internationalen Kant-Kongresses. Band V: Sektionen Xv-Xviii*, edited by Gerhardt, Volker, Horstmann, Rolf-Peter and Schumacher, Ralph, 55-64. Berlin: de Gruyter.
50. O'Briant, Walter H. 1967. "Leibniz's Preference for an Intensional Logic." *Notre Dame Journal of Formal Logic* no. 8:254-256.
 "G. H. R. Parkinson's contention that Leibniz was led to interpret his logic intensionally because of his desire to deny existential import to universal propositions is shown to be defective because (i) it disregards evidence such as that from '*General investigations*' (1686) that Leibniz never adopted a definitive attitude on the issue of existential import and (ii) misinterprets Leibniz's statement that "concepts do not depend upon the existence of individuals". The author claims that Leibniz's preference is based primarily on his doctrine that the basic relation between concepts in a proposition is that of containment."
51. Padilla-Gálvez, Jesús. 1991. "Las Lógicas Modales En Confrontación Con Los Conceptos Básicos De La Lógica Modal De G. W. Leibniz." *Theoria.Revista de Teoria, Historia y Fundamentos de la Ciencia* no. 6:115-127.
 "In the first section we examine Leibniz's "termini necessitas-possibilitas". In the second section we propose a minimal modal logic, L (subscript) LM, arises from the addition of modal principles. In the final section we examine his complex study towards the interpretation of modal language in the possible worlds. The resulting interplay between the

minimal modal logic and the possible world perspective is one of the main charms of semantics."

52. ———. 2001. "Modalisatoren Und Mögliche Welten in Den Logisch-Semantischen Untersuchungen Um 1686." In *Nihil Sine Ratione. Mensch, Natur Und Technik Im Wirken Von G. W. Leibniz. Band 2*, edited by Poser, Hans, Asmuth, Christoph, Goldenbaum, Ursula and Li, Wenchao, 926-933. Hannover: Gottfried-Wilhelm-Leibniz-Gesellschaft. Akten der VII. Internationaler Leibniz-Kongress (Berlin, 10. - 14. September 2001)
53. Parkinson, George H. 1965. *Logic and Reality in Leibniz's Metaphysics*. Oxford: Clarendon Press.
Reprint: New York, Garland 1985
54. ———. 1995. "Philosophy and Logic." In *The Cambridge Companion to Leibniz*, edited by Jolley, Nicholas, 199-223. Cambridge: Cambridge University Press.
55. Patzig, Günther. 1969. "Leibniz, Frege Und Die Sogennante 'Lingua Characteristica Universalis'." *Studia Leibnitiana. Sonderheft*:103-112.
Akten des Internationale Leibniz-Kongresses Hannover 14-19 November 1966 - Vol. 3: Erkenntnislehre, Logik, Sprachphilosophie, Editionsberichte
56. Peckhaus, Volker. 1997. *Logik, Mathesis Universalis Und Allgemeine Wissenschaft. Leibniz Und Die Wiederentdeckung Der Formalen Logik Im 19. Jahrhundert*. Berlin: Akademie Verlag.
Contents: Vorwort VII-VIII; 1. Einleitung 1; 2. Die Idee der *mathesis universalis* bei Leibniz 25; 3. Die frühe Rezeption Leibnizscher *mathesis universalis* und Logik 64; 4. Die "logische Frage" und die Entdeckung der Leibnizschen Logik 130; 5. Leibniz und die englische Algebra der Logik 185; 6. Ernst Schröder: "Absolute Algebra" und Leibnizprogramm 233; 7. Schluss 297; Verzeichnisse 309-412.
57. ———. 2002. "Die Entdeckung Der Leibnizschen Logik." In *Medium Mathematik. Anregungen Zu Einem Interdisziplinären Gedankenaustausch. Band 1*, edited by

Löffladt, Günter and Toepell, Michael, 149-169. Hildesheim: Franzbecker.

58. ———. 2004. "Calculus Ratiocinator Versus Characteristica Universalis? The Two Traditions in Logic, Revisited." *History and Philosophy of Logic* no. 25:3-14.
59. Peña, Lorenzo. 1991. "De La Logique Combinatoire Des 'Generales Inquisitiones' Aux Calculs Combinatoires Contemporains." *Theoria.Revista de Teoria, Historia y Fundamentos de la Ciencia* no. 6:129-159.

"In his 1686 essay, Leibniz undertook to reduce sentences to noun-phrases, truth to being. Such a reduction arose from his equating proof with conceptual analysis. Within limits, Leibniz's logical calculus provides a reasonable way of surmounting the dichotomy, thus allowing a reduction of hypothetical to categorical statements. However it yields the disastrous result that whenever A is possible and so is B there can be an entity being both A and B. Yet, Leibniz was the forerunner of twentieth century combinatory logic, which (successfully!) practices -- sometimes for reasons not entirely unlike Leibniz's own grounds -- reductions of the same kinds he tried to carry out."
60. Plaisted, Dennis. 2002. *Leibniz on Purely Extrinsic Denominations*. Rochester: University of Rochester Press.
61. Pombo, Olga. 1987. *Leibniz and the Problem of a Universal Language*. Münster: Nodus Publikationen.
62. ———. 1990. "The Leibnizian Theory of Representativity of the Sign." In *History and Historiography of Linguistics. Vol. II*, edited by Niederehe, Hans-Joseph and Koerner, Konrad, 447-459. Philadelphia: John Benjamins.
63. ———. 1990. "Comparative Lines between Leibniz's Theory of Language and Spinoza's Reflexions on Language Themes." *Studia Spinozana* no. 6:147-177.
64. ———. 1996. "Leibnizian Strategies for the Semantical Foundation of the Universal Language." In *Im Spiegel Des Verstandes. Studien Zu Leibniz*, edited by Dutz, Klaus D. and Gensini, Stefano, 161-171. Münster: Nodus Publikationen.

65. ———. 1998. "La Théorie Leibnizienne De La Pensée Aveugle En Tant Que Perspective Sur Quelques-unes Des Apories Linguistiques De La Modernité." *Cahiers Ferdinand Saussure* no. 51:63-75.
66. Poser, Hans. 1969. "Zum Logischen Und Inhaltlichen Zusammenhang Der Modalbegriffe Bei Leibniz." *Kant Studien* no. 60:436-451.
67. Rabouin, David. 2005. "Logique, Mathématique Et Imagination Dans La Philosophie De Leibniz." *Corpus.Revue de Philosophie* no. 49:165-198.
68. Rauzy, Jean-Baptiste. 1995. "'Quid Sit Natura Prius'? La Conception Leibnizienne De L'ordre." *Revue de Métaphysique et de Morale* no. 98:31-48.
 "It is well known that Leibniz's logic is grounded in the inherence of the predicate in the subject and in the compossibility of notions. It naturally stresses, therefore, relations of equivalence, rather than of order. Nevertheless, Leibniz provided a logical analysis of order, i.e., an account of the meaning of "prior", "subsequent", "concomitant". His account comprises three points: 1) Given two beings, the one that is more simple (i.e., the one whose analysis requires less operations of the mind) is prior by nature ("natura prius"); hence, concomitant ("simul") being. 2) The degree of composition of being corresponds to its degree of perfection. Hence, prior beings being simpler, subsequent beings are more perfect. 3) Given two beings such that one is simpler and the other more perfect, they differ temporally if they also contradict each other; conversely, two compossible beings contradict each other if, and only if, they are not simultaneous (i.e., if they do not belong to the same "state of the universe"). It will be shown that this relation makes it possible to characterize the axiomatic order of incomplete notions (in the field of the "mathesis universalis"). But the attempt to explain the terms prius, posterius and simul in a metaphysical manner, i.e., by laying

the stress on the order among substances, raises grave philosophical problems."

69. ———. 2001. *La Doctrine Leibnizienne De La Verité. Aspects Logiques Et Ontologiques*. Paris: Vrin.
"Jean-Baptiste Rauzy writes here on Leibniz's theory of truth, construed broadly, mostly in Leibniz's earlier periods (to 1686). He focuses mostly on Leibniz's logical theory, particularly as given in the logical papers, published only with Couturat and others, in 1901 and following. Unlike a lot of the secondary literature, Rauzy's book gives much detail about how Leibniz's various logical models work out and apply to more general issues such as the reduction of relations, the ontological square (first given in Aristotle's Categories 2), haecceity, and the problem of universals. In addition to using the full opera of Leibniz, Rauzy incorporates a wide range of sources into his discussion: the secondary literature on Leibniz; Leibniz's contemporaries and predecessors, including not merely those like Malebranche and Hobbes, but also Marius Nizolius, Joachim Jungius, Francisco Suarez, and Thomas Aquinas. For he contends that, as in metaphysics, Leibniz in logic looks to the past, despite what some have thought (pp. 10, 14-16)." (from the review by Allan Bäck - *Review of Metaphysics* - March 2003)
70. Rescher, Nicholas. 1954. "Leibniz's Interpretation of His Logical Calculi." *Journal of Symbolic Logic* no. 19:1-13. Reprinted in: N: Rescher - *Nicholas Rescher collected papers. Vol. 10. Studies in the history of logic* - Frankfurt, Ontos Verlag, 2006, 141-157
71. Rijen, Jeroen van. 1989. "Some Misconceptions About Leibniz and the Calculi of 1679." *Studia Leibnitiana* no. 21:196-204.
"In the April papers of 1679 Leibniz expounds an arithmetical model of the logic of categorical sentences. In later works one hardly finds any remaining trace of this project. This fact gave rise to the question why Leibniz

abandoned his views of 1679. Several answers have been given. In this paper it is shown that all these answers are wrong and, moreover, that the question itself is pointless. It is argued that, although the arithmetical calculi are defective, Leibniz never abandoned them. Instead, he looked upon them as equivalent alternatives to his later deduction-theoretic representations of the same logic."

72. Risse, Wilhelm. 1969. "Die *Characteristica Universalis* Bei Leibniz." *Studi Internazionali di Filosofia* no. 1:107-116.
73. ———. 1969. "Zur Klassifizierung Der Urteile Und Schlüsse Durch Leibniz." *Studia Leibnitiana* no. 1:23-53.
74. Robinet, André. 2000. "Leibniz Et La *Logique* De Port-Royal." *Revue des Sciences Philosophiques et Théologiques* no. 84:69-81.

"L'oeuvre de Leibniz comporte de multiples impacts, soit des circonstances historiques qui ont présidé à la composition de la *Logique*, soit au sujet des analyses de contenu. Au fond, l'œuvre combinatoire et la requête vers une mathesis divina commence (le *De Arte combinatoria* est de 1666) dès les premières éditions de l'*Art de penser* qui s'en tient à la *mathesis universalis*, faute de s'intéresser aux structures internes de l'incompréhensible que l'infinitisme permet d'aborder intelligiblement. Aussi le choc est-il constant à travers toutes les relations épistolaires entre Leibniz et Arnauld. "

75. ———. 2002. "Lexicographie Et Caractéristique Universelle." In *Neuzeitliches Denken. Festschrift Für Hans Poser Zum 65. Geburtstag*, edited by Abel, Günter, Engfer, Hans-Jürgen and Hubig, Christoph, 163-172. Berlin: de Gruyter.

"Les questions leibniziennes relatives à la 'caractéristique universelle' ont été amplement étudiées dans les travaux publiés par H. Poser. Est-ce que la lexicographie statistique, telle qu'elle s'est développée au cours de notre *Informatikzeitalter*, est susceptible de contribuer à l'édification du grand projet de Leibniz? Ces procédures

linguistiques, hautement mathématiques et technologiques, sont survenues dans la lignée même des objectifs dégagés à partir du calcul binaire, des calculs statistiques et probabilitaires, dans la direction d'une simulation cybernétique des procédures pensantes. La machine à calculer en fonction de la table pythagoricienne des nombres ne pouvait être qu'une approximation de ce qui deviendrait réalisable à partir de la *Dualzahltheorie*. Mais une table combinatoire des concepts était d'une toute autre envergure et exigeait d'abord qu'on dominât la genèse et la composition des langues pour en venir à une logique des pensées. Il fallait, pour cela, résoudre d'abord le problème du signifiant, corollairement au problème des signes qui seraient mis en regard. La signification devenait ainsi l'étude du rapport possible entre un signifié *de* nature réelle ou conceptuelle et un signifiant naturel ou artificiel. Indépendamment des considérations concernant les langues vernaculaires et leurs éventuelles correspondances (cf. des opérations leibniziennes comme '*pater noster*' ou 'langue commune'), Leibniz se meut à trois niveaux quand il approche la question de la caractéristique universelle: 1) inventer des procédures sémiotiques pour en rendre le contenu opérationnel; 2) dégager les notions-clés d'une sémantique générale; 3) examiner si, sur ce trajet constructif, intervient cette autre discipline scientifique leibnizienne qu'est la recherche d'une langue primitive. En un mot, est-ce que les procédures d'une caractéristique universelle convergent vers les fonctions qu'on peut observer dans la primitivité expressive du langage?"

76. Rochhausen, Rudolf. 1997. "Leibniz Und Die Einheit Von Logik, Kombinatorik Und Erkenntnis." In *Gottfried Wilhelm Leibniz. Wissenschaftliche Methoden Heute*, edited by Heinz, Melitta and Reiprich, Kurt, 21-34. Leipzig: Rohrbacher Kreis.
77. Roncaglia, Gino. 1988. "Modality in Leibniz' Essays on Logical Calculus of April 1679." *Studia Leibnitiana* no.

20:43-62.

78. Ross, George MacDonald. 1981. "Logic and Ontology in Leibniz." *Studia Leibnitiana*. Sonderheft no. 9:20-26.
79. Rossi, Jean-Gérard. 1997. "Sur Deux Types De Rapport Entre Sujets Et Prédicats Dans La Philosophie Leibnizienne." *Studia Leibnitiana* no. 29:103-111.
80. Rossi, Paolo. 1989. "The Twisted Roots of Leibniz' Characteristic." In *The Leibniz Renaissance*, 271-289. Firenze: Olschki.
81. ———. 2000. *Logic and the Art of Memory. The Quest for a Universal Language*. Chicago: University of Chicago Press. Translated from Italian with an introduction by Stephen Clucas.
First edition: *Clavis universalis. Arti mnemoniche e logica combinatoria da Lullo a Leibniz* - Napoli, Ricciardi, 1960;
Second revised edition: Bologna, Il Mulino, 1983.
See in particular Chapter VII. *The construction of a universal language* pp. 145-175 and VIII. *The sources of Leibni'z universal character* pp. 176-193
82. Royse, James R. 1980. "Leibniz and the Reducibility of Relations to Properties." *Studia Leibnitiana* no. 12:179-204.
"On the basis of his remarks concerning metaphysics and logic, the thesis that relations are reducible to properties has often been ascribed to Leibniz. Russell and others have opposed this thesis, primarily by reference to asymmetrical relations and several precise formulations of the thesis prove in fact to be false. However, Leibniz's ontology may be seen as justifying a version of type theory, in which one form of reducibility can be demonstrated. The method used here shows also how two monads, each possible in itself, are not able to exist together, and thus how impossibility can arise."
83. Russell, Bertrand. 1900. *A Critical Exposition of the Philosophy of Leibniz. With an Appendix of Leading Passages*. London: Routledge.

Second edition with a new preface 1937; reprint: New York, Cosimo Classics, 2008

84. Rutherford, Donald. 1988. "Truth, Predication and Complete Concept of an Individual Substance." In *Leibniz. Questions De Logique*, edited by Heinekamp, Albert, 130-144. Stuttgart: Steiner Verlag.
85. ———. 1995. "Philosophy and Language in Leibniz." In *The Cambridge Companion to Leibniz*, edited by Jolley, Nicholas, 224-269. Cambridge: Cambridge University Press.
86. Sainati, Vittorio. 1970. "Sulla Logica Leibniziana." *Filosofia* no. 21:221-258.
87. ———. 1986. "Leibniz E La Verità." *Teoria* no. 6:81-137.
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"The question of the possibility of a world-constitution by logical analysis (i.e., as to the extent the ontological problem of the explanation of the structure of the real world by logical means can be achieved) is exemplarily investigated

for two philosophers. Both of them try to the same extent to solve the problem in the context of a universal method (*Einheitswissenschaft, scientia generalis*) founded on the basis of formal logic, while each of them follows opposing aims: on the one hand the foundation (Leibniz), on the other the elimination (Carnap) of metaphysics by logical analysis of language."

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"Leibniz's overall view of the relationship between reasoning and computation is discussed on the basis of two broad claims that one finds in his writings, concerning respectively the nature of human reasoning and the possibility of replacing human thinking by a mechanical procedure. A joint examination of these claims enables one to appreciate the wide scope of Leibniz's interests for mechanical procedures, concerning a variety of philosophical themes further developed both in later logical investigations and in methodological contributions to cognitive psychology."
103. Swoyer, Chris. 1994. "Leibniz's Calculus of Real Addition." *Studia Leibnitiana* no. 26:1-30.
"I examine what is probably Leibniz's most complete logical system and show that it is well- developed formal logic with a number of original and important features. Among other things, Leibniz discusses alternative interpretations of his system, provides detailed proofs of over twenty theorems about (what are now known as) semilattices and shows their relevance to logic, and he develops what is probably the first formal theory of the part- whole relation. I then show how Leibniz's system illuminates other aspects of his logic and philosophy, including his views on the structure of concepts and on infinite analysis."

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"Leibniz is well-known for his intensional interpretation of logic, but he also discusses, and sometimes even employs, an extensional approach. I examine Leibniz's views on intension, extension, and the connections between them. I show that Leibnizian intensions and extensions share a common structure that explains the relationships among the various interpretations he proposes for his logics, that because of this common structure extensions express intensions in Leibniz's important, technical sense of expression, and that Leibniz's views on intension and extension (in conjunction with his views about truth) require that Leibnizian concepts be extensional."
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"Vers la fin du XVIIe siècle, le ramisme se répandit en Allemagne, gagna un grand nombre de prosélytes et fit preuve d'une remarquable vitalité. L'histoire de ses effets constitue un intéressant, néanmoins peu recherché chapitre de l'historiographie de la philosophie, et la question portant sur les "dettes" éventuelles de Leibniz envers le ramisme se tient au cœur de cet essai. En premier lieu, quelques caractères théoriques du ramisme allemand et surtout du philippo-ramisme sont mis en évidence, après cela on analyse l'emploi de Leibniz (jusqu'au 1680) des notions "dialectica", "topica" et "ars inveniendi" et l'on découvre une syntonisation conceptuelle entre cet emploi et la manière de penser des ramistes. Sans en tirer des conclusions

hasardeuses, on peut comprendre le ramisme comme un ingrédient essentiel de l'univers leibnizien complexe et comme un thème de plus en plus important pour Leibniz."

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The Rise of Contemporary Logic

The Rise of Contemporary Logic

[The Period from Boole to Gödel](#)

[Selected Bibliography on the Contemporary Symbolic
Logic from Boole to Gödel](#)

Appendix: The Great Logicians

[A Selection of Prominent Logicians from Aristotle to Gödel
\(1931\)](#)



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The Rise of Contemporary Logic from Boole to Gödel

INTRODUCTION

(page under construction)

***Great Logicians of the Second Half of the
Nineteenth and of the Twentieth Century
(1854-1931)***

George Boole (1815 - 1864)
Lewis Carroll (1832 - 1898)
John Venn (1834 - 1923)
William Stanley Jevons (1835 - 1882)
Hugh MacColl (1837 - 1909)
Ernst Schröder (1841 - 1902)
Georg Cantor (1845 - 1918)
Francis Herbert Bradley (1846 - 1924)
Giuseppe Peano (1858 - 1932)
Ernst Zermelo (1871 - 1953)
Jan Łukasiewicz (1878 - 1956)
Thoralf Skolem (1887 - 1963)
Frank Plumpton Ramsey (1903 - 1930)
Jacques Herbrand (1908 - 1931)
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"By 'Modern Logic' (abridged as 'ML') the class of studies is meant which were originated by Leibniz, developed, among

others, by Boole, Peirce, Frege, Peano, Lesniewski and their followers; in other term the class of studies listed in Alonzo Church's Bibliography and in *The Journal of Symbolic Logic*.

The expression 'ML' is sometimes used, it is true, in other ways, e.g. to denote studies in Hegelian dialectics. Those uses are irrelevant for the sake of the present paper which will be exclusively concerned with ML as described above. It may be only said, that no other known sort of contemporary logic can compare with the latter as far as standards of procedures and quality of results are concerned.

The aim of the paper is to describe - as the title selected by the organizers of the conference indicates - the general sense and character of ML thus understood. In other terms an attempt will be made to find the fundamental characteristics of ML-al studies.

The method used will be comparative. We are going to ask: How does ML compare with three fields with which it is usually linked: logic, mathematics and philosophy? Is ML Logic and, if so, how does it differ from other types of logic? Is it a mathematical discipline and, if that is the case, what is the difference between it and other mathematical sciences? Is it philosophy and, this being admitted, what is its place among the other philosophical disciplines?

The present paper will be mostly concerned with the first class of problems, the comparison between ML and the other types of logic; the other two classes of problems will be treated only marginally. As far as the main problems are concerned, the method will necessarily be historical: for, contrary to mathematics and philosophy, all other forms of logic with which ML may be compared belong to the past."

p. 3

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Contents: Introduction 1; 1. The early work of Charles S. Peirce 9; 2. Peirce's calculus of relatives: 1870 23; 3, Peirce on the algebra of logic: 1880 51; 4. Mitchell on a new algebra of logic: 1883 75; 5. Peirce on the algebra of relatives: 1883 95; 6. Peirce's logic of quantifiers: 1885 111; 7. Schröder's calculus of relatives 143; 8. Löwenheim's contribution 169, 9. Skolem's recasting 197; Appendices. 1. Schröder's Lecture I 207; 2. Schröder's Lecture II 223; 3. Schröder's Lecture III 251; 4. Schröder's Lecture V 257; 5. Schröder's Lecture IX 295; 6. Schröder's Lecture XI 339; 7. Schröder's Lecture XII 379; 8. Norbert Wiener's Thesis 429; Bibliography 445; Index 461-468.

"This book is an account of the important influence on the development of mathematical logic of Charles S. Peirce and his student O. H. Mitchell, through the work of Ernst Schröder, Leopold Löwenheim, and Thoralf Skolem. As far as we know, this book is the first work delineating this line of influence on modern mathematical logic.

Modern model theory began with the seminal papers of Löwenheim (1915) "On possibilities in the calculus of relatives" and Skolem (1923) "Some remarks on axiomatized set theory". They showed that in first-order logic, if a statement has an infinite model, it also has a model with countable domain. They observed that second-order logic fails to have this property; witness the axioms for the real number field. Their papers focused the attention of a growing number of logicians, starting with Kurt Gödel and Jacques Herbrand, on models of first-order theories.(1) This became the main preoccupation of model theory and a large component of mathematical logic as it developed over the rest of the twentieth century. In addition, the work of Herbrand, based on the notion of Skolem function, became, through J. Alan Robinson, the main basis of systems of automated reasoning.

A careful examination of the contributions of Peirce, Mitchell, Schröder, and Löwenheim sheds light on several

questions: How did first-order logic as we know it develop? What are the real contributions of Peirce, Mitchell and Schroder, over and above the better known contributions of Gottlob Frege, Bertrand Russell, and David Hilbert?

As a result of this investigation we conclude that, absent new historical evidence, Lowenheim's and Skolem's work on what is now known as the downward Lowenheim-Skolem theorem developed directly from Schroder's *Algebra der Logik*, which was itself an avowed elaboration of the work of the American logician Charles S. Peirce and his student O. H. Mitchell. We have been unable to detect any direct influence of Frege, Russell, or Hilbert on the development of Löwenheim and Skolem's seminal work, contrary to the commonly held perception. This, in spite of the fact that Frege has undisputed priority for the discovery and formulation of first-order logic.

This raises yet other intriguing questions. Why were the contributions of Peirce and Schröder neglected by later authors? Was it because Peirce published in American journals that were not easily available to Europeans? Was it because Schröder had a verbose and sometimes obscure style as a writer? Was it because the logical notations used by Peirce and Schröder were simply less readable than those of Frege? After reading this book, the reader should be able to form his or her own opinions." pp. 1-2

(1) We do not discuss here the Frege-Russell-Hilbert tradition leading to first-order logic and Gödel, since this development has many excellent treatments in the literature already, such as the beautiful book of the late Jean van Heijenoort, *From Frege to Gödel*. Van Heijenoort's book treats Frege, Löwenheim, and Skolem, but does not cover either Peirce's or Schröder's work, which led to Löwenheim's paper. This omission is also present in the historical papers of other otherwise very well-read logicians. There are masterful accounts of the seminal papers of Löwenheim and Skolem in the late Burton Dreben's

introduction to Gödel's thesis in *Collected Works of Kurt Gödel* and in the late Hao Wang's introduction to Skolem's *Selected Works in Logic*. But Peirce and Schröder get no attention.

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"The intensional aspects of Frege's logical doctrine, and his distinction between the sense (*Sinn*) and the denotation (*Bedeutung*) of a name, were explained by him informally in his paper, *Über Sinn und Bedeutung*, (1) and in incidental passages in a number of his other publications, including the first volume of his book, *Grundgesetze der Arithmetik* (Jena, 1893). In his more formal work, Frege's formalized language (*Begriffsschrift*, or *Formelsprache*) has an entirely extensional interpretation, and it may even be that his interest in intensional logic was primarily to clear up certain difficulties regarding its relationship to extensional logic, (2) so as to be able to proceed with development of the latter unhampered. Nevertheless, it seems that Frege would agree that intensional logic also must ultimately receive treatment by the logistic method. And it is the purpose of this paper to make a tentative beginning toward such a treatment, along the lines of Frege's doctrine.

While we preserve what we believe to be the important features of the theory of Frege, we do make certain changes to which he would probably not agree. One of these is the introduction of the simple theory of types as a means of avoiding the logical antinomies. Another is the abandonment of Frege's notion of a function (including propositional functions) as something *ungesattigt*, in favor of a notion according to which the name of a function may be treated in the same manner as any other name, provided that distinctions of type are observed. (But it is even

possible that Frege might accept this latter change, on the basis of an understanding that what we call a function is the same thing which he calls *Werthverlauf einer Funktion*.)"

pp. 3-4

(1) In *Zeitschrift für Philosophie und philosophische Kritik*, (1892), 25-50. See English translations of this paper by Black, in *The Philosophical Review*, LVII (1948), 207-230, and by Feigl, in *Readings in Philosophical Analysis* (New York, 1949); and also a discussion of Frege's doctrines by Russell, in Appendix A of *The Principles of Mathematics*. In reading these, it is necessary to make allowance for differences in the translations that are adopted of some of Frege's terms. We shall here translate Frege's *ausdrücken* as "express" and Frege's *bedeuten* or *bezeichnen* as "denote" or "be a name of," so that a name is said to express its sense and to denote or to be a name of its denotation.

(2) We mention the doctrine of Frege's *Begriffsschrift* of 1879, according to which the relation of identity or equality is a relation between names rather than between the things named, apparently on the ground that identity construed in the latter sense would be too trivial a relation to serve its intended purpose. If use and mention are not to be confused, the idea of identity as a relation between names renders a formal treatment of the logic of identity all but impossible. Solution of this difficulty is made the central theme of *Über Sinn und Bedeutung* and is actually a prerequisite to Frege's treatment of identity in *Grundgesetze der Arithmetik*.

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 List of Contributors IX-X; Wolfgang Lenzen: Leibniz's logic 1; Mary Tiles: Kant: From General to Transcendental Logic 85; John W. Burbidge: Hegel's logic 131; Paul Rusnock and Rolf George; Bolzano as logician 177; Richard Tieszen: Husserl's logic 207; Theodore Hailperin: Algebraical logic 1685-1900 323; Victor Sanchez Valencia: The algebra of logic 389; Ivor Grattan-Guinness: The mathematical turn in logic 545; Volker Peckhaus: Schröder's logic 557; Risto Hilpinen: Peirce's logic 611; Peter M. Sullivan: Frege's Logic 659; Index 751-770.
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 List of Contributors XI-XII; Andrew D. Irvine: Bertrand Russell's logic 1; Dale Jacquette: Logic for Meinongian object theory semantics 29; Joan Rand Moschovakis: The logic of Brouwer and Heyting 77; Jens Erik Fenstad and Hao Wang: Thoralf Albert Skolem 127; Claus-Peter Wirth, Jörg Siekmann, Christoph Benz Müller and Serge Autexier: Jacques Herbrand: life, logic, and automated deduction 195; Michael Potter: The logic of the *Tractatus* 255; Peter M. Simons: Lesniewski's logic 305; Wilfried Sieg: Hilbert's Proof Theory 321; Barry Hartley Slater: Hilbert' Epsilon Calculus and its successors 385; Mark van Atten and Juliette Kennedy: Gödel's logic 449; Keith Simmons:

Tarski's logic 511; Alasdair Urquhart: Emil Post 617; Jan von Plato: Gentzen's logic 667; Felice Cardone and J. Roger Hindley: Lambda-calculus and Combinators in the 20th century 723; Jonathan P. Seldin: The logic of Church and Curry 819; Andrea Cantini: Paradoxes, self-reference and truth in the 20th century 875; Index 1015-1056.

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"What has been the historical relationship between set theory and logic? on the one hand, Zermelo and other mathematicians developed set theory as a Hilbert-style axiomatic system. On the other hand, set theory influenced logic by suggesting to Schröder, Löwenheim and others the use of infinitely long expressions. The question of which logic was appropriate for set theory -- first-order logic, second-order logic, or an infinitary logic -- culminated in a vigorous exchange between Zermelo and Gödel around 1930."

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"Using a contextual method the specific development of logic between c. 1830 and 1930 is explained. A characteristic mark of this period is the decomposition of the complex traditional philosophical omnibus discipline logic into new

philosophical sub-disciplines and separate disciplines such as psychology, epistemology, philosophy of science and formal (symbolic, mathematical) logic. In the 19th century a growing foundational need in mathematics provoked the emergence of a structural view on mathematics and the reformulation of logic for mathematical means. As a result formal logic was taken over by mathematics in the beginning of the 20th century as is shown by sketching the German example."

31. ———. 1999. "19th Century Logic between Philosophy and Mathematics." *Bulletin of Symbolic Logic* no. 5:433-450. "The history of modern logic is usually written as the history of mathematical or, more general, symbolic logic. As such it was created by mathematicians. Not regarding its anticipations in Scholastic logic and in the rationalistic era, its continuous development began with George Boole's *The Mathematical Analysis of Logic* of 1847, and it became a mathematical subdiscipline in the early 20th century. This style of presentation cuts off one eminent line of development, the philosophical development of logic, although logic is evidently one of the basic disciplines of philosophy. One needs only to recall some of the standard 19th century definitions of logic as, e.g., the art and science of reasoning (Whateley) or as giving the normative rules of correct reasoning (Herbart). In the paper the relationship between the philosophical and the mathematical development of logic will be discussed. Answers to the following questions will be provided:
1. What were the reasons for the philosophers' lack of interest in formal logic?
 2. What were the reasons for the mathematicians' interest in logic?
 3. What did "logic reform" mean in the 19th century? Were the systems of mathematical logic initially regarded as contributions to a reform of logic?

4. Was mathematical logic regarded as art, as science or as both?"

32. Proust, Joëlle. 1989. *Questions of Form. Logic and the Analytic Proposition from Kant to Carnap*. Minneapolis: University of Minnesota Press.

Translated by Anastasios Albert Brenner from the original French: *Questions de forme. Logique et proposition analytique de Kant à Carnap* - Paris, Fayard, 1986.

33. Pulkkinen, Jarmo. 1994. *The Threat of Logical Mathematism. A Study on the Critique of Mathematical Logic in Germany at the Turn of the 20th Century*. New York: Peter Lang.

Contents: Acknowledgements 7; Introduction 9; 1. History of logic in Germany 1830-1920 15; 2. Logic and psychology 41; 3. Logic and linguistics 59; 4. Logic and mathematics 71; 5. The reception of mathematical logic in Germany 91; 6. Mauthner's critique 121; 7. Rickert's critique 139; 8. Ziehen's critique 153; Conclusion 169; Bibliography 177-187.

"This work attempts to throw some light on an interesting feature in the development of German logic which has not yet received the attention it deserves. Almost a whole generation of German philosophers did not accept the new mathematical logic at the turn of the 20th century. In this respect development in Germany differs greatly from that in Britain where George Boole's ideas received the attention of philosophers through the work of W.S. Jevons. However, both Gottlob Frege and Ernst Schroder, the main representatives of mathematical logic in Germany, remained isolated figures whose works were either strongly criticized or completely neglected by philosophers. Schroder was able to get some attention to his ideas but the influence of Frege remained very limited for a long time. Frege's ideas started to have an impact in Germany only through the *Principia Mathematica* by Russell and Whitehead.

The fate of mathematical logic in Germany cannot be explained away by saying that German philosophers were

not interested in logic. They were. In fact, the landscape of German traditional logic is at that time so rich and varied that it is difficult to give a coherent account of it. What makes the period particularly interesting are the interrelationships between psychology, logic and linguistics. All these disciplines came of age in Germany almost simultaneously. Wilhelm Wundt founded modern experimental psychology during the 1870s. Frege did the same for modern mathematical logic at the end of the same decade. As linguistics underwent a deep change at the turn of the 20th century, the basic concepts of language and linguistics were studied not only by linguists but also by philosophers and psychologists.

In the late 19th century linguistics, philosophy and psychology were seen to be much closer to each other than nowadays. Linguists, philosophers and psychologists alike wrote on logical questions. Particularly interesting is the relationship between logic and psychology. In this period philosophers and psychologists were involved in an intense struggle over the chairs of philosophy. This struggle influenced deeply the logical discussion of the period (the debate over the so-called 'psychologism'). One group of logicians believed that their work could be made easier by the results of the new experimental psychology. In other words, they believed that the new scientific psychology could offer a solid foundation for the new scientific logic. Another group of logicians criticized these attempts and tried to present logic as an independent philosophical science. However, both groups had one thing in common: a negative attitude towards mathematical logic.

The present survey of the critique of mathematical logic at the turn of the 20th century attempts to answer several interesting questions: How did the contemporary German philosophers see the role and significance of logic? What kind of relationships did they claim to exist between logic, mathematics, linguistics and psychology? What exactly were

the arguments of the (now) almost forgotten critics? I shall start by giving a historical survey of the development of German logic 1830-1920 as it appears against the background of German academic philosophy (chapter 1). Next I shall study the interrelationships between logic and psychology (chapter 2), logic and linguistics (chapter 3), and logic and mathematics (chapter 4). After this I shall present the general features of the reception of mathematical logic in Germany between 1880 and 1920 (chapter 5). This is followed by a more detailed account of the arguments of three individual critics: Fritz Mauthner (chapter 6), Heinrich Rickert (chapter 7), and Theodor Ziehen (chapter 8). I have chosen these three for several reasons. Firstly, each represents a different viewpoint: Mauthner was mainly interested in the problems of language, Rickert was one of the most prominent philosophers of the period, and Ziehen was originally a psychologist. Secondly, I have wanted to bring forward previously unknown figures (this is the reason why I did not choose Husserl, for instance, who wrote much on the subject). Thirdly, I have tried to choose critics who presented interesting ideas. And lastly, in order to have a large enough corpus for study I have had to choose writers who wrote much on the subject."

34. ———. 2005. *Thought and Logic. The Debates between German-Speaking Philosophers and Symbolic Logicians at the Turn of the 20th Century*. New York: Peter Lang.
"The book deals with the reception and critique of symbolic logic among German-speaking philosophers at the turn of the 20th century. The first part discusses the period from the late 1870s up to the end of the 19th century. The main issue is the arrival of the Boolean algebra of logic in Germany and Austria. It examines also the reasons why Gottlob Frege was so unsuccessful in his attempts to draw the attention of philosophers to his logicist programme. The second part deals with the first two decades of the 20th century. Its main topic of inquiry is the reception of

- Bertrand Russell's and Louis Couturat's ideas in the German-speaking world. In particular, it concentrates on the relationship between Russell and neo-Kantians."
35. Rao, A.Pampapathy. 1996. "A Survey of Free Logics." *Modern Logic* no. 6 (2):123-191.
 36. Salmon, Nathan. 1993. "A Problem in the Frege-Church Theory of Sense and Denotation." *Nous* no. 27:158-166.
 37. Schurz, Gerhard. 1994. "Admissible Versus Valid Rules: A Case Study of the Modal Fallacy." *Monist* no. 77 (3):376-388.
 38. Thiel, Christian. 1983. "Some Difficulties in the Historiography of Modern Logic." In *Atti Del Convegno Internazionale Di Storia Della Logica*, edited by Abrusci, Michele, Casari, Ettore and Mugnai, Massimo, 175-191. Bologna: CLUEB.
 39. ———. 1996. "Research on the History of Logic at Erlangen." In *Studies on the History of Logic. Proceedings of the Third Symposium on the History of Logic*, edited by Angelelli, Ignacio and Cerezo, Maria, 397-401. Berlin: Walter de Gruyter.
 40. Vega, Reñón Luis. 2001. "La Lógica En España (1890-1930): Desencuentros." *Teorema* no. 20:21-38.
 "This paper is both a first step towards, and an invitation to go on with, the study of the reception of modern -- symbolic, mathematical -- logic in Spain. I examine the first and unsuccessful introduction of modern logic in mathematical and philosophical circles, between 1890 and 1930. Such reception failures are usually attributed to external and/or general circumstances, ranging from personal to institutional and cultural conditions of Spanish learning. But here we should also take into account the very working of the so-called "sowers", i.e., introducing people, as well as some other internal factors and frames of this non-reception case."
 41. Wolenski, Jan. 1991. "Theories of Reasoning in the Lvov-Warsaw School." In *Topics in Philosophy and Artificial*

Intelligence, edited by Albertazzi, Liliana and Poli, Roberto, 91-101. Bozen: Istituto Mitteleuropeo di Cultura.
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42. ———. 1995. "Mathematical Logic in Poland 1900-1939: People, Circles, Institutions, Idea." *Modern Logic* no. 5 (4):363-405.
43. ———. 2003. "The Achievements of the Polish School of Logic." In *The Cambridge History of Philosophy 1870-1945*, edited by Baldwin, Thomas, 401-416. Cambridge: Cambridge University Press.

"In the most narrow sense, the Polish school of logic may be understood, as the Warsaw school of mathematical logic with Jan Łukasiewicz, Stanislaw Lesniewski, and Alfred Tarski as the leading figures. However, valuable contributions to mathematical logic were also made outside Warsaw, in particular by Leon Chwistek. Thus, the Polish school of logic *sensu largo* also comprises logicians not belonging to the Warsaw school of logic. The third interpretation is still broader. If logic is not restricted only to mathematical logic, several Polish philosophers who were strongly influenced by formal logical results, for example Kazimierz Ajdukiewicz and Tadeusz Kotarbinski, can be included in the Polish school of logic *sensu largissimo*. Polish work on logic can therefore encompass a variety of topics, from the 'hard' foundations of mathematics (e.g. inaccessible cardinals, the structure of the real line, or equivalents of the axiom of choice) through formal logic, semantics, and philosophy of science to ideas in ontology and epistemology motivated by logic or analysed by its tools. Since the development of logic in Poland is a remarkable historical phenomenon, I shall first discuss its social history, especially the rise of the Warsaw school. Then I shall describe the philosophical views in question, the most important and characteristic formal results of Polish logicians, their research in the history of logic, and

applications of logic to philosophy. My discussion will be selective: in particular I will omit most results in the 'hard' foundations of mathematics." p. 401

Related pages

[The Rise of Contemporary Logic from Boole to Gödel](#)



[History of Logic from Aristotle to Gödel](#)

Raul Corazzon || rc@ontology.co || [Info](#)

A Selection of Prominent Logicians from Aristotle to Gödel (1931)

INTRODUCTION

SEP = There is an entry in the Stanford Encyclopedia of Philosophy

IEP = There is an entry in the Internet Encyclopedia of Philosophy

Aristotle (384 BC - 322 BC) | SEP | IEP |

[Aristotle's Logic: Introductory Readings and the Syllogistic](#)

[Aristotle's *De Interpretatione*: Semantics and Philosophy of Language](#)

[Aristotle's Theory of Categorical Syllogism in the *Prior Analytics*](#)

Disciples of Aristotle

[Eudemus of Rhodes \(c. 350 BC - 290 BC\)](#)

[Theophrastus of Eresus \(371 BC - c. 287 BC\)](#) | [SEP](#) | [IEP](#) |

The Dialectical School

Philo the Dialectician (4th century BC)

Diodorus Cronus (second-half of the 4th century BC) | [SEP](#) |

Stoics

Zeno of Citium (c. 334 BC - 262 BC)

Cleanthes of Assos (c. 331 BC - c. 232 BC) | [IEP](#) |

Chrysippus (c. 280 - c. 207 BC) | [IEP](#) |

Epictetus (50 - 130) | [SEP](#) | [IEP](#) |

Epicureans

Philodemus of Gadara (c. 110 - c. 40 BC) | SEP |

Greek Commentators of Aristotle's Logical Works

Alexander of Aphrodisias (end of 2nd century) | SEP |

Porphyry (234? - 305?) | SEP |

Ammonius Hermeiou (c. 435/445 - 517/526) | SEP |

Simplicius of Cilicia (c. 490 - c. 560)

John Philoponus (c. 490 - c. 570)

Other Greek Logicians

Claudius Galenus (129 - 200) | SEP |

Sextus Empiricus (160 - 210)

Plotinus (204 - 270) | SEP |

Proclus Diadocus (412 - 485) | SEP |

Diogenes Laërtius (3rd century)

Latin Logic before Eleventh Century

Cicero (106 BC 43 BC) | SEP |

Lucius Apuleius of Madaura (c. 123/125 - 180)

Marius Victorinus (4th century)

Martianus Capella (5th century)

Anicius Manlius Severinus Boethius (c. 480 - 524 or 525) | SEP |

Byzantine Logicians (from 6th to 12th century)

Alcuin of York (c. 735 - 804)

[John Scottus Eriugena](#) (c. 815 - 877) | SEP |

Logic in the Eleventh Century

Abbo of Fleury (c. 945 - 1004)

Anselm of Canterbury (1033 - 1109) | SEP | IEP |

Al Kindi (c. 801 - 873) | SEP |

Al-Farabi (c. 872 - 950/951) | SEP |

[Avicenna \(Ibn Sina\)](#) (c. 980 - 1037) | SEP | IEP |

Peter Damian (1007 - 1072) | SEP |

Averroes (Ibn Rushd) (1126 - 1198) | IEP |

Logic and Grammar in Twelfth Century

The anonymous *Glosulae super Priscianum* (written between 1080 and 1150)

Roscelin (c. 1050 - c. 1125)

William of Champeaux (c. 1070 - 1122) | SEP |

Garlandus Computista [Gerlandus of Besançon] (early 12th century)

[Peter Abelard](#) (1079 - 1142) | SEP | IEP |

Adam Parvipontanus (or Adam of Balsham) (? - 1181)

Gilbert of Poitiers (after 1085 - 1154)

John of Salisbury (c. 1120 - 1180) | SEP |

Moses Maimonides (1135 m- 1204) | SEP | IEP |

Logic and Grammar in Thirteenth Century

William of Sherwood (or Shyreswood) (1200/5 - 1266/71) | SEP |

Albert the Great (1200 - 1280) | SEP |

Peter of Spain (d. 1277) | SEP |

Robert Kilwardby (1215? - 1279) | SEP |

Roger Bacon (1215 - 1294) | SEP | IEP |

Henry of Ghent (c. 1217 - 1293) | SEP |

Richard the Sophister (second quarter of the 13th century) | SEP |

Ramón Llull (c. 1233 - 1316)

Giles of Rome (1243 - 1316) | SEP |

Boethius of Dacia (fl. 1260 - 1270)

William Heytesbury (? - d. 1272/3)

Simon of Faversham (c. 1260 - 1306) | SEP |

John Duns Scotus (c. 1266 - 1308) | SEP | IEP |

Radulphus Brito (c. 1270 - 1320)

Logic and Grammar in Fourteenth Century

Pseudo-Scotus (14th century)

Thomas of Erfurt (first quarter of the 14th century) | SEP | IEP |

Walter Burley (c. 1275 - 1344) | SEP |

Peter Aureoli (c. 1280 - 1322)

Siger of Courtrai (c. 1283 - 1341)

William of Ockham (c. 1287 - 1347) | SEP | IEP |

Walter Chatton (c. 1290 - 1343) | SEP |

Robert Holkot (c. 1290 - 1349)

Thomas Bradwardine (c. 1290 - 1349)

John Buridan (c. 1300 - after 1358) | SEP |

Gregory of Rimini (c. 1300 - 1358) | SEP |

Nicholas of Autrecourt (c. 1300 - after 1358) | SEP |

Richard Kilvington (1305 - 1361) | SEP |

Albert of Saxony (c. 1316 - 1390) | SEP |

John Wyclif (c. 1330 - 1384) | SEP |

Marsilius of Inghen (c. 1340 - 1396) | SEP |

Robert Alyngton (? - 1398) | SEP |

William Crathorn (fl. 1330) | SEP |

Richard Billingham (fl. 1350 - 1360)

Peter of Mantua (d. 1400)

Vincent Ferrer (c. 1350 - 1420/1)

Peter of Ailly (c. 1350 - 1420)

Sharpe Johannes (c. 1360 - 1515) | SEP |

William Penbygull (? - 1420 | SEP |)

Paul of Venice (c. 1369 - 1429) | SEP |

Paul of Pergola (1380 - 1455)

Logicians of the Fifteenth Century

George of Trebizond (1395 - 1472/3)

Nicholas of Cusa (1401 - 1464)

Lorenzo Valla (1407 - 1457) | SEP |

Rodolphus Agricola (1444 - 1485)

Pico della Mirandola (1463 - 1494) | SEP |

Logic in the Modern Age. First Part: 1500 - 1640

Jean Luis Vivés (1493 - 1540) | SEP |

Domingo de Soto (1494 - 1560)

Philipp Melanchthon (1497 – 1560)

Petrus Ramus (1515 - 1572) | SEP |

Pedro da Fonseca (1528 - 1599)

Franciscus Toletus (1532 - 1596)

Giacomo (Jacopo) Zabarella (1533 - 1589) | SEP |

Bartholomäus Keckermann (1572 - 1609)

Joachim Jungius (1587 - 1657)

Robert Sanderson (1587 - 1663)

Thomas Hobbes (1588 - 1679) | SEP | IEP |

Franco Burgersdijk (1590 - 1635)

Gassendi Pierre (1592 - 1655) | SEP |

The Conimbricenses (*In universam dialectica Aristotelis*, 1606)

Logic in the Modern Age. Second Part: 1640 - 1780

Athanasius Kircher (1601/2 - 1680)

Sebastián Izquierdo (1601 - 1681)

Juan Caramuel y Lobkowitz (1606 - 1682)

Georges Dalgarno (1616 - 1687)

Antoine Arnauld (1612 - 1694) | IEP |

John Wallis (1616 - 1703)

Johannes Clauberg (1622 - 1665)

Arnold Geulincx (1624 - 1669)

John Locke (1632 – 1704)

Nicolas Malebranche (1638 – 1715)

Gottfried Wilhelm Leibniz (1646 - 1716) | SEP | IEP |

Ehrenfried Walther von Tschirnhaus (1651 – 1708)

Christian Thomasius (1655 - 1728)

Johann Franz Budde (1667 - 1729)

Giovanni Girolamo Saccheri (1667 - 1733)

Andreas Rüdiger (1673 - 1731)

Christian Wolff (1679 - 1754) | SEP |

Johann Peter Reusch (1691 - 1758)

Johann Georg Walch (1693 – 1775)

Joahann Andreas Segner (1704 - 1777)

1700-1750

Leonhard Euler (1707 - 1783)

Étienne Bonnot de Condillac (1714 - 1780) | SEP | IEP |

Joachim Georg Darjes (1714 - 1791)

Gottfried Ploucquet (1716 - 1790)

Georg Friedrich Meier (1718 – 1777)

Immanuel Kant (1724 - 1804) | SEP | IEP |

Johann Heinrich Lambert (1728 - 1777)

Nicolas Condorcet (1743 - 1794)

Logic in First Half of Nineteenth Century

Jeremy Bentham (1748 - 1832) | SEP | IEP |

Georg Wilhelm Friedrich Hegel (1770 - 1831)

Joseph Diaz Gergonne (1771 - 1859)

Samuel Taylor Coleridge (1772 - 1834)

Bernard Bolzano (1781 - 1848) | SEP | IEP |

Richard Whateley (1787 - 1863)

William Hamilton (1788 - 1856)

William Whewell (1794 - 1866) | SEP |

Friedrich Adolf Trendelenburg (1802 - 1872)

Augustus De Morgan (1806 - 1871)

John Stuart Mill (1806 - 1873) | SEP | IEP |

Logic in the Second Half of Nineteenth Century

George Boole (1815 - 1864) | SEP |
Hermann Lotze (1817- 1881) | SEP |
Christoph von Sigwart (1830 - 1904)
Charles Dodgson [Lewis Carroll] (1832 - 1898)
John Venn (1834 - 1923)
William Stanley Jevons (1835 - 1882)
Hugh MacColl (1837 - 1909)
Victoria, Lady Welby (1837 - 1912)
Franz Brentano (1838 - 1917) | SEP |
Charles Saunders Peirce (1839 - 1914) | SEP | IEP |
Ernst Schröder (1841 - 1902)
Georg Cantor (1845 - 1918)
Francis Herbert Bradley (1846 - 1924) | SEP | IEP |
Christine Ladd-Franklin (1847 - 1930)
Bernard Bosanquet (1848 - 1923) | SEP |
Gottlob Frege (1848 - 1925) | SEP | IEP |

Logic in the Twentieth Century

John Neville Keynes (1852 - 1949)

Alexius Meinong (1853 - 1920) | SEP |

Giuseppe Peano (1858 - 1932)

Edmund Husserl (1859 - 1938) | SEP | IEP |

Alfred Whitehead (1861 - 1947) | SEP | IEP |

David Hilbert (1862 - 1943)

Louis Couturat (1868 - 1914)

Ernst Zermelo (1871 - 1953)

Bertrand Russell (1872 - 1970) | SEP | IEP |

Jan Łukasiewicz (1878 - 1956) | SEP |

Ernst Mally (1879 - 1944) | SEP |

Luitzen Egbertus Jan Brouwer (1881 - 1966) | SEP |

Clarence Irving Lewis (1883 - 1924) | SEP | IEP |

Hermann Weyl (1885 - 1955) | SEP |

Kazimierz Twardowski (1886 - 1938) | SEP |

Stanislaw Lesniewski (1886 - 1939) | SEP |

Thoralf Skolem (1887 - 1963)

Ludwig Wittgenstein (1889 - 1951) | SEP | IEP |

Rudolf Carnap (1891 - 1970) | IEP |

Frank Plumpton Ramsey (1903 - 1930)

Frank Ramsey (1903 - 1930)

Jacques Herbrand (1908 - 1931)

Kurt Gödel (1906 - 1978) | SEP |

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INDEX OF THE SECTION: *BIBLIOGRAPHIES OF HISTORIANS OF LOGIC*

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Philosophy*

E. J. Ashworth:

[1967 - 1976](#)

[1977 - 1988](#)

[1989 - 1996](#)

[1997 - 2015](#)

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[1950 - 1974](#)

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Writings of E. Jennifer Ashworth on the History of Logic. First Part

Earline Jennifer Ashworth (born 1939) studied at Cambridge University and at Bryn Mawr College, where she was awarded a Ph.D. in 1964 (*The Logica Hamburgensis of Joachim Jungius*); she is Distinguished Professor Emerita at the University of Waterloo, Ontario (retired July, 1st 2005) and her main interests are Late Mediaeval and Renaissance logic and philosophy of language; she is Renaissance subject Editor for the *Routledge Encyclopedia of Philosophy*.

The bibliography is composed of four parts:

1. First: Books authored and edited by E. Jennifer Ashworth; Articles from 1967 to 1976
2. [Second: Articles from 1977 to 1988](#)
3. [Third: Articles from 1989 to 1996](#)
4. [Fourth: Articles from 1997 to 2017](#)

I wish to thank Professor Ashworth for helping me to complete this bibliography.

BOOKS AUTHORED

1. Ashworth, Earline Jennifer. 1974. *Language and Logic in the Post-Medieval Period*. Dordrecht: Reidel.

TABLE OF CONTENTS; PREFACE IX; NOTE ABOUT ABBREVIATIONS XIII; ACKNOWLEDGEMENTS XV; CHAPTER I / HISTORICAL INTRODUCTION 1; 1. The Publication of Medieval Works 2; 2. Scholasticism in Italy and Germany 4; 3. Scholasticism in France and Spain 5; 4. Humanism 8; 5. Rudolph Agricola and His Influence 10; 6. Petrus Ramus and His Influence 15; 7. Seventeenth Century Logic: Eclecticism 17; 8. Humanism and Late Scholasticism in Spain 19; 9. Other Schools of Logic 20; 10. A Note on Terminology 22; CHAPTER II / MEANING AND REFERENCE 26; I. The Nature of Logic 26; 1. The Contents of Logical Text-books 26; 2. The Definition of Logic 29; 3. The Object of Logic 32; II. Problems of Language 37; 1. Terms: Their Definition and Their Main Divisions 38; 2. The Relationship between Mental, Spoken and Written Terms 42; 3. Other Divisions of Terms 45; 4. Sense and Reference 47; 5. Propositions and their Parts 49; 6. Sentence-Types and Sentence-Tokens 52; 7. Complex Signifiabiles and Truth 55; 8. Other Approaches to Truth 62; 9. Possibility and Necessity 66; III. SUPPOSITION THEORY 77; 1. Supposition, Acceptance and Verification 78; 2. Proper, Improper, Relative and Absolute Supposition 82; 3. Material Supposition 83; 4. Simple Supposition 84; 5. Natural Personal Supposition 88; 6. Ampliation 89; 7. Appellation 92; IV. SEMANTIC PARADOXES 101; 1. Problems Arising from Self-Reference 101; 2. Solution One: Self-Reference Is Illegitimate 104; 3. Solution Two: All Propositions Imply Their Own Truth 106; 4. Solution Three: Insolubles Assert Their Own Falsity 108; 5. Solution Four: Two Kinds of Meaning 110; 6. Solution Five: Two Truth-Conditions 112; 7. Later Writing on Insolubles 114; CHAPTER III / FORMAL LOGIC. PART ONE: UNANALYZED PROPOSITIONS 118; I. THE THEORY OF CONSEQUENCE 120; 1. The Definition of Consequence 120; 2. The Definition of Valid Consequence 121; 3. Formal and Material Consequence 128; 4. 'Ut Nunc' Consequence

130; 5. The Paradoxes of Strict Implication 133; 6. Rules of Valid Consequence 136; II. PROPOSITIONAL CONNECTIVES 147; 1. Compound Propositions in General 147; 2. Conditional Propositions 149; 3A. Rules for Illative Conditionals 154; 3B. Rules for Promissory Conditionals 156; 4. Biconditionals 156; 5. Conjunctions 157; 6. Disjunctions 161; 7. De Morgan's Laws 166; 8. Other Propositional Connectives 177; III. AN ANALYSIS OF THE RULES FOUND IN SOME INDIVIDUAL AUTHORS 171; 1. Paris in the Early Sixteenth Century 171; 2. Oxford in the Early Sixteenth Century 181; 3. Germany in the Early Sixteenth Century 183; 4. Spain in the Third Decade of the Sixteenth Century 184; 5. Spain in the Second Part of the Sixteenth Century 184; 6. Germany in the Early Seventeenth Century 185; CHAPTER IV / FORMAL LOGIC. PART TWO: THE LOGIC OF ANALYZED PROPOSITIONS 187; I. The Relationships Between Propositions 189; 1. The Quality and Quantity of Propositions 189; 2. Opposition 192; 3. Equipollence 194; 4. Simple and Accidental Conversion 195; 5. Conversion by Contraposition 199; II. Supposition Theory and Quantification 207; 1. The Divisions of Personal Supposition 207; 2. Descent and Ascent 213; III. Categorical Syllogisms 223; 1. Figures and Modes 224; 2. How to Test the Validity of a Syllogism 230; 3. Proof by Reduction 239; 4. Syllogisms with Singular Terms 247; APPENDIX / LATIN TEXTS 253; BIBLIOGRAPHY 282; 1. Primary Sources 282; 2. Secondary Sources on the History of Logic 1400-1650 291; INDEX OF NAMES 297-304.

"Keckermann remarked of the sixteenth century, "never from the beginning of the world was there a period so keen on logic, or in which more books on logic were produced and studies of logic flourished more abundantly than the period-in which we live." (1) But despite the great profusion of books to which he refers, and despite the dominant position occupied by logic in the educational system of the fifteenth, sixteenth and seventeenth centuries, very little

work has been done on the logic of the postmedieval period. The only complete study is that of Risse [a], whose account, while historically exhaustive, pays little attention to the actual logical doctrines discussed. (2) Otherwise, one can turn to Vasoli [b] for a study of humanism, to Muñoz Delgado [c] for scholastic logic in Spain, and to Gilbert [d] and Randall [e] for scientific method, but this still leaves vast areas untouched. In this book I cannot hope to remedy all the deficiencies of previous studies, for to survey the literature alone would take a life-time.

As a result I have limited myself in various ways. In the first place, I concentrate only on those matters which are of particular interest to me, namely theories of meaning and reference, and formal logic. For discussions of such matters as demonstration, the logic of scientific method, the categories, the topics, informal fallacies, humanist logic, Ramist logic, and the whole range of commentaries on Aristotle, the reader will have to look elsewhere. However, in my first chapter, which I must confess to be based largely on secondary sources, I attempt to give an overall picture of the period, so that the reader can assess the place of the people and the theories I discuss in a wider context.

In the second place, although I make extensive references to one or two medieval logicians, particularly Peter of Ailly, whose work was still widely read and discussed in the post-medieval period, I have made no attempt to fill in the medieval background, or to trace the historical antecedents of every doctrine I mention. There are two reasons for this deficiency. One lies in my original purpose, which was simply to describe just what logic a well-read man of the sixteenth or seventeenth century would have been acquainted with. The other, and most important, reason lies in the monumental nature of such a task. An adequate treatment of the historical antecedents would not only double the size of my book, but would quadruple the number of footnotes, as well as taking many years to

accomplish. Fortunately medieval logic has been by no means as thoroughly neglected as post-medieval logic, and a very good idea of its scope and achievements can be obtained from the following works, which themselves contain extensive bibliographies:

Nuchelmans, G., *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Amsterdam, 1973.

Pinborg, J., *Logik und Semantik im Mittelalter. Ein Überblick*, Stuttgart-Bad Cannstatt, 1972.

Rijk, L. M. de, *Logica Modernorum, Vol. I, On the Twelfth Century Theories of Fallacy*, Assen, 1962.

Rijk, L. M. de, *Logica Modernorum, Vol. II, The Origin and Early Development of the Theory of Supposition*, Assen, 1967. This volume is in two parts, the second of which contains texts and indices.

In the third place, I have found myself unable to shed very much light on the historical relations between many of the authors whom I discuss.

So far as those from whom I most frequently quote are concerned, there is little problem. The bulk of my references are to Caubraith, Celaya, Clichtoveus, Enzinas, Pardo, de Soto and Tartaretus, all of whom studied and/or taught at the University of Paris in the first years of the sixteenth century, or earlier in the case of Tartaretus. Needless to say, these men were acquainted with each other's works. Many other references are to Hieronymus of St. Mark of whom I know only that he studied at Oxford and that he frequently quotes from the work of Pardo; and to the Germans, Trutvetter, Gebwiler and Eckius, who are of the same period and who obviously knew the works of the Parisian logicians as well as the works of Ockham, Buridan, Marsilius of Inghen and Albert of Saxony.

The only later sixteenth century author of whom I make much use is Fonseca, and the only seventeenth century author of whom I make much use is John of St. Thomas.

The influences on these men have been comprehensively described in the works of Munoz Delgado, and they stem back to early sixteenth century Paris. However, once one strays outside Spain and the Paris of the early sixteenth century, a number of obstacles to historical understanding immediately appear. Despite Risse's efforts, we still do not know exactly how many logic texts were published, where they were written, or when their first edition appeared. The books themselves usually contain neither biographical nor bibliographical information. Authors not only used each other's work without acknowledgement, but they also criticized each other's work without giving more specific references than "a certain doctor said". Little is known about the curricula of most sixteenth and seventeenth century universities.

Moreover, there is a tremendous amount of sameness about the contents of logical textbooks, particularly in the later period. They can be roughly categorized as Philippist, Ramist, Philippo-Ramist, Aristotelian, or eclectic, but finer distinctions are hard to draw. Even when an author cites his sources, this may be of little help. For instance, we know that Joachim Jungius told Rhenius that he based his logic text upon the works of Dietericus and Johann Kirchmann, (3) but his work bears little obvious relation to that of Dietericus, and I have been unable to see a copy of Kirchmann. In any case, the first edition of Kirchmann listed by Risse appeared in 1638, the very year of the *Logica Hamburgensis*.

On the whole, I think that I will be content to leave the task of unraveling all the relationships between logicians of the later period to the intellectual historian. It is true that a number of medieval doctrines were preserved into the seventeenth century, much later than such authors as Boehner had supposed, and it is true that some new work was done, particularly with respect to the fourth figure of the syllogism, but generally speaking, nothing of interest to

the logician was said after 1550 at the very latest. Indeed, now that I have written this book, I have compiled a large list of logic texts from the period 1550-1650 which I shall be happy never to open again. On the other hand, an enormous amount of interesting work remains to be done for the period 1450-1550, and I very much hope that my own research will provide a useful starting point for research by others." (*Preface*, X-XI)

(1) Keckermann, *Praecognitorum Logicorum Tractatus III*, Hanoviae 1606, 109f.

(2) For titles, see the bibliography.

(3) Jungius, *Logica Hamburgensis*, edited and translated into German by R. W. Meyer, Hamburg 1957, editor's introduction, xx.

Notes added:

[a] *Die Logik der Neuzeit. Band I. 1500-1640*, Stuttgart-Bad Cannstatt 1964.

[b] *La dialettica e la retorica dell'umanesimo: 'Invenzione' e 'Metodo' nella cultura del XV e XVI secolo*, Milano 1968.

[c] *Logica Hispano-Portuguesa hasta 1600*, Salamanca 1972.

[d] *Renaissance Concepts of Method*, New York 1960.

[e] *The School of Padua and the Emergence of Modern Science*, Padua 1961

2. ———. 1978. *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century: A Bibliography from 1836 Onwards*. Toronto: Pontifical Institute of Mediaeval Studies. Contents: Preface VII; Part One. Anselm to Paul of Venice (items 1-632) 1; Part Two. After Paul of Venice (items 633-879) 73; Index of Names 101; Index of Texts 105; Index of Translations 107; Index of Subjects 109.

"My main interest in drawing up this bibliography was to list all the books and articles which have to do with formal logic and semantics from the time of Anselm to the end of the seventeenth century. I see this area as including such

topics as consequences, syllogistic, supposition theory, and speculative grammar, but as excluding such topics as the categories, the struggle between nominalism and realism, and pure grammar. It is not, of course, always easy to draw a line between works which are concerned with formal logic and semantics and works which are not so concerned, and inevitably my choice of borderline cases will seem too restrictive to some and too liberal to others. However, my hope is that I have not excluded any book or article which obviously falls into the area I have delimited.

I have used the phrase "the tradition of medieval logic" in the title in order to indicate that although I include the seventeenth century, I am not concerned with the contributions of modern philosophy. The work of men such as Pascal, Descartes, Arnauld, Leibniz and Locke carries us far indeed from medieval discussions of logic and semantics. Moreover, there is already such an extensive literature on these figures that to include them in my bibliography would completely change its character. On the other hand, I do include humanist logic and renaissance Aristotelianism, since they involve a reaction to the medieval tradition which can only properly be understood in the light of that tradition.

This is a bibliography of secondary works and of modern editions of early texts. Accordingly I have excluded those nineteenth century reprints of earlier works such as Aldrich's *Artis Logicae Compendium* which were produced merely as text books, and I have also excluded modern facsimile editions of early printed texts unless they are accompanied by substantial editorial material. In addition, I have omitted a list of the various editions of Milton's *Artis Logicae Plenior Institutio*, since printings of his complete works are both numerous and easily found. The earliest book I list is Victor Cousin's 1836 edition of Abelard, since this can properly be viewed as the starting point of modern scholarly work on medieval logicians.

I do not refer to short edited or translated passages in books of readings. I have included only the more lengthy book reviews, and only a few unpublished dissertations. I have not included biographical and general historical works unless they have some specific contribution to make to the history of logic. I have tried to include all relevant material published before 1977, but the listing of 1976 publications is inevitably incomplete, given the delays which so often occur in the printing of books and journals.

I have endeavoured to look at each item personally, and to include as much information as possible. In those cases where I have failed to locate an item, or have located it in a place where I could not conveniently see it, I have made a note of my failure. The reader should bear in mind that these entries may be quite inaccurate. Where I have only been able to see a copy of an article, I have added the note: "Journal not seen."

Works which deal with the period as a whole will be found in Part One.

Where an author has more than one book or article, the items are arranged chronologically.

Below each item I list the headings under which it is indexed and, where relevant, cross-references to reviews, discussions, translations and reprints. The ordering of the headings corresponds to the four indexes I have provided: (1) an index of names; (2) an index of texts; (3) an index of translations; (4) an index of subjects. Only substantial texts and translations are indexed. In the few cases where a book review is not cross-referenced, the reason is that only the review contains material relevant to my purposes. It is my hope that these indexes, which are based on my knowledge of a work's contents rather than its title alone, will prove one of the most valuable aspects of my bibliography.

Readers who wish to find articles dealing with related fields or published after 1976 are recommended to consult two bibliographical sources in particular. They are:

1. *Repertoire Bibliographique de la Philosophie*. Publié par l'Institut supérieur de philosophie de l'Université catholique de Louvain.

2. *The Philosopher's Index*. An International Index to Philosophical Periodicals.

Readers who wish to remedy the omissions I describe in my first three paragraphs are also recommended to consult the following:

Risse, Wilhelm. *Bibliographia Logica*. Band II. 1801-1969. Hildesheim-New York: Georg Olms Verlag, 1973.

Risse's work is far more comprehensive than my own, since he includes not only formal logic, but what might be described as the logic of ideas.

On the other hand, his bibliography is arranged chronologically rather than alphabetically; and inevitably, given the scope of his work, he does not give full publication details and his indexes are minimal. Volume II contains only books, and it is to be hoped that the volume listing journal articles will appear before too long. (*)

I owe a great debt of gratitude to those people who went through an earlier version of this bibliography and provided me with a large number of extra references. In particular I would like to thank William McMahon, Jan Pinborg, Charles Schmitt, and Paul Vincent Spade. I would also like to thank the editorial staff of the Pontifical Institute of Mediaeval Studies for their helpful advice on organization and presentation, the staff of Inter-Library Loan at the University of Waterloo for their unfailing help, and the Canada Council for various grants which have enabled me to work in British libraries. Finally, I should like to thank the Humanities Research Council of Canada for aiding the publication of this book." (*Preface*, pp. VII-IX)

(*) [Bibliographia logica. III. *Verzeichnis der Zeitschriftenartikel zur Logik*. Hildesheim-New York: Georg Olms Verlag, 1979].

There is a continuation volume: Fabienne Pironet, *The Tradition of Medieval Logic and Speculative Grammar. A Bibliography (1977-1994)*, Turnhout: Brepols 1997.

3. ———. 1985. *Studies in Post-Medieval Semantics*. London: Variorum Reprints.

Reprint of 12 essays already published.

CONTENTS: Preface IX-X;

REFERENCE IN INTENSIONAL CONTEXTS

I 'For Riding is Required a Horse': A Problem of Meaning and Reference in Late fifteenth and Early sixteenth Century Logic - Vivarium XII. 1974; II 'I Promise you a Horse': A Second Problem of Meaning and Reference in Late fifteenth and Early sixteenth Century Logic (Parts 1 & 2) - Vivarium XIV. 1976; III Chimeras and Imaginary Objects: A Study in the Post-Medieval Theory of Signification - Vivarium XV. 1977;

PROPOSITIONS AND MENTAL LANGUAGE

IV Theories of the Proposition: Some Early sixteenth Century Discussions - Franciscan Studies 38. 1978 (1981); V The Structure of Mental Language: Some Problems Discussed by Early Sixteenth Century Logicians - Vivarium XX. 1982; VI Mental Language and the Unity of Propositions: A Semantic Problem Discussed by Early Sixteenth Century Logicians - Franciscan Studies 41. 1981 (1984);

SCHOLASTIC INFLUENCES ON JOHN LOCKE

VII "Do Words Signify Ideas or Things?" The Scholastic Sources of Locke's Theory of Language - Journal of the History of Philosophy XIX. 1981; VIII Locke on Language - Canadian Journal of Philosophy XIV/1. 1984;

LOGICAL ANALYSIS

IX The Doctrine of Exponibilia in the Fifteenth and Sixteenth Centuries - Vivarium XI. 1973; X Multiple Quantification and the Use of Special Quantifiers in Early Sixteenth Century Logic - Notre Dame Journal of Formal Logic XIX. 1978;

SEMANTIC PARADOXES

XI Thomas Bricot (d. 1516) and the Liar Paradox - *Journal of the History of Philosophy* XV. 1977; XII Will Socrates Cross the Bridge? A Problem in Medieval Logic - *Franciscan Studies* 46. 1976 (1977);

Addenda et Corrigenda; Index.

"With one exception (IX) the papers in this volume were written after my first book, *Language and Logic in the Post-Medieval Period* (Synthèse Historical Library 12, Dordrecht: Reidel 1974), and they are devoted to a single theme, the philosophy of language in the period from the late fifteenth to the late seventeenth century. The first group of papers (I, II, III) deals with problems of reference in intensional contexts, and the second (IV, V, VI) with problems concerning the nature of propositions and mental language. The last three groups of papers take up more specialized problems. VII and VIII deal with scholastic influences on John Locke's philosophy of language; IX and X discuss two areas of technical logical analysis which had a close bearing on semantic issues; and XI and XII discuss two types of paradox, one of which is clearly semantic, and one of which should perhaps be classified as pragmatic. Many of the issues had been touched on in my book, but here they are presented in much greater depth, on the basis of a closer analysis of the relevant sources. The papers also represent my growing awareness both of the importance of the medieval background to post-medieval philosophy, and of the diversity of intellectual currents which characterized the post-medieval period. For a summing-up of these matters, which will place the logicians discussed here in their proper historical context, I refer the reader to my chapter on logic and language in the *Cambridge History of Renaissance Philosophy*, edited by Charles B. Schmitt (Cambridge: Cambridge University Press, [1988]).

On re-reading the papers collected here, I found that in general I still agree with what I wrote. Nonetheless there are

some things that I would now do differently. In particular, I would edit the Latin texts, rather than presenting them in their raw form. I would also try to standardize my use of language. For instance, the verb 'supponere' is variously translated here as 'suppose' and 'supposit'. In this reprint the opportunity has been taken to correct misprints and simple mistakes in the texts themselves; more complicated mistakes are discussed in the *Addenda et Corrigenda*. Where there is, inevitably, an overlap of material I have sometimes used the *Addenda* to indicate where my most up-to-date treatment of the subject is found. I have also brought bibliographical references up to date, and I have added details of recent editions of Latin texts." (from the *Preface*)

4. ———. 2008. *Les Théories De L'analogie Du Xiie Au Xvie Siècle*. Paris: Vrin.

Conférences Pierre Abélard, Université de Paris-IV Sorbonne (2004).

Table des matières: Avant-propos par Irène Rosier-Catach 7; Préface de l'auteur 11; Chapitre premier: Les problèmes: logique, métaphysique, théologie 13; Chapitre II: Thomas d'Aquin: interprétations et malentendus 33; Chapitre III: L'analogie et les concepts: le virage vers l'intérieur 55; Chapitre IV: Autour de l'analogie: ambiguïté et métaphore 79; Bibliographie 105; Index nominum des auteurs avant 1650 119; Index nominum des auteurs modernes 121.

"Afin de donner au lecteur une idée plus précise du plan de mon exposé, je dirai que dans les trois premiers chapitres, j'essaierai d'expliquer le trajet qui mène des Catégories et des Réfutations sophistiques d'Aristote à la tripartition de l'analogie telle que Burley la présente. Dans le premier chapitre, je donnerai un bref historique de la réception des textes et de l'apparition de l'analogie d'attribution au ^{xii}e siècle. Je parlerai aussi des antécédents de la notion dans les textes des théologiens de la fin du ^{xii}e siècle et du début du ^{xiii}e siècle. Dans le chapitre il, je commencerai par un bref

aperçu de la pensée de Thomas d'Aquin au sujet de l'analogie en général, avant d'examiner l'analogie de proportionnalité plus en détail. Dans le chapitre in, nous serons de nouveau avec Gauthier Burley et sa doctrine des concepts analogiques. Pour terminer, je consacrerai le dernier chapitre à deux problèmes concernant le langage parlé ou écrit: quand faut-il désambiguïser les propositions en faisant des distinctions, et quel est le rôle de la métaphore dans les discussions des théologiens et logiciens du Moyen Âge?

Prenons comme point de départ la question de savoir pourquoi les auteurs du Moyen Âge ont cru nécessaire de développer une théorie de l'analogie sémantique. Afin de trouver une réponse, nous devons répondre à trois questions préliminaires: 1) Quelles sont les théories métaphysiques et théologiques qui ont produit l'analogie métaphysique? 2) Quelle est la théorie du langage qui prédominait? (3) Quels sont les textes canoniques qui donnaient les instruments que l'on pouvait utiliser pour résoudre le problème des rapports entre réalité et langage? Dans ce qui suit, j'esquisserai une réponse aux trois questions, avant de parler plus en détail des textes logiques. Ensuite je retournerai aux théologiens afin de parler d'une solution au problème des noms divins qui semble contenir les racines d'une théorie de l'analogie. Pour terminer ce chapitre, j'expliquerai comment l'arrivée des nouvelles traductions d'Aristote et des écrits arabes a mené à la théorie de l'analogie telle qu'on la retrouve chez Thomas d'Aquin. Évidemment je ne serai pas en mesure de donner les réponses avec toute la complexité qui s'impose, surtout à la première question, mais ces quelques remarques, même superficielles, pourront déjà nous indiquer la direction à suivre." (pp. 15-16)

BOOKS EDITED

1. Bricot, Thomas. 1986. *Tractatus Insolubilium*. Nijmegen: Ingenium Publishers.
Artistarium Vol. 6. Critical edition of the treatise by Thomas Bricot with an introduction, notes, appendices and indices by E. J. Ashworth.
Table of Contents: Introduction: 1. Thomas Bricot: Life and Works XIII; 2. The *Tractatus Insolubilium* XIV; 3. About this Edition XV; 4. Description of the Early Printed Editions Used XV; Notes to the Introduction XIX; Bibliography of Secondary Sources XXII; Edition of text: Table of Contents 5; Signs and Abbreviations 11; *Tractatus Insolubilium Magistri Thomae Bricot* 13; Notes to the Text 113; Appendices: Appendix One 123; Appendix Two 129; Appendix Three 138; Indexes: 1. Index of Names 147; 2. Index of Examples 149; 3. Subject Index 153-155.

"1. *Thomas Bricot: Life and Works*

Thomas Bricot was one of the men who laid the foundations for the last flowering of medieval logical doctrines which took place at the University of Paris in the first two decades of the sixteenth century. (1) Little seems to be known about his early life except that he came from Amiens. (2) He took his BA at Paris in 1478, his MA in 1479, and his doctorate of theology in March 1490. During the 1480s he taught philosophy at the Collège de Sainte-Barbe, but when he took his licence of theology in January 1490 he was a *bursarius* of the Collège des Cholets. After 1490 he held a variety of ecclesiastical and academic posts. He spent some time in Amiens; but by 1502 he was back in Paris. Between 1506 and 1516 he often served as dean of the faculty of theology; and he was both canon and penitentiary of Notre Dame. He died in Paris on April 10, 1516. His philosophical work belongs entirely to his early years in Paris.

Much of his activity was directed toward editing the works of others, including a 1487 edition of John Buridan's *Tractatus Summularum*. (3) He produced abbreviated versions of Aristotle's *Organon* and of his natural philosophy; (4) he wrote a series of questions on the *Analytica Posteriora*; (5) but most notably he edited and added questions to the commentaries on Aristotle and on Peter of Spain which had been written by the Paris master, George of Brussels. (6) Bricot's only original works seem to have been the *Tractatus Insolubilium* and the *Tractatus Obligationum* which were always published together and which received at least nine editions between 1489 and 1511. (7) The *Tractatus Obligationum* is largely based on the *De Obligationibus* of Marsilius of Inghen; (8) the *Tractatus Insolubilium* will be discussed below.

Bricot's works enjoyed considerable success in Paris in the last two decades of the fifteenth century as one can see from the number of editions printed there, as well as in other French centres. He was also known outside France. His abbreviation of the *Organon* was printed in Basel in 1492 and in Salamanca, ca.1496. It was printed together with a work by George of Brussels in Venice in 1506. (9) Bricot was prescribed to be read at the University of Vienna in 1499; (10) and some of his works were sold by the Oxford bookseller,

John Dorne, in 1520. (11) Indeed, as late as 1535 the University of Cambridge found it necessary to forbid the reading of Bricot. (12) However, I judge that his success was largely due to the usefulness of his texts as teaching manuals rather than to any great originality. The only doctrine of his which I know to have been discussed by other logicians was his solution to the problem of semantic paradoxes found in the *Tractatus Insolubilium*, to which I shall now turn.

2. The '*Tractatus Insolubilium*'

In the *Tractatus Insolubilium* Bricot discusses three approaches to the problem of semantic paradoxes. (13) In the second question he takes up the solution attributed to Ockham, (14) whereby the part of a proposition cannot supposit for the whole. Bricot did not favour this solution. In the third question he discusses two versions of a solution stemming from Peter of Ailly but reworked by George of Brussels. In the first question he presents his own view. This owes much to Roger Swyneshed, but avoids some of the more paradoxical consequences of Swyneshed's view. Bricot allows self-reference to be legitimate; and he treats simple insolubles as being straightforward categorical propositions. However, he revises the conditions under which a proposition is said to be true. An affirmative proposition is true if and only if (I) it signifies that things are as they are and (II) it does not signify itself to be false. On the other hand, a negative proposition needs to meet only one condition. Either (I) it signifies that things are not as they are not or (II) its contradictory signifies itself to be false. It is here that Bricot differs from Swyneshed, who had treated affirmative and negative propositions alike.

Among the authors who were to discuss Bricot's solution are found Pierre Tartaret; (15) David Cranston; (16) John Mair; (17) and Domingo de Soto. (18) In the version of his *De Insolubilibus* published in 1516, John Mair said explicitly that *opinio magistri nostri thome Briquot ... nunc est communis*. (19)

The *Tractatus Insolubilium* is noteworthy for its treatment of two other issues. First, there is a short discussion of non-semantic paradoxes. (20) Second, there is a very long discussion of the issue of *complexe significabilia* or the significates of propositions, when the latter are viewed as occurrent entities. (21) As with semantic paradoxes, I have discussed Bricot's treatment of these issues at length in other places, and will not dwell on them here.

As an appendix to my edition of the *Tractatus Insolubilium* I have included two short texts in which Bricot takes up the issue of semantic paradoxes once more, and a third text in which he discusses *complexe significabilia*." (pp. XIII-XIV)

2. Pauli, Veneti. 1988. *Logica Magna. Secunda Pars. Tractatus De Obligationibus*. Oxford: Oxford University Press.

Classical and Medieval Logic Texts V. Edited with an English Translation and Notes by E. Jennifer Ashworth. Contents; Introduction VII-XVI; Part One. 3; Part Two: Concerning *positio*; Chapter One: Against the Rules 101; Chapter Two: On Conjunctions 327; Chapter Three: On Disjunctions 335; Chapter Four: On Similars and Dissimilars 345; Part Three: Concerning *depositio*; Chapter One: Rules 369; Chapter Two: Theses 379; Chapter Three: Sophisms 379; Bibliography: I. Obligations Treatises 393; II. Other Sources 394; Indexes: Index of sophisms 398; Index of names 401; Index of doctrines 404-409.

"The Purpose of Obligations Treatises"

A contentious and as yet unresolved issue has to do with the purpose of obligations treatises. The treatises themselves do not offer much discussion on this point, being content to remark that the opponent in a disputation is to try to push the respondent into accepting a contradiction, whereas the respondent has to resist this, even when faced with the curious consequences of granting such a proposition as 'You do not exist.'²³ In the process both participants would have their knowledge of valid inferences thoroughly tested, for each proposition put forward would be such that it followed from preceding steps, or such that its negation followed, or such that neither it nor its negation followed. In this third case either it or its negation would enter the sequence as an extra premiss for further conclusions or non-conclusions. It should also be emphasized that the bulk of almost all treatises on obligations consisted of a series of sophisms which, as Edith Sylla has argued, the 'physical'

sophisms, formed an integral part of logic teaching, at least in fourteenth century Oxford, and were designed to develop a student's subtlety and skill in handling logical rules.²⁴ These remarks suggest that obligational disputations (if such were ever in fact held) had the primary function of providing oral exercise in formal logic, and hence were of mainly pedagogical significance.

This solution has been adopted by a number of authors; but reflection on the complex and sophisticated nature of the controversy between Swyneshed and others has led P.V. Spade to suggest that obligations treatises offer us an account of counterfactual reasoning.²⁵ This theory in turn has been criticized by E. Stump, who points out that the treatises reflect a number of diverse concerns, including 'epistemic logic, indexicals, propositional attitudes, and other issues in the philosophy of language.'²⁶ She also points out that in Burley at least there was 'a concern with special sorts of difficulties in evaluating consequences or inferences as a result of the disputational context in which the inferences occur.'²⁷

My own view is that there is probably something to be said for all these accounts. Insofar as the treatises described a routine to be followed in class-room disputations, the purpose could only have been that of testing a student's skill in formal logic, since truth was explicitly not an issue;²⁸ but the authors and readers of such treatises obviously welcomed the opportunity to discuss other matters in some depth. Paul himself was particularly concerned with the difference between use and mention, as will be seen from many of his sophisms. One must also bear in mind the often-noted link between treatises on obligations and treatises on insolubles. They go together not only in Paul, but in Swyneshed, Albert of Saxony and Strode, to mention but three names. This suggests a general interest in discussing all kinds of paradoxes, both semantic and non-semantic. Whatever the final answer is, reading Paul of

Venice should help us to arrive at it, since his *Tractatus de Obligationibus* is a compendium of all the main views current in the second half of the fourteenth century."

23 For detailed references, see Part 1, section 2, note 3.

24 Uditli Dudley Sylla, 'The Oxford calculators' in CH, 540-563.

25 See Spade, 'Some theories', pp. 1-2, for an account of the literature, and throughout for a defence of his thesis about counterfactual reasoning.

26 See Stump, 'Roger Swyneshed', pp. 169-174: 'The purpose and function of obligations', p. 171 n. 45 is particularly important for her discussion of Spade's thesis.

27 Stump in CH, p. 328.

28 For an account of the distinction between doctrinal disputations, which were designed to arrive at the truth of some claim, and obligational disputations, see E.J.

Ashworth, 'Renaissance man as logician: Josse Clichtove (1472-1543) on disputations', *History and Philosophy of Logic*, 7 (1986), 15-29.

3. Sanderson, Robert. 1985. *Logicae Artis Compendium*. Bologna: Editrice CLUEB.

Reprint of the second edition (1618, first anonymous edition 1615), edited with an introduction by E. J. Ashworth.

Contents: Editor's Introduction IX-LV; I. Robert Sanderson: Life and works XI; II. The history of logic in the Sixteenth century XVI; III. Logic in England XXIII; IV. The Oxford curriculum XXXII; V. An analysis of the *Logicae Artis Compendium* XXXV-LV.

Logicae artis compendium. Pars prima 11; Pars secunda 81; Pars tertia 129; Appendix prima 243; Appendix posterior 331; Indices; Index of pre-twentieth century authors and works 371; Index of twentieth-century authors 375; Index of names used in examples 377; Index of Latin terms 379-382.

"V. An Analysis of the *Logicae Artis Compendium*.

In this section I intend to relate Sanderson to his background by focussing on four specific aspects of the

Logicae artis compendium. I shall discuss (i) the nature of logic; (ii) the medieval heritage; (iii) changes in syllogistic; (iv) method and the art of discourse.

(i) The Nature of Logic

I shall begin by analyzing Sanderson's first chapter, which in a brief compass touches on a range of classificatory issues that were the subject of lively debate during the sixteenth century. The first of these issues concerns the very use of the word 'logica' as opposed to 'dialectica'. It was a medieval commonplace that the word 'dialectica' could be used in two senses, a broad sense which equated dialectic with logic, and a narrow sense, whereby dialectic was that kind of probable argumentation discussed in the *Topics*. (94) Which word was used for the study of all kinds of argumentation was a matter of taste. Peter of Spain had used 'dialectica'; John Buridan and others preferred logica'. However, in the sixteenth century greater doctrinal significance became attached to the word 'dialectica'. Ramus argued at some length that Aristotle's 'Organon' did not as was commonly thought discuss three special kinds of logic, i.e. apodictic or demonstrative, dealing with necessary material; dialectic, dealing with probable material; and sophistic, dealing with fallacious material. Instead, there was one general doctrine, which included a general doctrine of invention. (95) Hence, there was no specialized use of the term 'dialectic' and it both could and should properly be applied to logic as a whole. In response Zabarella, for instance, argued that 'dialectic' did name a distinct part of logic, and should be used as the name of that part only. (96) Sanderson allows the wider use; but his remark that logica' is 'Synecdochiche Dialectica' is significant, given that synecdoche is the figure of speech whereby a part is put for the whole.

Sanderson next classifies logic as an 'ars instrumentalis'. Once more, his choice of words has to be understood in the light of sixteenth century polemic. There were four ways in which logic could be classified. (97) Peter of Spain had

called it both an art and a science; scholastics tended to call it a science; humanists tended to call it an art;" and Zabarella called it neither an art nor a science but an instrumental habit. Giulio Pace in turn argued that an instrumental habit was in fact an art;" and it seems to be this usage that Sanderson has adopted. Moreover, Sanderson was fully conscious of the implications of his choice, for in Appendix 1, chapter 2, pp. 31-37, he gives a sample speech on the genus of logic. He cites Zabarella (as well as Keckermann) and he concludes that logic is properly speaking an art. In this he is departing from some of his English predecessors, especially Seton, who had classified logic as a science. (100)

The final part of Sanderson's initial characterization of logic is the phrase "dirigens mentem nostram in cognitionem omnium intelligibilium." This definition is very similar to one found in Keckermann, who may well have influenced Sanderson here. Keckermann wrote "[Logica] Est ars humani intellectus operationes sive Hominis cogitationes ordinandi & dirigendi in rerum cognitione." (101) According to the Conimbricenses, the view that logic directed the operations of the mind was found in Fonseca and Suarez, and it is not found explicitly in the *antiquiores*. (102) In order to understand the full significance of Sanderson's definition, it is necessary to relate his remark about directing the mind to his subsequent discussion of the divisions of logic, and it is also necessary to explore his reference to the knowledge of intelligible things in relation to his subsequent classification of the objects and subjects of logic." (pp. XXXV-XXXVIII)

(...)

"Conclusion.

Tolstoi's view of history as an inevitable process, which the actions of Napoleon affect no more and no less than those of the meanest soldier, is an overstatement. Yet it is true that the textbook-writers and schoolteachers of a period may be

as important as the leading intellectuals, for it is by these minor figures that all innovations are accepted, altered, and made into the new commonplace. To concentrate solely upon the great thinkers is to obscure the reality of university and school, of the main stream of orthodoxy which lies behind these thinkers and which feeds them. To judge the true stature of such men as Locke it is helpful to know both what they were taught and how their teaching affected others; but to judge the intellectual quality of the seventeenth century as a whole, such a wider knowledge is essential. Great men stand to some extent outside their period, and it is only the minor thinkers who can provide a safe basis for generalization about that period. This fact alone would be a sufficient basis for the investigation of Sanderson's *Logicae artis compendium*. One cannot claim that it shows new insights into formal logic or the philosophy of language, but it is clearly written and well organized; and, given its success as a logic textbook, it is a valuable historical document. A study of this book will throw much light upon the training and the preoccupations of those who used it; and it will help us to understand not only the development of logic textbooks in seventeenth century England, but also the type of education offered at Oxford and Cambridge." (pp. LIV-LV)

(94) See, e.g., the commentary by John Dorp in *Perutile compendium totius logice Joannes Buridani* (Venice 1499, facsimile edition Frankfurt am Main, 1965), sig.a 2ra. For discussion see Pierre Michaud-Quantin, "L'emploi des termes logica et dialectica au moyen age" in *Arts libéraux et philosophie au moyen age* (Montreal, Institut d'études médiévales, Paris, J. Vrin, 1965), pp. 855-862. See also *Commentarii Collegii Conimbricensis in universam dialecticam Aristotelis* (Cologne, 1607: facsimile edition Hildesheim, New York, 1976) col. 25.

(95) Petrus Ramus, *Scholarum dialecticarum seu animadversionum in Organum Aristotelis*, in *Scholae in*

tres primas liberales antes (Francofurti 1581, facsimile edition, Frankfurt am Main 1965), pp. 40-43. He suggested (p. 40) that sophistic was not properly a part of the art of logic, just as 'barbarismorum doctrina' is not properly a part of the art of grammar. Virtue is homogeneous but vices are heterogeneous, he remarked.

(96) Jacobus Zabarella, *De natura logicae* in *Opera Logica* (Cologne 1597, facsimile edition Hildesheim 1966), col. 20. Cf. the discussion by Pedro da Fonseca, *Instituições Dialécticas / Institutionum dialecticarum libri octo*, edited by J. Ferreira Gomes (Universidade de Coimbra, 1964), p. 22. Fonseca remarked that the definition of dialectic as dealing with the probable could not apply to dialectic in the wide sense.

(97) For discussions of these alternatives (and a fifth alternative, that logic is a faculty) see Conimbricensis, cols. 33-37; Zabarella, *De natura logicae*, cols. 5-24.

(98) One favourite phrase of those in the humanist tradition was "ars disserendi". Agricola wrote, for instance, "Erit ergo nobis hoc pacto definita dialectice, ars probabiliter de qualibet re proposita disserendi": Rodolphus Agricola, *De inventione dialectica* (Cologne 1523, facsimile edition Frankfurt am Main, 1967), p. 193. For discussion and further references see Ong, *Ramus, Method and the Decay of Dialogue*, pp. 178-179; and Conimbricensis, cols. 25-27.

(99) Julius Pacius, *In Porphyrii Isagogen et Aristotelis Organum Commentarius Analyticus* (Frankfurt 1597, facsimile edition, Hildesheim 1966), p. 2a: "Ergo logica est habitus instrumentalis, id est ars."

(100) Seton (sig. A 59 wrote: "Dialectica est scientia, probabiliter de quovis themate disserendi." Cf. John Sanderson, *Institutionum dialecticarum* (Oxoniae 1602) p. 3 and Samuel Smith, *Aditus ad logicam* (Oxonii, 1684, editio nona) p. I, for similar definitions.

(101) Bartholomaeus Keckermann, *Praecognitorum logicorum tractatus tres* in *Operum omnium quae extant*

tomus Primus (Genevae, 1614), col. 90-91.
(102) Conimbricensis, col. 42.

ARTICLES 1967-1976

1. Ashworth, Earline Jennifer. 1967. "Joachim Jungius (1587-1657) and the Logic of Relations." *Archiv für Geschichte der Philosophie* no. 49:72-85.

"In histories of logic, the sixteenth and seventeenth centuries, at least until Leibniz began his work, are either ignored or are referred to with the utmost brevity as being hardly worthy of attention (1).

(...)

However, there is one name which appears with fair regularity in the literature, and that is the name of Joachim Jungius, whose *Logica Hamburgensis* is often contrasted favorably with the Port Royal Logic. Both Bochenski and the Kneales allow this book, published in 1638 for the use of the Classical Schools at Hamburg, to be one of the better textbooks of the period (2); while Heinrich Scholz in his influential *Geschichte der Logik*, not only praises it highly, but discusses Jungius's contributions to logic at some length (3). More impressive yet are the varied tributes paid to Jungius by Leibniz, who called him "one of the most able men that Germany has ever had" (4); compared him with Galileo and Descartes (5); and said that "he surpassed all others in the knowledge of true logic, not even excepting the author of the *Artis Cogitandi* [Arnauld]" (6). Of course, much of Leibniz's praise arose from his admiration of Jungius's varied activities, his career as a medical doctor, his contributions to physics, botany, mineralogy, theology, educational theory, and his foundation of the first-learned society in Germany (7). More specifically, however, Leibniz admired Jungius for his demonstration that not all

inferences could be reduced to syllogistic form, and he praised his logical acuteness in this respect on a number of occasions (8). The purpose of this paper is to shed some light on a much neglected area of the history of logic by inquiring whether Jungius's treatment of non-syllogistic or, in this context, relational inferences, is commensurate with the logical distinction which has been claimed for him; and, more briefly, to see whether there are any further factors which set Jungius above other logicians of the same period." (pp. 72-73)

(...)

"In conclusion one may say that although the *Logica Hamburgensis* shares in all the faults of its age, the superficiality, the lack of metalogical perceptiveness, it also has merits which are peculiarly its own. The body of truth-functional logic contained in it would alone be sufficient to distinguish Jungius from his contemporaries, and still more impressive, given the background, is his use of relational inferences. It is true that the argument *a divisio ad composita* is both unoriginal and unremarkable, despite Scholz's praise; it is true that the inversion of relations is found in other contemporary logicians; while discussion of the oblique syllogism was quite usual; but the argument *a rectis ad obliqua* was both original and clearly presented. Moreover, Jungius seems to have been fully conscious that relational inferences were inferences in their own right, to be treated as such and not to be hidden away among the categories. Without this realization, any amount of originality in the discovery of actual inferences could have gone for nought. Hence, while the verdict of Heinrich Scholz needs modification, his praise of Jungius is basically justified, for it was he who brought the logic of relations to the attention of his successors, especially Leibniz." (p. 85)

(1) In this context, it must be acknowledged that historians of thought have been kinder than those devoted strictly to formal logic. For instance, Peter Petersen's seminal work,

Geschichte der aristotelischen Philosophie im protestantischen Deutschland, Leipzig 1921. contains much material of interest to the historian of logic. The publication in 1964 of Dr. Wilhelm Risse's work, *Die Logik der Neuzeit. 1. Band. 1500—1640*, Stuttgart-Bad Cannstatt 1964, marks a great step forward in the study of the field.

(2) I. Bochenski, *History of Formal Logic*, translated and edited by Ivo Thomas, Notre Dame, Indiana, 1961, p. 257, W. & M. Kneale, *The Development of Logic*, Oxford 1962, p. 313.

(3) H. Scholz, *Geschichte der Logik*, Berlin 1931, pp. 41—2.

(4) "Letter to Christian Habbeus, Jan. 1676", *Samtliche Schriften und Briefe*, edited by the Prussian Academy of Sciences (1923) 1st Series, Vol. I, p. 443.

(5) *Opuscles et fragments inédits de Leibniz*, edited by L. Couturat, Paris 1903, p. 345.

(6) "Letter to Koch, 1708", quoted by Couturat in *La logique de Leibniz*, Paris 1901, note 4, p. 74.

(7) *The Societas Ereunetica*, founded in Rostock in 1622.

Unhappily, it lasted at most only two years. For further information on Jungius's life, see the following works:

G. Guhrauer, *Joachim Jungius und sein Zeitalter*, Stuttgart und Tübingen 1850; *Beiträge zur Jungius-Forschung*.

Prolegomena zu der von der Hamburgischen Universität beschlossenen Ausgabe der Werke von Joachim Jungius (1587—1657), edited by A. Meyer, Hamburg 1929; Joachim Jungius-Gesellschaft der Wissenschaften: *Die Entfaltung der Wissenschaft. Zum Gedenken an Joachim Jungius*, Hamburg 1957. The second work mentioned contains an extensive bibliography.

(8) *Opuscles et fragments inédits*, p. 287, p. 330, p. 406.

2. ———. 1968. "Propositional Logic in the Sixteenth and Early Seventeenth Centuries." *Notre Dame Journal of Formal Logic* no. 9:179-192.

"Until recently, historians of logic have regarded the early modern period with unremitting gloom. Father Boehner, for

instance, claimed that at the end of the fifteenth century logic entered upon a period of unchecked regression, during which it became an insignificant preparatory study, diluted with extra-logical elements, and the insights of men like Burleigh into the crucial importance of propositional logic as a foundation for logic as a whole were lost.(1) Nor is this attitude entirely unwarranted, for the new humanism in all its aspects was hostile to such medieval developments as the logic of terms and the logic of consequences. Those who were devoted to a classical style condemned medieval works as unpolished and arid, and tended to subordinate logic to rhetoric; while those who advocated a return to the original works of Aristotle, freed from medieval accretions, naturally discounted any additions to the subject matter of the *Organon*.

But it would be a mistake to dismiss the logical work of the period too readily. In the first place, the writings of the medieval logicians were frequently published and widely read. To cite only a few cases, the *Summulae Logicales* of Petrus Hispanus received no fewer than 166 printed editions;(2) Ockham's *Summa Totius Logicae* was well known; the 1639 edition of Duns Scotus included both the *Grammaticae Speculativae* attributed to Thomas of Erfurt and the very interesting *In Universam Logicam Quaestiones of Pseudo-Scotus*; (3) the *Logica* of Paulus Venetus was very popular; and a number of tracts by lesser known men like Magister Martinus and Paulus Pergulensis were printed. Moreover, since logic still played such a preeminent role in education, contemporary scholars were not backward in producing their own textbooks; and numerous rival schools of logic flourished.(4) The purpose of this paper is to make a preliminary survey of some of the wealth of material available from the sixteenth and first half of the seventeenth centuries, in order to ascertain how much of the medieval propositional logic had in fact been

retained.(5) It will become clear that the situation was better than has been thought." (p. 179)

(1) See P. Boehner, "Bemerkungen zur Geschichte der De Morgansche Gesetze in der Scholastik," *Archiv für Philosophie*, 4 (1951), p. 145.

(2) See J. P. Mullally, *The Summulae Logicales of Peter of Spain* (Notre Dame, Indiana, 1945), p. LXXVIII.

(3) In Joannes Duns Scotus, *Opera Omnia*, edited by L. Wadding (Lugduni, 1639), Vol. I.

(4) For a comprehensive account of the various schools of logic, see Dr. Wilhelm Risse, *Die Logik der Neuzeit. I. Band 1500-1640*, (Stuttgart-Bad Cannstatt, 1964).

(5) I have limited myself to material in the British Museum and the Cambridge University Library for the purposes of this introductory survey.

3. ———. 1968. "Petrus Fonseca and Material Implication." *Notre Dame Journal of Formal Logic* no. 9:227-228.

"Little attention has been paid to the question of whether material implication was recognized in the sixteenth and seventeenth centuries, although it has been argued that John of St. Thomas was aware of the equivalence ' $(p \supset q) \equiv (\sim p \vee q)$ '.(1) The other usual test-case for a knowledge of material implication is ' $(p \supset q) \equiv \sim(p \cdot \sim q)$ ' and I intend to show that the sixteenth century Jesuit, Petrus Fonseca, whose *Institutionum Dialecticarum libri octo* was one of the most popular textbooks of the period, (2) was well acquainted with this second equivalence." (p. 227)
(...)

"One must conclude that Fonseca was aware both of strict and of material implication." (p. 228)

(1) See Ivo Thomas, "Material Implication in John of St. Thomas", *Dominican Studies* 3 (1950), p. 180; and John J. Doyle, "John of St. Thomas and Mathematical Logic", *The New Scholasticism* 27 (1953), pp. 3-38.

(2) First published in 1564, it went into at least 44 editions. See Wilhelm Risse, *Die Logik der Neuzeit*, Band I. 1500-

1640 (Stuttgart-Bad Cannstatt, 1964), p. 362, n. 395.

4. ———. 1969. "The Doctrine of Supposition in the Sixteenth and Seventeenth Centuries." *Archiv für Geschichte der Philosophie* no. 51:260-285.

"The purpose of this paper is to make a preliminary survey of some of the wealth of material available from the sixteenth and first half of the seventeenth centuries, in order to ascertain how much of the medieval propositional logic had in fact been retained.(5) It will become clear that the situation was better than has been thought.

The vocabulary and organization of the textbooks under consideration were fairly standard. The discussion of the proposition [*Enuntiatio*, *Propositio*, or, in Ramist texts, *Axioma*] followed sections on the predicaments and predicables or the Ramist equivalent, on arguments.

Medieval logicians had called the compound proposition 'hypothetical', but sixteenth and seventeenth century writers more usually referred to *enuntiatio coniuncta* or *composita*, sometimes with a note to the effect that it is vulgarly or improperly called 'hypothetical'.(6) Melancthon retained the name 'hypothetical', as did one or two others.(7) The Spanish scholastic, Petrus Fonseca, discussed the whole question in some detail, saying that the name 'hypothetical' most properly applies to conditional propositions, but can also be used of disjunctions, because they imply a conditional.(8) A compound proposition was generally said to consist of two (or more) categorical propositions, joined by one (or more) of a list of propositional connectives. The assumption that the truth of these propositions depended upon the truth of the parts, the kind of connective employed, and in certain cases the relationship between the parts usually remained implicit, but the seventeenth century German logician, Joachim Jungius, said explicitly that truth or falsity depended on "the kind of composition involved"; (9) while Alsted had written previously that truth or falsity depended "on the disposition of parts". (10)

There was much agreement as to the kinds of compound proposition to be considered. Conditional, conjunctive, and disjunctive propositions were always mentioned. Those logicians in the scholastic tradition, like Campanella, Cardillus, Fonseca, Hunnaeus and John of St. Thomas, included causal and rational propositions, as did some outside the tradition like Cornelius Martini and Jungius, who discussed the causal proposition at length. Only a few, including Fonseca and C. Martini, mentioned the temporal and local propositions which had been discussed by such medieval logicians as Ockham and Burleigh; but both Ramus and Burgersdijck spoke of 'related' propositions which exhibit 'when' and 'where' among other connectives. (11)

Ramus and those influenced by him added a new kind of compound proposition, the discrete.

Although compound propositions were rarely called 'hypothetical', the traditional title of 'hypothetical syllogism' was usually retained for the discussion of propositional inference forms. Only a few spoke of *syllogismus compositus* or *coniunctus*. (12) In all cases the categorical syllogism was discussed before the hypothetical, and usually such matters as sorites, example, enthymeme and induction also came first. A few books had, in addition, a section on the rules for valid inference or *bona consequentia*.

Melancthon in his *Erotemata Dialectices* included a chapter entitled *De Regulis Consequentiarum* after his discussion of sorites and before his discussion of the hypothetical syllogism. Alsted placed his canons of material consequence in the same position; while the remarks of Caesarius come after his section on the hypothetical syllogism. On the other hand, the three scholastics, Campanella, Fonseca, and Hunnaeus introduced their rules for good consequence before they discussed the syllogism, thus approaching most closely to the later medieval order of priorities." (pp. 179-180)

(...)

"It is indeed true that the logicians of the sixteenth and early seventeenth centuries failed to appreciate the fundamental importance which the logicians of the later middle ages had attributed to propositional logic; and a number of the texts I have been concerned with even give instructions for the reduction of hypothetical syllogisms to categorical syllogisms.(88) On the other hand, the amount of propositional logic retained was by no means negligible, and some authors, such as Fonseca and Jungius, included a great deal. No startling advances were made, but there were innovations in detail, like Jungius's discussion of the posterior subdisjunctiva, or the linking of the conditional with a negated conjunction.

One may therefore conclude that, while the period is not one of great excitement for the historian of logic, it merits considerably more attention than it has been granted in the past." (p. 188)

(5) I have limited myself to material in the British Museum and the Cambridge University Library for the purposes of this introductory survey.

(6) Cf. Thomas Campanella, *Philosophiae Rationalis Partes quinque. 2. Dialectica* (Parisiis, 1638), p. 334; Augustinus Hunnaeus, *Dialectica seu generalia logices praecepta omnia* (Antverpiae, 1585), p. 147; and Amandus Polanus, *Logicae libri duo* (Basileae, 1599), p. 147.

(7) Philippus Melancthon, *Erotemata Dialectices*, (---, 1540?), p. 96. Cf. Johannes Caesarius, *Dialectica* (Coloniae, 1559), Tract. IV [No pagination]; and Cornelius Martini, *Commentationum logicorum adversus Ramistas* (Helmstadii, 1623), p. 204.

(8) Petrus Fonseca, *Institutionum Dialecticarum libri octo* (Conimbricae, 1590), Vol. I, p. 173. Cf. Abelard's discussion of the same point in his *Dialectica*, edited by de Rijk (Assen, 1956), p. 488.

(9) Joachim Jungius, *Logica Hamburgensis*, edited by R. W. Meyer (Hamburg, 1957), p. 98. '([Enuntiatio conjuncta] . . . secundum illam compositionis speciem, veritatis et falsitatis est particeps".

(10) J. H. Alsted, *Logicae Systema Harmonium* (Herbonae Nassoviorum, 1614), p. 321. "Compositi axiomatis veritas & necessitas pendet specialiter ex partium dispositione".

(11) Petrus Ramus, *Dialecticae libri duo* (Parisiis, 1560), p. 126; and Franco Burgersdijck, *Institutionum Logicarum libri duo*, (Lugduni Batavorum, 1634), pp. 166-167.

(12) E.g., Fonseca, op. cit., vol. II, p. 100, refers to "syllogismus coniunctus"; and Polanus, op. cit., p. 165, refers to "syllogismus compositus".

(88) E.g., Conrad Dietericus, *Institutiones Dialecticae* (Giessae Hassorum, 1655), p. 312; Fortunatus Crellius, *Isagoge Logica* (Neustadii, 1590), pp. 243-246; and Jungius, op. cit., *passim*.

5. ———. 1970. "Some Notes on Syllogistic in the Sixteenth and Seventeenth Centuries." *Notre Dame Journal of Formal Logic* no. 11:17-33.

"Although a number of different schools of logic flourished in the sixteenth and seventeenth centuries (2), they seem to have shared a lack of interest in formal logic which expressed itself in a greater concern for the soundness than for the validity of arguments. An example of this tendency is the emphasis placed upon the Topics, or the ways of dealing with and classifying precisely those arguments which were not thought to be susceptible of formal treatment, since they depended for their effectiveness upon the meaning of the terms involved.(3) It is true, of course, that the Humanists and, later, the Ramists, devoted considerably more space to the Topics and to the "invention" of arguments than did the scholastics, the Aristotelians, the Philippists or followers of Melancthon, or even the eclectics; but this was balanced by the greater devotion of the other schools to the categories, the predicables, the pre-, post-, and even extra-

predicaments.(4) However, there was one subject which was both formal in inspiration and common to all text-books, namely, the syllogism; and as a result it provides a very good test of how much interest and competence in purely formal matters was retained during these centuries of logical decline." (p. 17)

(...)

"In the light of this discussion, I find myself driven to the reluctant conclusion that genuine competence in formal logic was not often to be found in this period, at least where syllogistic was concerned. One distressing feature is the lack of discussion of issues like the definition of the major and minor terms or the status of singular propositions.

Frequently one is left to guess differences in meta-theory from differences in usage.

And even where there is discussion, it is not always adequate. For instance, a doctrine of the relationship between terms was used to exclude the fourth figure without any realization that this doctrine could not properly be applied to the first, second or third figures. Another characteristic of logicians of this period was a random introduction of new modes. What reason could be given for listing only two indirect modes of the second figure, or for allowing singular terms to appear only in third figure syllogisms? Finally, many logicians introduced frankly extra-logical considerations into their discussions. What was natural, what was fitting, what people tended to say, were all thought to be relevant issues. Only Arnauld and Alsted and, to a lesser extent, Campanella, present the right doctrines for the right reasons, unencumbered by extraneous material." (pp. 27-28)

(1) This study is based on an examination of printed texts in the British Museum, the Cambridge University Library, and the Bodleian. I do not mention Leibniz because he was not a writer of logical textbooks.

(2) For a comprehensive account of the various schools, see Wilhelm Risse, *Die Logik der Neuzeit. I Band. 1500-1640* (Stuttgart-Bad Cannstatt, 1964).

(3) The situation is rather different today. For instance, much of the material discussed under the Topic of *genus* and *species* could be dealt with by set theory, and much of that discussed under the Topic of part and whole could be formalized by the methods of S. Lesniewski. The *Topics*, as treated by Boethius, Abelard, and Peter of Spain, are discussed by Otto Bird, in his article "The Formalizing of the Topics in Mediaeval Logic," *Notre Dame Journal of Formal Logic*, vol. 1 (1960), pp. 138-149.

(4) For a typical account of these matters see Joachim Jungius, *Logica Hamburgensis*, edited by R. W. Meyer (Hamburg, 1957), Book I.

6. ———. 1972. "The Treatment of Semantic Paradoxes from 1400 to 1700." *Notre Dame Journal of Formal Logic* no. 13:34-52.

"During the middle ages, semantic paradoxes, particularly in the form of "Socrates speaks falsely", where this is taken to be his sole utterance, were discussed extensively under the heading of *insolubilia*. Some attention has been paid to the solutions offered by Ockham, Buridan, and Paul of Venice, but otherwise little work seems to have been done in this area.

My own particular interest is with the generally neglected period of logic between the death of Paul of Venice in 1429 and the end of the seventeenth century; and the purpose of this paper is to cast some light both upon the new writings on paradoxes and upon the marked change in emphasis which took place during the sixteenth century. Although the traditional writings on *insolubilia* were available throughout the period, the detailed discussions of the fifteenth and early sixteenth centuries were soon entirely replaced by briefer comments whose inspiration seems wholly classical. Even the mediaeval word *insolubile* was replaced by the

Ciceronian *inexplicabile*. In this area at least there is strong evidence for the usual claim that the insights of scholastic logic were swamped by the new interests and studies of Renaissance humanism." (p. 34)

(...)

"Whether any of these solutions is likely to bear fruit today is for the reader to decide. It is, however, clear that the writers of the fifteenth and early sixteenth century were inspired by a genuine interest in problems of logic and language, and that they handled them with the finest tools available. That their discussions should have been so completely ignored by subsequent logicians, some of whom were doubtless their pupils, is surprising, given both the availability of their books and the persistence of other traditional doctrines like supposition. (81)" (p. 45)

(81) See my article, "The Doctrine of Supposition in the Sixteenth and Seventeenth Centuries", *Archiv für Geschichte der Philosophie* vol. 51 (1969), pp. 260-285.

7. ———. 1972. "Strict and Material Implication in the Early Sixteenth Century." *Notre Dame Journal of Formal Logic* no. 13:556-560.

"One of the favorite games played by historians of logic is that of searching their sources for signs of the Lewis-Langford distinction between strict and material implication. There are three ways of going about this, but the first two are often reminiscent of the conjurer searching for his rabbit, and only the third has real merit, for it alone involves the study of what was said about the conditional as such. I shall look at each way in turn, in relation to writers of the early sixteenth century." (p. 556)

(...)

"I think it is fair to conclude by saying that some early sixteenth century logicians were beyond doubt aware of the distinction between strict and material implication; and that no special pleading is necessary to establish this." (p. 560)

8. ———. 1972. "Descartes' Theory of Clear and Distinct Ideas." In *Cartesian Studies*, edited by Butler, Ronald Joseph, 89-105. Oxford: Basil Blackwell.

"It is widely agreed that Descartes took ideas to be the objects of knowledge and that his theory of clear and distinct ideas arose from his attempt to find a way of picking out those ideas whose truth was so certain and self-evident that the thinker could be said to know them with certainty. To say of an idea that it is clear and distinct was, he believed, to say of it both that it was certainly true and that any claim to know it was justified. No other criterion need be appealed to. It is at this point, however, that most of those who set out to expound Descartes' theory of knowledge are brought to a standstill. The part played by clear ideas is obvious enough, but what did Descartes mean by 'clear and distinct'? This paper is an attempt, not to make an original contribution to the study of Descartes, but to elucidate his terms and evaluate his criterion in the light of what both he and others have written." (p. 89)

(...)

"The fact that Descartes adopted the word 'idea' is itself significant. When scholastic philosophers discussed human cognition, they spoke of the mind as containing concepts (*species, intentiones*). They claimed that these concepts originated through our sense perceptions, and hence that they stood in some relation to external objects. The term 'concept' was contrasted with the term 'idea'. Ideas were the eternal essences or archetypes contemplated by God, and the question of their external reference did not arise. They were an integral part of God's mind. God could create instances of one of his ideas, but his idea was in no way dependent upon the existence of such instances. Descartes took the word 'idea' and applied it to the contents of the human mind because he wanted to escape the suggestion that these contents must be in some sense dependent on the external world as a causal agent. (9) He wished to establish

the logical possibility that a mind and the ideas contained within it are unrelated to other existents, and can be discussed in isolation from them.

Descartes saw the term 'idea' as having a very wide extension.

He said “ . . . I take the term idea to stand for whatever the mind directly perceives,”(10) where the verb 'perceive' refers to any possible cognitive activity, including sensing, imagining and conceiving.(11) Thus a sense datum, a memory, an image, and a concept can all be called ideas. This, of course, leads to the blurring of distinctions. For Descartes, “I have an idea of red” may mean that I am now sensing something red, or that I have a concept of the colour red, even if I am not now picking out an instance of that concept. Moreover, when Descartes speaks of an idea, he may be taking it as representative of some object or quality in the physical world, as when he says “I have an idea of the sky and stars,” or he may be referring to the meaning he assigns to a word, as when he says “I have an idea of substance.” Nor does he make any distinction between “having an idea” and “entertaining a proposition.” Such statements as “Nothing comes from nothing” and “The three angles of a triangle are equal to two right angles” are categorized as 'common notions',(12) and are included among the contents of the mind. Descartes does remark that in some cases an idea may be expressed by a name, in other cases by a proposition,(13) but he does not bother to pursue this line of inquiry.

One of the characteristics of an idea is 'objective reality', a scholastic phrase which Descartes adopted, but used in a new way. In scholastic writings the terms 'subjective' and 'objective' have meanings which are the reverse of the modern meanings. An object like a table exists subjectively or as a subject if it has spatio-temporal existence, if it is real or actual. In contrast, the concept of a table can be looked at as having two kinds of existence. The concept *qua* concept

has formal existence, but the concept as having some specifiable content is said to have objective existence, or existence as an object of thought. The concepts of a table and of a chair are formally similar but objectively different. So far as subjective realities were concerned, the scholastics assigned them different grades of reality according to their perfection and causal power. For instance, a substance is more perfect and causally more efficacious than an accident, hence a man has a higher grade of reality than the colour red.

It was also held that every effect had a cause with either an equal or a higher grade of reality. These doctrines were not seen as having any relevance to concepts. As formally existent, a concept has of course to have some cause, but the content of the concept was not seen as having any independent reality. Descartes, however, felt that the objective reality could be considered independently of its formal reality, and that it must be graded just as subjective reality was graded. The idea of a man, he felt, has more objective reality than the idea of a colour. Moreover, the cause of the idea containing a certain degree of objective reality must have an equal or greater degree of subjective reality. For instance, the idea of God has so high a degree of objective reality that only God himself is perfect enough to be the cause of such an idea.(14)" (pp. 91-93)

(...)

"Although Descartes struggled to defend his criterion, his struggles ended in an impasse. He had made the mistake of trying to prove too much. He had wanted to develop an introspective technique by which he could be sure of recognizing those ideas which were objects of certain knowledge; but such an enterprise was doomed from the start. He could only escape from the objection that nothing about an idea can justify us in making judgment about its external reference by entering into an uneasy and unjustifiable alliance with God; and by such an alliance he

negated his claim that a single criterion for true and knowable ideas could be found." (p. 105)

(9) E. S. Haldane, G. R. T. Ross (eds.) , *The Philosophical Works of Descartes*, (Cambridge, 1911) [cited as 'HR'] vol. II, 68.

(10) HR II, 67-8.

(11) HR I, 232.

(12) HR I, 239.

(13) C. Adam P. Tannery, *Oeuvres de Descartes* (Paris 1897-1913) [cited as 'AT'] AT III, 395.

(14) HR I, 161-170.

9. ———. 1973. "Are There Really Two Logics?" *Dialogue. Canadian Philosophical Review* no. 12:100-109.

"As a historian of logic, I am frequently puzzled by the things which people have to say about the relationship between mathematical logic and some other kind of logic which is variously described as 'intentional' and 'traditional.' Part of my puzzlement arises from my failure to understand precisely what kind of system is being offered under the guise of intentional logic. I have always taken it that logic is concerned with valid inferences, with showing us how we may legitimately derive a conclusion from a set of premisses; yet the validation of inferences seems to be the least of the concerns of the intentional logician. He says that it can be done, but he does not bother to show us how. My purpose in this paper is to list some of the sources of my puzzlement in the hope that an exponent of intentional logic will show me how they can be resolved, and how their resolution will contribute to the building of a system (however informal) in which different types of argument can be validated."

10. ———. 1973. "Existential Assumptions in Late Medieval Logic." *American Philosophical Quarterly* no. 10:141-147.
"There are three types of existential assumption that are commonly made by logicians: (1) that subject terms refer to non-empty classes; (2) that proper names have referents;

and (3) that formulas are to be interpreted only within non-empty domains. In the standard first-order quantificational calculus with constants, the second and third of these assumptions are retained, but the first, which is attributed to traditional syllogistic, has been abandoned.

Subject terms may refer to empty classes, and a distinction can be drawn within the system between those inferences which are valid only for non-empty classes and those which are valid for both empty and non-empty alike. For instance, given the assumption that universally quantified propositions whose subject terms refer to empty classes are true, but that existentially quantified propositions whose subject terms refer to empty classes are false, it turns out that the inference from "All *A*s are *B*" to "Some *A*s are *B*" only holds with the addition of the premiss, "There is at least one *A*." More recently, systems have been constructed in which the other two assumptions have also been discarded. Their valid formulas are valid in both empty and non-empty domains, and non-denoting constants are admitted. Any inference whose validity depends on the assumption that the domain of interpretation is non-empty, or that a constant denotes, is distinguished from the others by the presence of an extra premiss.⁽¹⁾ Thus, what was an assumption implicitly applied to all cases, is now made explicit and is shown to apply only to a subset of formulas within the system.

It is frequently assumed that medieval logic operated with a group of implicit existential assumptions similar to those I have mentioned, but this view is erroneous. Late medieval logicians were just as concerned as contemporary logicians to deal with non-denoting terms within their systems, and to draw explicit distinctions between those inferences whose validity involves existential assumptions and those whose validity does not involve existential assumptions. It is inappropriate to ask whether they took their formulas to be valid within the empty domain or not, both because they

worked with ordinary language rather than with formal systems, and because they did not use the notion of interpretation within a domain. When they interpreted a sentence such as "All men are animals," they did not speak of a domain of individuals some of whom were men and some of whom were animals, but only of those individuals who were either men or animals.

However, they explicitly concerned themselves with the other two existential assumptions, and they admitted both non-denoting constants and terms referring to empty classes to their system. In this paper I intend to examine how some logicians of the late 15th and early 16th centuries interpreted sentences containing non-denoting terms, how they assigned truth values to them, and how they dealt with those inferences which needed an existential premiss to ensure validity." (p. 141)

(...)

"My discussion has been necessarily somewhat sketchy, and I have not examined all the contexts in which *constantia* was used,(28) but it should have become clear by now not only that late medieval logicians had clear views about the existential import of various types of sentences, but that they used their initial decisions about the truth and falsity of sentences containing non-denoting terms to build a consistent system. It is to be regretted that the vast majority of logicians after the third decade of the 16th century ceased to discuss these matters, with the result that modern readers tend to think of traditional logic as lacking a sophistication which it did indeed possess." (p. 147)

(1) See, for example, W. V. O. Quine, "Quantification and the Empty Domain" in *Selected Logic Papers* (New York, 1966), pp. 220-223; Hugues Leblanc and Theodore Hailperin, "Non-Designating Singular Terms," *The Philosophical Review*, vol. 68 (1959), pp. 239-243; B. C. van Fraassen, "Singular Terms, Truth Value Gaps and Free Logic," *The Journal of Philosophy*, vol. 63 (1966), p. 481-

495. There is a large and growing body of literature on the topic of logics which are free from existential suppositions. (29)

11. ———. 1973. "Andreas Kesler and the Later Theory of Consequence." *Notre Dame Journal of Formal Logic* no. 14:205-214.

"In another paper I examined the theory of consequence presented by a number of later fifteenth and early sixteenth century writers, ending with Javellus, an Italian who died in 1538. (1) For this earlier period, there was an abundance of material, containing much sophisticated discussion of semantical issues; but the next hundred years do not offer more than a few sources, and these are of limited value. The only really outstanding figure, so far as I can see, is that of Andreas Kesler. He was a Protestant theologian who was born at Coburg in 1595, educated at Jena and Wittenberg, and died in 1643 after a long career in education. In 1623 he published a book entitled *De Consequentia Tractatus Logicae* which is unique, both for its own time, and as compared to the products of this earlier period, in that it explicitly subsumes the whole of formal logic under the theory of consequence. The laws of opposition and conversion, the categorical and hypothetical syllogism, were all seen as different types of consequence. Moreover, no extraneous material was included. Instead of starting with the categories, like the Aristotelians, or with the invention of arguments, like the Ramists, he devoted his first chapter to the definition of consequence. Topics, informal fallacies and other such subjects found no place, whereas some rarely discussed matters like exclusive and reduplicative propositions and the modal syllogism did appear. Thus he stands out for his contents as well as for his organization." (p. 205)

(...)

"After this brief survey one can only conclude that the theory of consequence suffered an abrupt decline after the

first part of the sixteenth century. The one outstanding writer on the subject was Andreas Kesler, but he stands out for a single insight, rather than for any awareness of the ramifications of the theory. Unlike his sources, he saw that all of formal logic could be subsumed under the basic notion of consequence, and he was able to exclude extraneous material, but that was as far as he went. About the definition and division of consequence, and about consequential rules, he had nothing to say but what had been said before him by Fonseca and Regius. Nor did he betray any knowledge of earlier writers, although some at least must have been available to him in Wittenberg. For once those who deplore the loss of mediaeval insights during the sixteenth century seem to be justified." (p. 210)

(1) See my paper "The Theory of Consequence in the Late Fifteenth and Early Sixteenth Centuries," to appear in *Notre Dame Journal of Formal Logic*, vol. XIV (1973), No. 3, pp. 289-315.

12. ——. 1973. "The Theory of Consequences in the Late Fifteenth and Early Sixteenth Centuries." *Notre Dame Journal of Formal Logic* no. 14:289-315.

"In this paper I intend to examine the treatment accorded to consequences by a group of writers from the late fifteenth and early sixteenth centuries, although I shall make some reference to earlier periods. The subject of consequences (or valid inference) is of central importance to the historian of logic because those who discussed it covered such a wide range of logical issues, including criteria for validity, problems of self-reference, the status of the so-called paradoxes of strict implication, and the systematization of valid inference forms. Indeed, a large part of semantics and the whole of formal logic could be subsumed under this general heading. Whether the authors themselves fully appreciated that this was so is unfortunately not such an easy question to answer, for those I am concerned with frequently leave the reader in doubt as to their view of the

relation of consequences to the rest of logic. So far as they discussed the matter, syllogistic was seen to be consequential in nature,(1) but they certainly did not make the subordinate position of the syllogism as clear as Burleigh had in the fourteenth century, or indeed as Andreas Kesler was to do in the seventeenth century.(2) A good guide to the way they viewed the problem is to see where consequences were discussed.

A very few authors, including J. Major, A. Coronel and J. Almain, devoted a whole treatise to them, but generally speaking they came in on the coat-tails of other topics so far as separate treatises were concerned.

They appear at the beginning of Dolz's treatise on the syllogism, at the end of Celaya's treatise on supposition and under 'hypothetical propositions' in the treatises on opposition written by R. Caubraith and F. Enzinas. The best places to look for a discussion of consequence turn out to be commentaries on Peter of Spain, where they appear either as an appendage to the *Parva Logicalia* or under the heading of 'hypothetical propositions', and, of course, general textbooks of logic. In these, a separate tract was sometimes devoted to consequences, as it was by C. Javellus, but more usually they were associated with the syllogism, whether as an introduction to it or, sometimes, as an appendix to it. Savonarola, for instance, said all he had to say of consequences in a section on the powers of the syllogism.

The bibliography at the end of this paper should give a fairly clear picture of the situation; though it must be noted that the majority of commentaries and textbooks belonging to the sixteenth century did not mention consequences at all." (pp. 289-290)

(1) Enzinas, *Tractatus Syllogismorum*, fo.I vo, said "syllogismus est consequentia bona et formalis . . . omnis consequentia formalis que non tenet gratia alicuius regule

logicalis tenebit syllogistice." Cf. Heirich Greve, *Parva Logicalia nuper disputata*, Leipzig (149-).fo. lxxi.

(2) Andreas Kesler, *De Consequentia Tractatus Logicus* (Wittenberg, 1623). See my paper, '*Andreas Kesler and the later theory of consequence,' *Notre Dame Journal of Formal Logic*, vol. XIV (1973), pp. 205-214.

13. ——. 1973. "The Doctrine of *Exponibilia* in the Fifteenth and Sixteenth Centuries." *Vivarium* no. 11:137-167. Reprinted as essay IX in: *Studies in Post-Medieval Semantics*.

"One of the most neglected parts of late medieval logical theory is that devoted to *exponibilia*, or those propositions which need further analysis in order to lay bare their underlying logical form and to make clear under what conditions they can be said to be true or false. My main intention in this paper is to examine the rich array of printed sources which are available to us from the later fifteenth and early sixteenth centuries, but I will consider some texts written before the invention of printing, and I will also give some account of what happened to the theory in the late sixteenth and seventeenth centuries. The sources fall into three main groups. There are separate treatises on *exponibiles*, especially those written by Peter of Ailly(*) and later Parisian logicians; there are commentaries on the treatise on *exponibiles* attributed to Peter of Spain; and there are those parts of longer works which were devoted to 'Proofs of Terms', as in Paul of Venice and his followers. These groupings are not, of course, exhaustive. For instance, Marsilius of Inghen and George of Brussels discussed *exponibiles* in the second part of a treatise on consequences, and Albert of Saxony included *exponibiles* in the part of *Perutilis Logica* devoted to different kinds of proposition. As might be expected, the authors of the separate treatises on *exponibiles* were considerably more detailed and careful in their analysis than were those authors who treated *exponibiles* as a subsidiary matter. In my view, the two most

outstanding treatises are those written by Peter of Ailly (d. 1420) and by Domingo de Soto (d. 1560). The latter is not original, but it is a very acute and thorough survey of the doctrines which were current in late fifteenth and early sixteenth century Paris, where de Soto had studied under and with such logicians as Major, Celaya and Lax, whose names will frequently occur in my text. Outside treatises devoted to *exponibiles*, good brief treatments are to be found in the anonymous commentator on Marsilius of Inghen, and in George of Brussels, (both of the later fifteenth century) and in Hieronymus of St. Mark (of the early sixteenth century). The earlier writers are often disappointing. For instance, although Paul of Venice's *Logica Magna* is sometimes described as an encyclopedia of medieval logic, the section on *exponibiles* lacks the precise analysis of types and sub-types of *exponible* propositions found in other authors, and the examples are frequently confusing. Similarly, the treatise wrongly attributed to Peter of Spain lacks detail, and derives most of its value from the remarks of commentators." (pp. 137-138)

(...)

"To conclude, one can say that the history of *exponible* propositions mirrors the history of medieval logical doctrines in general. At the end of the fifteenth and beginning of the sixteenth centuries there was a sudden surge of activity, during which such topics as *exponibilia*, *insolubilia* and *suppositiones* were analyzed, clarified and elaborated in works which are highly respectable from the logician's point of view, even if they contain little that is original. This period of activity was followed by a period of decline, in which medieval doctrines continued to receive some attention, especially in Spain, but they are clearly subordinated to the main business of expounding Aristotelian logic. By the end of the seventeenth century they cease ever to be mentioned." (p. 165)

[* Peter of Ailly, *Tractatus Exponibilium*, Paris c. 1495?]

[** Domingo de Soto, *Opusculus Exponibilibus*, in *Introductiones dialectice*, Burgis 1529]

14. ———. 1973. "Priority of Analysis and Merely Confused Supposition." *Franciscan Studies* no. 33:38-41.
"In a recent article John J. Swiniarski discusses William of Ockham's use of merely confused supposition.(1) He claims that, in the case of universal affirmative propositions, Ockham's method of attributing merely confused supposition to the predicate accomplishes much the same result as Peter Thomas Geach's method of attributing determinate supposition to the predicate and using a priority of analysis rule, whereby the subject is always analysed first. However, he notes, Ockham's analytical procedures when applied to particular negative propositions can lead to erroneous results, which are only avoided by the adoption of a priority of analysis rule. Since such a rule renders merely confused supposition unnecessary, he concludes that Geach was right and that Ockham ought to have employed only distributive and determinate supposition to get her with a priority of analysis rule in his treatment of standard categorical propositions. I do not wish to criticize what Swiniarski has to say about the interpretation of Ockham. Instead, I wish to make a few remarks about the use of merely confused supposition by sixteenth century logicians in order to show that it is not in general so easily dispensed with. (2)" (p. 38)
(...)
"In the light of these two examples, I conclude that there was good reason for sixteenth century logicians to retain merely confused supposition, and to use Domingo de Soto's priority of analysis rule rather than Geach's." (p. 41)
(1) Swiniarski, John J., "A New Presentation of Ockham's Theory of Supposition with an Evaluation of Some Contemporary Criticisms," *Franciscan Studies*, 30 (1970), 209-217. Those readers who are not familiar with supposition theory should be reminded that merely

confused supposition involves an analysis into a disjunctive subject or predicate, whereas distributive supposition involves an analysis into a conjunction of propositions and determinate supposition involves an analysis into a disjunction of propositions.

(2) For further details about supposition theory in the sixteenth century, see my paper: "The Doctrine of Supposition in the Sixteenth and Seventeenth Centuries," *Archiv für Geschichte der Philosophie*, 51 (1969), 260-285.

15. ———. 1974. "Some Additions to Risse's *Bibliographia Logica*." *Journal of the History of Philosophy* no. 12:361-365.

"One of the greatest contributions to the history of logic in recent years was the publication in 1965 of Wilhelm Risse's *Bibliographia Logica*, Vol. I, which covers the years from 1472 to 1800. However, despite the fact that Risse's monumental work lists an estimated 8,000 logical works, it is still far from comprehensive, as Mr. Hickman pointed out in an earlier article in this journal. Why this should be the case immediately becomes apparent when one starts to work in a library such as the Bodleian at Oxford with its handwritten catalogue of books printed before 1920 and its lack of any specialized bibliographies such as the British Museum has provided for early printed books. Even in well catalogued libraries such as the University Library at Cambridge it can be difficult to locate texts, and one often stumbles across a new logical work through the accident of its being bound in the same volume as better known works. As a result of my researches over the last few years, I have put together a list of works which do not appear in Risse in the hope that other historians of logic may benefit from my discoveries. I cannot, however, claim that I have exhausted the resources of the libraries which I have visited. Doubtless there are still not only new editions but new authors left to be discovered." (p. 361)

"This paper concerns logic texts published between 1472 and 1800. I list 20 items whose authors do not appear in Risse, 12 items whose authors appear in Risse in connection with another title or other titles, and 58 items which appear in Risse in another edition or in other editions. I indicate the libraries in which all these items are to be found, and I also list some useful bibliographical works."

16. ———. 1974. "Classification Schemes and the History of Logic." In *Conceptual Basis of the Classification of Knowledge / Les Fondements De La Classification Des Savoirs*, edited by Wojciechowski, Jerzy A., 275-283. New York - München - Paris: K. G. Saur.
- Proceedings of the Ottawa Conference on the Conceptual Basis of the Classification of Knowledge, October 1st to 5th, 1971.

"Logic is one of the most important means of classification we have, for it enables us to appraise our reasoning by drawing the distinction between valid and invalid inferences. Its aim is a simple one, and easily stated, but when we get down to the task of specifying under precisely what conditions a true premiss set will entail a true conclusion, it seems that a whole range of different types of classification is necessary.

Logicians commonly start by drawing the distinction between informal or natural languages and formal or artificial languages. Even at this point, divergent interpretations are possible. One can argue with the early Wittgenstein that natural language has a hidden ideal structure, which it is the task of the logician to uncover; or one can argue with the later Wittgenstein that natural language involves a series of games with different structures, any one of which the logician can choose to present as a formal language. Given both the complexities of natural languages and the variety of formal languages which have been developed, the latter interpretation is by far the most plausible. Once the notion of a formal language has

been isolated, one can go on to draw the distinction between syntax, or the study of the relations of signs among themselves, and semantics, or the study of signs as interpreted, as having meaning and as being true or false. In turn we can obtain the notion of different types of logical calculi. For instance, a propositional calculus has one set of signs with certain limited transformations of these signs, and it is interpreted by the assignment of truth values to its constituent parts; whereas a quantificational calculus has a more elaborate set of signs with transformations to match, and it is normally interpreted by means of the assignment of members or sets of members of domains to its constituent parts.

The teacher of logic is often tempted to claim that these types of classification are integral to the study of logic. This is true when logic is seen as the foundation of mathematics, but to say that only, through these distinctions can one sensibly talk about valid and invalid inferences is a much larger claim, and a more dubious one. I intend to look at selected aspects of the history of logic in order to throw some light on the problem of just what kinds of classification are necessary to the isolation of valid inferences, which I take to be the true task of logic. In particular, I shall look at the definitions of valid inference offered by the Scholastic logicians of the late fifteenth and early sixteenth centuries, since this is the historical period with which I am best acquainted. (1)" (p. 275)

(...)

"Are we now to conclude that elaborate classification schemes are irrelevant to the pursuit of logic, so long as we have an adequate definition of a valid inference? The answer to this question will depend in part on how much one wants out of logic.

If one wishes to study the metalogical properties of formal systems, to obtain a complete set of rules, or to relate logic to mathematics, scholastic logic is necessarily inadequate.

However, if one wishes to classify those inferences which are used in ordinary language, then one can argue that an elaborate classificatory apparatus combined with the development of formal systems will be a hindrance rather than a help. Even the simplest sentence contains subtleties which will be lost in symbolization. Moreover, there is the grave problem of which system to choose when one is symbolizing and assessing an inference. This problem has two facets. First, one may pick a system which is inadequate to one's purposes. If one attempts to show that a relational inference is valid in terms of the standard monadic predicate calculus, one will fail. Yet one has not proved that the inference in question is not valid. Second, one may pick a system whose standard interpretation is alien to one's purposes. A logician who wishes to show that ' $\neg P$ ', therefore ' P ' holds would be ill advised to choose the intuitionist propositional calculus. Similarly a logician who wishes to show that " Fa therefore ' $(\exists x)Fx$ '" should not choose a version of the quantificational calculus which admits non-denoting constants.

The more systematic one's approach to formal logic, the more arbitrary the choice of system seems to be, and hence the less relevant to the normal day to day task of assessing arguments. Scholastic logic, on the other hand, seems perfectly adapted to normal requirements. It is both unpretentious and powerful; it does not violate normal intuitions; and it is non-arbitrary. Or so one might think. However, let us look a little more closely. What are we to make of the following claims? "An impossible proposition implies any other proposition." "A necessary proposition follows from any other proposition." "If you come to me I will turn you into an ass" is true provided that you do not come to me." "All chimeras are chimeras" is false because there are no chimeras, but "No chimeras are chimeras" is true for the same reason." The first two examples, the paradoxes of strict implication, follow straight from the

definition of a valid inference. The third example is a consequence of the truth-functional interpretation given to promissory conditionals. The last examples are a consequence of the arbitrary decision to save the square of opposition by counting all affirmative propositions with non-referring subjects as false. Yet none of the examples corresponded to the normal intuitions of the sixteenth century. They all gave rise to acrimonious debate, and were accepted only because of the exigencies of the desired system of rules and the desired interpretation of that system. Thus even the scholastics, operating within the framework of ordinary language, were forced to make some of the arbitrary decisions which people tend to blame modern logic for. One may still prefer scholastic logic to modern logic for various reasons, but that it enshrines a true and completely non-arbitrary system of picking out valid inferences cannot be one of them.

In the last resort, the presence or absence of modern classification schemes logic does not make so much difference as one would like to think." (pp. 282-283)

(1) I intend to use the term 'scholastic logician' more narrowly than is proper, to refer to those men whom I am concerned with.

17. ———. 1974. "*For Riding Is Required a Horse: A Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic.*" *Vivarium* no. 12:146-172. Reprinted as essay I in: *Studies in Post-Medieval Semantics*.

"One of the most interesting features of the works of the logicians associated with the University of Paris in the late fifteenth century and the first part of the sixteenth century is their application of medieval logical doctrines to the discussion of actual examples. In this paper I intend to present a detailed study of one specific example, "For riding is required a horse" [*Ad equitandum requiritur equus*]. I shall first discuss each of the arguments that was used,

showing its place in the general body of logical doctrine; then I shall present three typical texts, together with an analysis of the pattern of argument found in each. One text will deal with the problem in the context of contradiction, one in the context of conversion, and one in the context of supposition theory. In this way I hope to deepen our understanding both of the theories and of the techniques of medieval and post-medieval logic." (p. 146)

(...)

"The claim that the gerund 'riding' implies a reference to particular acts of riding, which can in turn be identified with individual horses, solved the problem of "For riding is required a horse" at the expense of raising further philosophical problems about both language and the world. However, the claim that the sentence should be regarded as equivalent either to a simple conditional or to some kind of modal proposition solved all the problems very neatly without, apparently, raising new ones. In the light of such an analysis one could maintain the truth of "For riding is required a horse" without at the same time having to argue that the sentence had the same truth-value as its contradictory or a different truth-value from its simple conversion, since these related sentences would have undergone a similar analysis, thus turning out to have the desired truth-values. Whichever solution one prefers, it seems to have been amply demonstrated that the simple minded approach in terms of personal supposition alone was inadequate. To speak of horses being required for riding is to do more than to make reference, successful or otherwise, to individual horses or any other identifiable objects in the world." (pp. 157-158)

18. ———. 1975. "Descartes' Theory of Objective Reality." *New Scholasticism* no. 49:331-340.

"In the *Third Meditation* Descartes, who is at the beginning sure only of his own existence, presents a complex proof for the existence of God which is based on the fact that he finds

within himself an idea of God. I intend to ignore the supplementary proof which deals with the conservation of his existence, and to focus on his discussion of the properties of ideas, for it is here that Descartes is most difficult to comprehend yet most vulnerable to criticism. With the exception of Gassendi's remarks in the *fifth objection*, I shall concentrate upon what Descartes himself had to say, for a thorough survey of all the secondary sources often serves only to obscure the main issue." (p. 331)

(...)

"Descartes reinforced his arguments with various claims about the nature of predicates and the way in which we come to understand them. He thought, mistakenly, that one could not only distinguish between negative and positive predicates, but that one could demonstrate the logical priority of such positive predicates as 'infinite' or 'perfect' by showing that one can only understand the finite or imperfect in the light of a prior acquaintance with the infinite or perfect. (29) However, although he seems now to be talking about epistemology rather than ontology, it turns out that his claims rest upon the same assumptions about the content and causation of ideas as are involved in the main proof, so they do not need to be discussed further. However liberal one is in granting Descartes his desired premises, I think it is fair to conclude that his arguments do not prove what they purport to prove. This seems to be a strong indication that one will lose nothing by being illiberal from the very beginning." (p. 340)

(29) E. Haldane and G. Ross, *The Philosophical Works of Descartes* (Cambridge, 1968), I, 166.

19. ———. 1976. "I Promise You a Horse. A Second Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic (First Part)." *Vivarium* no. 14:62-79.

Reprinted as essay II (first part) in: *Studies in Post-Medieval Semantics*.

"The logicians associated with the University of Paris in the late fifteenth and the first part of sixteenth century were at one with their medieval predecessors in their attempt to formulate a unified theory of the reference of such general terms as 'horse'. To be successful, any such theory has to give a plausible account of what happens to general terms in modal and intentional sentences, and the logicians I am concerned with clearly tried to deal with this problem.

However, because of the rather standard way in which logic texts tended to be organized, the relevant material has to be sought in various places. In an earlier paper, I made a detailed study of the reference the word 'horse' was said to have in the modal sentence, "For riding is required a horse"; and in order to carry out that study, I had to draw material from the discussion of contradiction, of conversion, and of supposition. (1) In this paper, I intend to make a detailed study of the reference the word 'horse' was said to have in the intentional sentence "I promise you a horse", and my material will be drawn from the discussion of contradiction, of conversion, of supposition and of appellation. (2) I shall first examine each of the arguments that was used, showing its place in the general body of logical doctrine; then I shall present four typical texts, together with an analysis of the pattern of argument found in each.

One text will deal with the problem in the context of contradiction, one in the context of conversion, one in the context of supposition, and one in the context of appellation. In this way I hope to show what problems intentional sentences were seen to raise for the standard theory of reference, and how these problems were dealt with." (pp. 62-63)

(...)

"On the whole, it seems fair to say that the logicians I have examined failed to produce a theory of the reference of

general terms which applied with equal success to all contexts. Some, like Sbarroya, found themselves forced to emphasize the difference between intentional and non-intentional contexts by postulating completely different types of referent. Some, like Heytesbury, overlooked the difference altogether in their appeal to personal supposition. Some, like Buridan, recognized that terms in an intentional context have a function which goes beyond that of referring to individual objects; but they were unable to say with precision just how this broader function was to be reconciled with the referential function. However, one thing is common to those who struggled with the logical problems caused by "I promise you a horse". That is, they managed to save the validity of those inferences they were concerned with, either by so interpreting sets of sentences that they were not to be counted as instances of the inferences in question, or by so interpreting sets of sentences that they came out to have the desired truth-values, and could no longer be cited as counter-examples to a general rule. Thus, they were successful as logicians, if not as philosophers of language." (p. 78)

(1) " "For Riding is Required a Horse": A Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic". *Vivarium*, XII (1974) pp. 146-72.

(2) Enzinas, Pardo and de Soto discussed the matter in the context of their discussion of contradiction; Celaya, Coronel (*Prima Pars*), Sbarroya and de Soto discussed the matter in the context of their discussion of conversion; Hieronymus of St. Mark and Martinez Siliceo discussed the matter in the context of their discussion of supposition; Tartaretus discussed the matter in the context of his discussion of descent; and Coronel (*Secunda Pars*), Dorp, Hieronymus of St. Mark, Major, Manderston, Mercarius and Pardo discussed the matter in the context of their discussion of appellation. It will be noted that some authors discussed the matter in more than one place. For details of the texts, see

the bibliography at the end of the paper. Of the authors cited, Hieronymus of St. Mark and Sbarroya are not, so far as I know, specifically associated with Paris, though they are clearly influenced by Parisian logicians.

For medieval discussions of the problem, see P. T. Geach, "A Medieval Discussion of Intentionality" in *Logic Matters* (Oxford, 1972) 129-138, and J. Trentman, "Vincent Ferrer and His Fourteenth Century Predecessors on a Problem of Intentionality" in *Arts Libéraux et Philosophie au Moyen Âge* (Montréal/Paris, 1969) 951-956.

20. ———. 1976. "I Promise You a Horse. A Second Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic (Second Part)." *Vivarium* no. 14:139-155.

Reprinted as essay II (second-part) in: *Studies in Post-Medieval Semantics*.

Parto Two: *Texts and Analyses*.

21. ———. 1976. "Agostino Nifo's Reinterpretation of Medieval Logic." *Rivista Critica di Storia della Filosofia* no. 31:353-374.

"A year ago, if I had been asked to give a brief account of medieval logic and its relationship to Renaissance logic, I would probably have said something like this. In the medieval period, logicians had made great advances in the areas both of semantics and of formal logic. In the area of semantics, we find lengthy and sophisticated discussions of terms, of propositions, of supposition theory, which dealt with the reference of terms in various contexts, and of *insolubilia*, or semantic paradoxes, with their farreaching implications for our ordinary assumptions about the truth and reference of propositions. In the area of formal logic, we find equally lengthy and sophisticated discussions of *consequentiae*,

or valid inference forms for both unanalyzed and analyzed propositions, and of *exponibilia*, those propositions whose logical form needs to be uncovered by means of analysis. A natural result of these advances was a relative down-grading

of Aristotle. Aristotelian syllogistic was put in a subordinate place, as just one variety of valid inference, and in general the logical works of Aristotle did not receive as much attention as one might have expected. Medieval logicians were as likely to comment on Peter of Spain or to write independent treatises on particular topics as they were to comment on Aristotle; and unless they were directly discussing Aristotle, they were unlikely to pay much attention to the matters

treated of in the *Analytica Posteriora*, *Topica* and *De Sophisticis Elenchis*.

All this, however, was to change with the coming of the Renaissance

Ignoring those at the University of Paris and at various Spanish universities who consciously continued the medieval tradition (2), we find two completely new developments. On the one hand there is Humanism, with its bitter attacks on medieval sophistry, its dropping of virtually all formal logic, and its emphasis on the topics. On the other hand, there is Aristotelianism, with its emphasis on the pure text of Aristotle, freed from medieval accretions, and to be interpreted either directly or with the aid of Greek and Arab commentators. These two schools certainly differed in important respects, but they were united in their rejection of what I have described as the great advances of the medieval period. Supposition theory, *insolubilia*, *consequentiae* and *exponibilia* were to be discussed no more; and terms and propositions were to appear only as described by Aristotle or by the grammarians and rhetoricians.

My view of the medieval advances remains unchanged, but I am not now so sure about the abruptness of the change from medieval to Renaissance logic in the works of the Aristotelians of the period. In this paper, I intend to present a case study of the transition as it appears in the works of one Aristotelian, namely Agostino Nifo (or Augustinus Niphus). I intend to show that medieval doctrines were still

relatively well-known to him, and were discussed by him at length; but that he presented them in a way which diminished their value and hence made them easier to abandon. Someone who knew of the theory of terms or of supposition theory, to mention just two examples, only through Nifo could well wonder what use these doctrines were, despite the apparent care with which they had been expounded, and could therefore decide to abandon them completely in his own work. Whether this is indeed what happened in the sixteenth century can, of course, only be established after a good deal of further investigation; and I present the possibility here only as a tentative hypothesis.

(1) I would like to thank Dr. C. B. Schmitt of the Warburg Institute, University of London, for inviting me to read an earlier version of this paper as part of a series devoted to Renaissance Aristotelianism. I would also like to thank the Canada Council for the generous financial support which made the research for this paper possible.

(2) For further discussion and bibliography, see E. J. Ashworth, *Language and Logic in the Post-Medieval Period*, Dordrecht (Holland) - Boston (U.S.A.) 1974

22. ———. 1976. "Will Socrates Cross the Bridge? A Problem in Medieval Logic." *Franciscan Studies* no. 14:75-84. Reprinted as essay XII in: *Studies in Post-Medieval Semantics*.

"In their treatises on *insolubilia*, or semantic paradoxes, medieval logicians frequently mentioned other cases in which the assumption that a proposition was true led to the conclusion that it was false, and the assumption that it was false led to the conclusion that it was true. Some of these cases were easily solved. If one considers the proposition "Socrates will enter a religious order" in relation to Socrates' vow, "I will enter a religious order if and only if Plato does," and to Plato's vow, "I will enter a religious order if and only if Socrates does not," one sees at once that the problem stems from contradictory premises.(1). But not all cases

were of this sort. Consider the favourite example, "Socrates will not cross the bridge," when said by Socrates, in relation to the two premises, "All those who say what is true will cross the bridge" and "All those who say what is false will not cross the bridge." (2) It is easily demonstrated that "Socrates will not cross the bridge" is true if and only if it is false, but what is not so easily demonstrated is the source of the paradox. Certainly it is not a paradox just like "What I am now saying is false," since the key proposition does not speak of its own semantic properties, but the premises do indeed speak of truth and falsity in a way which has implications for the truth-value of "Socrates will not cross the bridge." The question thus arises whether "Socrates will not cross the bridge" is to be counted as a semantic paradox, to be dissolved in the same way as the Standard Liar is dissolved, or whether it is to be seen as needing another kind of solution, perhaps less radical in its implications for our common-sense notions about such matters as the legitimacy of self-reference or the definition of truth." (pp. 75-76)

(...)

"In conclusion, I would like to say that Paul of Venice's reputation as the last of the great medieval logicians seems to me to be vastly overrated. Several logicians of the late fifteenth and early sixteenth centuries, including Bricot, Eckius, Major and de Soto, offer more acute discussions of logical problems and more satisfactory solutions, as I hope I have demonstrated by this examination of the bridge paradox." (p. 83)

(1) Thomas Bricot, *Tractatus Insolubilium* (Parisius, 1492) sign. b. viii and sign. c i; Johannes Eckius, *Bursa Pavonis* (Argentine, 1507) sign. k v; John Major, *Insolubilia* (Parrhisiis, 1516) sign. c ii ff. Cf. Albert of Saxony, *Perutilis Logica* (Venetiis, 1522) fo. 46 vo; Robertus de Cenali, *Insolubilia in Liber Prioris Posterioris* (Parisius, 1510) sign. o iiii.

One should note here that vows, promises and the like were treated as propositions with truth-values rather than as performative utterances with no truth-values. This view was combined with a realization that there are certain conditions which have to be met before a vow is binding. For instance, the vower must genuinely intend to do what he vows to do, and what he vows to do must be both moral and within his power. These extra conditions were not thought relevant to the question whether "Socrates will enter a religious order" was true or false.

To the slightly different question of whether Socrates would be bound by his vow, Major, for instance, held that he would not, on the grounds that his vow was conditional and that the condition, given Plato's vow, could not be fulfilled.

For references to Major's text and to other discussions of vows and promises, see below, note 15.

(2) Paul of Venice, *Logica Magna* (Venetiis, 1499) fol. 198 and Paul of Venice, *Tractatus Summularum Logice Pauli Veneti* (Venetiis, 1498) sign. e i vo. The latter work which appeared in many editions, is known as the *Logica Parva*. See also John Buridan, *Sophisms on Meaning and Truth*, translated and with an introduction by T. K. Scott (New York, 1966), pp. 219-220; Cenali, loc. cit.; David Cranston, *Tractatus Insolubilium et Obligationum* [Paris, c. 1512] sign. e iiiii; Eckius, op. cit., sign. k iiiii vo; Robert Holkot, *Super Quattuor Libros Sententiarum Questiones* (Lugduni, 1497) sign. E ii; Major, op. cit., sign. c ii vo; Peter of Ailly, *Conceptus et Insolubilia* (Parisius, 1498), sign. b. viii; Peter of Mantua, *Logica* (Venetiis, 1492), sign. o vivo; Domingo de Soto, *Opusculum Insolubilium in Introductiones Dialectice* (Burgis, 1529), fol. cxlvi f. Bricot, op. cit., sign. b. vii vo f. speaks of giving a penny to the truth-teller rather than of allowing him to cross a bridge, but the principle is the same. Some authors (e.g. Eckius, op. cit., sign. k v) gave both versions of the paradox, as did Paul of Venice himself (*Logica Magna* fol. 197 vo f., *Lógica Parva*, sign. e i f.) It

should be noted that there are many variations in the names of the characters and in the phrasing of the propositions. Some authors substituted "You will throw me into the water" for "Socrates will not cross the bridge."

(15) It is because of this association with promising that we find the bridge paradox and others similar to it discussed in theological works as well as logical, e.g. Holkot, op. cit., sign. C iiii ff., sign. D viii vo ff.; John Major, *In Quartum Sententiarum Questiones* ([Paris], 1519), sign. ccxcii vo ff. For general discussions of promising see, e.g., Gratian, *Decretum*, Chapter XXII (various editions) and Richard Mediavilla (or Middletown) *Scriptum Super Quarto Sententiarum* ([Venice], 1489) Book IV, distinction 38.

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ARTICLES

1. Ashworth, Earline Jennifer. 1977. "Thomas Bricot (D. 1516) and the Liar Paradox." *Journal of the History of Philosophy* no. 15:267-280.

Reprinted as essay XI in: *Studies in Post-Medieval Semantics*.

"Preliminary Remarks.

No one interested in the history of the Liar Paradox will gain a just appreciation of the variety and sophistication of the solutions that were offered unless he pays attention to the logicians working at the University of Paris at the end of the fifteenth century and the beginning of the sixteenth.(1) The

study of semantic paradoxes, known as *insolubilia*, formed a significant part of the first-year logic curriculum, which was of course the curriculum for all arts students; and those who taught the subject by no means confined themselves to a repetition of earlier views. Although Ockham, Buridan, Paul of Venice and Peter of Ailly certainly were read and discussed, original work was also produced. One of the earliest and most influential of these original treatises was written by Thomas Bricot. First published in 1491, it received its eighth edition in 1511, (3) and was still being read as late as 1529 when Domingo de Soto discussed it in his own work on semantic paradoxes. (4)

(...)

The only original self-contained works of Bricot that I know are his *Tractatus Insolubilium* and his *Tractatus Obligationum*, which were always printed together. In this paper I intend to discuss only the *Tractatus Insolubilium*. The book's organization is worthy of some preliminary comment. Its main division is into three *Questiones*, each phrased in a similar manner. In the first *Questio* Bricot inquires whether there is a way of saving the possibilities, impossibilities, contingencies, necessities, truths and falsities of self-referential propositions; the second and third *Questiones* ask simply whether there is another Way of saving, that is, justifying, the attribution of these modalities. The first *Questio* contains what is apparently Bricot's own solution to the problem. In the second *Questio* he discusses the solution that stems from Ockham, and the solution derived from Peter of Ailly is covered in the third. Each *Questio* has exactly the same internal organization. At the beginning, Bricot poses five main questions concerning the proposed solution. He then divides the subsequent discussion into three sections: the first, headed *notabilia*, setting out the main principles of the proposed solution; the second, *conclusiones*, giving a brief list of conclusions; and the third, *dubia*, taking up a series of problems arising from

the proposed solution. Each doubt is aimed at one of the *notabilia* and gives rise to a series of arguments against the proposed solution. Once these have been stated, they are refuted one by one.

After all the doubts have been dealt with, Bricot offers replies to the five main questions posed at the beginning of the section. At no point are the separate solutions compared to one another, though arguments drawn from one view may be used in the critical discussion of another view; and at no point does he actually claim that the first solution is his own and hence to be preferred. Bricot is more forthright in a note on *insolubilia* he added to George of Brussels's commentary on *De Sophisticis Elenchis*, where he says that the solution in question is "omnium probabilissimus." (6) The first solution is explicitly attributed to Bricot by de Soto, (7) who himself studied at Paris, and there is also indirect evidence to support de Soto's claim. The first solution does not figure among the fifteen solutions described by Paul of Venice in his *Logica Magna* (8) yet it does appear in the works of Parisian logicians contemporary with or junior to Bricot. For example, Tartaretus discussed it in a treatise on *insolubilia* first published in 1494, (9) and it was also discussed by John Major and David Cranston.(10) Unfortunately these authors followed the normal practice of mentioning names only in a few outstanding cases. The German Trutvetter did both recommend Bricot by name and describe the view I attribute to him, but without specifically linking the two.(11)"

(2) For further details and a bibliography, see E. J. Ashworth, *Language and Logic in the Post-Medieval Period* (Dordrecht Holland and Boston: Reidel, 1974). For the medieval background, see P. V. Spade, *The Mediaeval Liar: A Catalogue of the Insolubilia-Literature* (Toronto: Pontifical Institute of Mediaeval Studies, 1975).

(3) *Tractatus Insoiubilium* (Paris, 1491; reprinted, Paris, 1492; Paris, 1494; Lyons, 1495; Lyons, 1496; Paris, 1498;

Paris, 1504; Paris, 1511). I have examined copies of each printing and have prepared an edition of the text, on which I base my discussion.

(4) *Opusculum Insolubilium*, in *Introductiones Dialectice* (Burgis, 1529), fol. cxliii-cxlix vo.

(5) I draw my material from H. Élie, "Quelques maîtres de l'université de Paris vers l'an 1500," *Archives d'histoire doctrinale et littéraire du moyen âge* 18 (1950-1951): 197-200; and A. Renaudet, *Préréforme et humanisme à Paris pendant les premières guerres d'Italie 1494-1517* (Paris, 1916), pp. 96 ff.

(6) George of Brussels, *Expositio in logicam Aristotelis: una cum Magistri Thome bricoti textu de novo inserto nec non cum eiusdem questionibus in cuiusvis fine libri additis* (Lugduni, 1504), fol. cclxxv.

(7) *Opusculum Insolubilium*, fols, cxl vo and cxlvii.

(8) (Venetiis, 1499), fols. 192ff.

(9) Petrus Tartaretus, *Sumularum Petri de hispania explanationes* (Friburgensi, 1494), sign, k v-l i vo.

(10) John Major, *Insolubilia* (Parrhisiis, 1516); David Cranston, *Tractatus insolubilium et obligationum* [Paris, c. 1512].

(11) Jodocus Trutvetter, *Summule totius logice* (Erphurdie, 1501), sign. UUUvi vo-XXX i vo. Trutvetter's reference is to Bricot's note in George of Brussels, cclxxiii"vo ff.

2. ———. 1977. "Chimeras and Imaginary Objects: A Study in the Post-Medieval Theory of Signification." *Vivarium* no. 15:57-79.

Reprinted as essay III in: *Studies in Post-Medieval Semantics*.

"I. Prefatory Note.

In the following paper I shall be discussing a particular problem of meaning and reference as it was formulated by a group of logicians who studied and/or taught at the University of Paris in the early sixteenth century.(1) In alphabetical order they are: Johannes Celaya (d. 1558) who

was in Paris from 1500 or 1505 until 1524; Ferdinandus de Enzinas (d. 1528) who was in Paris from about 15x8 until 1522; John Major (1469-1550) who was in Paris from 1492 or 1493 until 1517 and again from 1525 to 1531; William Manderston who taught at Sainte-Barbe from about 1514 and returned to Scotland in or shortly before 1530; Juan Martinez Siliceo (1486-1556) who left Paris in about 1516; Hieronymus Pardo (d. 1502 or 1505); Antonius f Silvester who taught at Montaigu ; and Domingo de Soto (1494-1560) who left Paris in 1519. I shall also discuss the work of the Spaniard Augustinus Sbarroya and the Germans Jodocus Trutvetter (d. 1519) and Johannes Eckius (1486-1543). Both Sbarroya and Eckius were well acquainted with the works of the Paris-trained logicians. Further material is drawn from the fifteenth-century Johannes Dorp and the anonymous author of *Commentum emendatum et correctum in primum et quartum tractatus Petri Hispani*. The work of the medieval authors Robert Holkot, John Buridan and Marsilius of Inghen will appear as it was described by early sixteenth-century authors.

II. *Introduction.*

One of the main features of late medieval semantics was the attempt to formulate a unified theory of the reference of general terms. It is true that this attempt was not explicitly discussed, but many of the problems which arose in the context of such topics as signification, supposition, ampliation, appellation, and the logical relations between sentences clearly owed their existence to the assumption that general terms always referred to spatio-temporal individuals; and in the solutions offered to these problems, much ingenuity was employed to ensure that this assumption was modified as little as possible, if at all. I have already shown in two earlier papers how some logicians dealt with reference in the modal context “For riding is required a horse” and in the intentional context “I promise you a horse.” (2) At the end of this paper, I shall discuss

another intentional sentence, "A man is imaginarily an ass", which was thought to present a difficulty. However, it would be a mistake to think that context was the only complicating factor, for there were general terms which placed an obstacle in the path of those seeking a unified theory, not only by virtue of the contexts in which they appeared, but by virtue of their meaning. The favourite example of such terms was "chimera", but "irrational man", "braying man", and "golden mountain" also served as illustrations. The problem was not merely that they failed to refer, but rather that they were thought to be incapable of referring because the objects which they apparently denoted were impossible just as, for the modern reader, a round square is impossible. The main purpose of the present paper is to explore the way in which the problem was presented, and some of the solutions which were offered." (pp. 57-58)

(...)

"VI. *Conclusion.*

This survey of the way some early sixteenth century logicians treated the problem of chimeras reveals very clearly the alternatives faced by any philosopher who wants to give a unified theory of the reference of general terms. If one adopts a purely extensionalist interpretation of propositions, and allows only ordinary spatio-temporal entities into one's universe of discourse, then one is faced with the choice between rejecting as false many sentences, such as "I imagine a chimera", which one would wish to accept as true, and accepting as true many sentences, such as " "Chimera" signifies an ass", which one would wish to reject as false. If one extends one's universe of discourse to include imaginary objects which are not just ordinary objects regarded in a certain way, one faces grave ontological problems. On the other hand, to appeal to appellation theory is to acknowledge that no purely extensionalist interpretation of all propositions can be given and that no unified theory of reference is possible; and to

adopt Holkot's solution is to admit that sentences which seem to be structurally similar are not in fact similar and that some sentences which appear to be about objects in the world are in fact about the contents of our own minds. On the whole my sympathies lie with those who abandoned the belief that both general terms and subject-object sentences can be given a uniform treatment, but I have great respect for the subtlety and sophistication with which arguments for a uniform treatment were presented. Post-medieval logicians were by no means mindless followers of their medieval predecessors." (p. 79)

(2) E. J. Ashworth, 'For Riding is Required a Horse': A Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic, in : *Vivarium* 12 (1974), 94-123; E. J. Ashworth, 'I Promise You a Horse': A Second Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic, in: *Vivarium* 14 (1976), 62-79, 139-155." (pp. 57-58)

3. ———. 1977. "An Early Fifteenth Century Discussion of Infinite Sets." *Notre Dame Journal of Formal Logic* no. 18:232-234.

"In the opening years of the fifteenth century, or perhaps a little earlier, John Dorp (1) wrote a commentary on Buridan's *Compendium Totius Logicae* (2) and it is here that one finds a discussion of infinite sets which is not only quite unexpected (3) but which suggests that other thinkers of that period were interested in the same topic.

The question of infinite sets arose in the context of the theory of reference. Medieval logicians assumed that affirmative sentences were true only if the subject and object terms had reference, but this assumption conflicted with their intuitions about such sentences as "I imagine a chimera" and "The word 'chimera' refers to a chimera". These sentences seem to be true, but "chimera" cannot refer to actual or possible chimeras, since a chimera is an impossible object, just as a round square is an impossible

object. The question then arose of how such sentences were to be treated, and one obvious answer was to postulate a class of imaginary objects which included impossible objects and to which reference could be made in intentional contexts. (4) In his discussion of this answer, Dorp presented several arguments against the claim that one could refer to impossible objects." (p. 232)

(...)

"Historians of logic must always be wary of taking isolated passages out of context and reading modern developments into them. However, in the case of Dorp there do seem to be good grounds for claiming that he was aware of something describable as a non-denumerably infinite set. It is a great pity that he does not give us more detail about the reasoning that lay behind his assertions, but it is to be hoped that further research into late fourteenth and early fifteenth century mathematics will reveal it to us." (p. 233)

(1) Dorp received his M.A. from the University of Paris in 1393 and he was last heard of at the University of Cologne in 1418. The dates of his birth and death are not known.

(2) Johannes Buridanus, *Compendium Totius Logicae*, Venedig (1499). Facsimile edition: Frankfurt/Main, Minerva G.m.b.H. (1965). This edition contains Dorp's commentary.

(3) For another medieval reference to infinite sets, see I. Thomas, "A 12th century paradox of the infinite," *The Journal of Symbolic Logic*, vol. 23 (1958), pp. 133-134.

(4) For further discussion and references, see E. J. Ashworth, "Chimeras and Imaginary Objects: A Study in the Post-Medieval Theory of Signification" [1977].

4. ———. 1978. "A Note on Paul of Venice and the Oxford Logica of 1483." *Medioevo* no. 4:93-99.
5. ———. 1978. "Multiple Quantification and the Use of Special Quantifiers in Early Sixteenth Century Logic." *Notre Dame Journal of Formal Logic* no. 19:599-613.
Reprinted as essay X in: *Studies in Post-Medieval Semantics*.

"I have three reasons for writing this paper. In the first place, I want to explain the early sixteenth century practice of using the letters 'a', 'b', 'c', and 'd' as special signs governing the interpretation of terms within sentences. In the second place, I want to investigate the analysis which logicians in the medieval tradition gave of such sentences as "There is somebody all of whose donkeys are running", "Everybody has at least one donkey which is running", and "At least one of the donkeys which everybody owns is running".(2) In the third place, I want to show that, despite what Geach has suggested, (3) logicians in the medieval tradition were capable of offering good reasons for rejecting such inferences as "Every boy loves some girl, therefore there is some girl that every boy loves". My discussion will be based mainly on the work of a group of logicians who were at the University of Paris in the first two decades of the sixteenth century, in particular Fernando de Enzinas, Antonio Coronel, and Domingo de Soto." (p. 599)
(...)

"Although the logicians whose work I have examined display considerably more flexibility and subtlety than scholastic logicians have usually been credited with, their discussion reveals two important weaknesses. In the first place, they can only cope with the relations expressed in certain kinds of sentences, particularly those containing genitives; and in the second place, they do not give adequate instructions for distinguishing the case in which one is speaking of all members of a class such as donkeys from the case in which one is speaking only of the members of a subclass, such as the donkeys belonging to a particular man. On the other hand, they are clearly sensitive to the different facets of such relationships as donkey-ownership, and they are also sensitive to the kinds of inference which have to be debarred. A complete account of these strengths and weaknesses will have to await further research." (pp. 610-611)

(2) Cf. P. T. Geach, *Reference and Generality*, Ithaca, New York (1962), p. 15 ff.

(3) P. T. Geach, "History of a fallacy" in *Logic Matters*, Oxford (1972), pp. 1-13.

6. ———. 1978. "Theories of the Proposition: Some Early Sixteenth Century Discussions." *Franciscan Studies* no. 38:81-121.

Reprinted as essay IV in: *Studies in Post-Medieval Semantics*.

"I. Prefatory Notes

In his excellent book, *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, (1) Gabriel Nuchelmans carries the story up to Paul of Venice, who died in 1429.

In this paper I intend to consider the discussions of propositional sense and reference found in the works of a group of authors connected with the University of Paris in the last decade of the fifteenth century and the first three decades of the sixteenth century. I confine myself to this group not only because it is a group, but because I know of few other sustained discussions of the problem by logicians after Paul of Venice. Two fifteenth century authors, Stephanus de Monte and Andreas Limos raised the matter in the context of insolubilia; (2) the Italian Agostino Nifo (1470-1538) discussed it in two places; (3) and various other authors, such as the German Jodocus Trutvetter, mentioned the topic only in passing. (4) Nor is the matter pursued in any of the early printed *Sentence Commentaries* I have examined, including those written by such authors as Celaya and Major. (5)

The authors I shall discuss are first the two Frenchmen, Thomas Bricot (d. 1516) who did his main logical work in the last decade of the fifteenth century, and Jean Raulin (1443-1514) who entered the Benedictine Order at Cluny in 1497. Second, there is one German, Gervase Waim (c. 1491-1554) who began his studies at Paris in 1507 and was Rector

of the University in 1519. Third, there is one Belgian, Pierre Crockaert (Peter of Brussels) (d. 1514) who became a Thomist. Fourth, there are two Scotsmen, John Major (1469-1550) who was taught by Bricot and Pardo before teaching at Paris himself from 1505 to 1517 and again from 1525 to 1531, and George Lokert (d. 1547) who was a pupil of Major. Fifth, there are five Spaniards, Hieronymus Pardo (d. 1505), Juan Celaya (d. 1558), Antonio Coronel, Juan Dolz and Fernando de Enzinas. Finally, there is Hieronymus de Sancto Marco about whom I know little except that he was at one time connected with Oxford, and that he studied theology at Paris. (6)

The contexts in which theories of the proposition were discussed varied. Bricot and Major discussed the matter in their works on *insolubilia*, (7) though what Major had to say was reprinted, somewhat amplified, as a separate section in complete editions of his works.(8) This context was a natural one, since in order to solve the problem of semantic paradoxes it was necessary to ask what it was that was true or false, and how these properties were to be defined. Dolz inquired about the total significate of the proposition in his treatise on Terms, (9) while Coronel and Pardo asked the same question in more general logic treatises. (10) In a commentary on Peter of Spain, Enzinas asked whether a proposition was true or false by indicating and if so, what it indicated. (11) Similar questions were posed by Raulin and Hieronymus de Sancto Marco. (12) Enzinas also asked about the total significate of a proposition in his work on mental propositions, and Waim asked the same question in his *Tractatus Noticiarum*. (13) Lokert raised the matter in his *Tractatus Noticiarum* by asking about the object of judgment. (14) Bricot, Celaya and Coronel asked about the objects of science, judgment and assent in their commentaries on the *Analytica Posteriora*. (15) Finally, Pierre Crockaert asked about the truth of a proposition in the second *quodlibet* attached to his commentary on Peter

of Spain. (16) Presumably because of the nature of a *quodlibet* his discussion is a good deal more elliptical and allusive than that found in the other sources." (pp. 81-83) (...)

"Conclusion.

One of the main features of late medieval logic was the heavy emphasis placed on the notion of reference. Another feature was the ontological parsimony which led logicians to reject impossible and imaginary objects, including complexe and incomplexe significabilia of the sort proposed by Gregory of Rimini. When we consider the theory of terms, we can see these two influences joining to produce a series of attempts to explain the reference of terms in intentional and modal contexts without abandoning either the view that entities must not be multiplied beyond necessity or the view that a unified theory of the reference of general terms is possible. Similar attempts were directed toward the explanation of the reference of such terms as "chimera," which were thought of as having no possible extension. In other places I have argued that one of the main virtues of Parisian logicians of the early sixteenth century was their recognition that the views mentioned above were irreconcilable, and that a purely ex-tensionalist approach to the signification of terms would have to be abandoned.¹⁶⁵ Their achievements with respect to the theory of the proposition itself are very similar. A number of them saw that both the attempt to postulate special objects of reference for propositions and the attempt to argue that propositions referred to things in the world had failed; and they also saw that the way of escape lay in the acknowledgement that the referential role of propositions is not after all primary. Their function is not to name or to refer, but to make an assertion which can only be further described by a that-clause or a paraphrase. In the last resort, one can only see what the meaning of a proposition is by understanding what claim has been made; pointing to an

object or group of objects will never serve as an answer." (pp. 120-121)

(1) Gabriel Nuchelmans, *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity* (Amsterdam/London: North Holland Publishing Company 1973). This work should be consulted for discussion, references and bibliography pertaining to Buridan, Ockham, Gregory of Rimini, and other medieval authors. For further bibliography see E. J. Ashworth, *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century: A Bibliography from 1836 Onwards* (Toronto: Pontifical Institute of Mediaeval Studies, 1978). [Note added to the reprint: "Since I wrote this paper, Nuchelmans's book dealing with the period from 1450 to 1650 has appeared, see Gabriel Nuchelmans, *Late-Scholastic and Humanist Theories of Proposition*,. Amsterdam: North-Holland, 1980.]"

(2) Andreas Limos, *Dubia in Insolubilibus* (Parisiis 1499) sig. a ii rb-b iv vb. Stephanus de Monte, *Ars Sophistica* [Paris, c. 1490?] sign, a vi r-b i r.

(3) Agostino Nifo, *Dialectica Ludicra* (Venetiis, 1521) fo. 50V-53V, cited as DL. Agostino Nifo, *Super Libros Priorum Aristotelis* (Venetiis 1554), fols. 6v-γτ. Nifo follows Pseudo-Scotus very closely, especially in the latter source: cf. *Super Librum I Priorum Quaestio VIII* in John Duns Scotus *Opera Omnia* (Parisius, L. Vivès, 1891) II, 98-101.

(4) Jodocus Trutvetter, *Summule Totius Logice* (Erphurdie, 1301) sign. AA vi r.

(5) In the earlier editions of his commentary on *Sentences I*, John Major gives a very brief discussion of some of the main views about objects of faith and knowledge, but he declines to discuss *complexe significabilia* on the grounds that they are "voluntarie ficta et sine auctoritate et sine ratione." John Major, *In Primum Sententiarum* (Parisiis 1519) fol. xvi ra. However in the Paris 1530 edition even this brief discussion

has been excluded. He explains in the preface that he has revised the work so as to exclude many Arts topics such as the intension and remission of forms, and he refers to the struggle against Lutheranism as a reason for concentrating on theology.

(6) I draw my information from the title and end pages of Hieronymus de Sancto Marco, *Opusculum de Universali Mundi Machina ac de Metheoricis Impressionibus*, s.l. [1505?], which also tells us that he was a Franciscan.

(7) Thomas Bricot, *Tractatus Insolubilium* (Parisius, 1492), cited as TI. John Major, *Insolubilia* (Parrhisiis, 1516).

(8) John Major, *Inclytarum Artium ac Sacre Pagine Doctoris Acutissimi Joannis Maioris Scoti Libri Quos in Artibus in Collegio Montis Acuti Parisius Regendo in Lucem Emisit* (Lugduni, 1516). All references will be to this edition.

(9) Juan Dolz, *Termini* (Parisius [c. 1511]).

(10) Antonio Coronel, *Prima Pars Rosarii* (Paris, s.a.), cited as PPR. Hieronymus Pardo, *Medulla Dyalectices* (Parisius, 1505).

(11) Fernando de Enzinas, *Primus Tr[actatus Summularum]* (Compluti, 1523) cited as PT.

(12) Jean Raulin, *In Logicam Aristotelis* (Parisiaca Urbe, 1500). Hieronymus de Sancto Marco, *Compendium Preclarum quod Parva Logica seu Summule Dicitur* (Impressum in alma Coloniensi universitate, 1507). All references are to this work.

(13) Fernando de Enzinas, *Tractatus de Compositione Propositionis Mentalis* (Lugduni, 1528) cited as PM.

Gervase Waim, *Tractatus Noticiarum* ([Paris] 1519).

(14) George Lokert, *Scriptum in Materiam Notitiarum* (Parisius, 1524).

(15) Thomas Bricot, *Logicales Questiones Subtiles ac Ingeniose super Duobus Libris Posteriorum Aristotelis* (Parisius, 1504) cited as AP. Juan Celaya, *Expositio in Libros Priorum Aristotelis* [Paris, c. 1516]. Antonio Coronel,

Expositio super Libros Posteriores Aristotelis (Parisius [1510]), cited as AP. Since completing this paper, I have discovered a similar discussion in the Aristotle commentary of another Scotsman, David Cranston: *Questiones super Posteriorum* ([Paris], 1506) sign, g iv ra-h iii ra. He mentions by name Andreas de Novo Castro, Buridan, Gregory of Rimini, Andreas Limos, Peter of Mantua and Hieronymus Pardo.

(16) Pierre Crockaert, *Summularum Artis Dialectice Utilis Admodum Interpretatio... una cum Fructuosis Quibusdam Quotlibetis ab Eodem Fratre Petro Compilatis in Conventu Parisiensi* (Parisius, 1508).

(165) See Ashworth, "Chimeras and Imaginary Objects: A Study in the Post-Medieval Theory of Signification", *Vivarium*, 15 (1977), 57-77. See also E. J. Ashworth, "'For Riding is Required a Horse': A Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic," *Vivarium*, 12 (1974), 94-123; and E. J. Ashworth, "'I Promise You a Horse': A Second Problem of Meaning and Reference in Late Fifteenth and Early Sixteenth Century Logic," *Vivarium*, 14 (1976), 62-79; continued: *Ibid.*, 14 (1976), 139-155.

7. ———. 1979. "The *Libelli Sophistarum* and the Use of Medieval Logic Texts at Oxford and Cambridge in the Early Sixteenth Century." *Vivarium* no. 17:134-158.

"I. Introduction

In this paper I intend to analyze two early printed logic texts, the *Libellus Sophistarum ad Usum Cantabrigiensium* (or Cantabrigiensem) published four times between 1497 and 1524, and the *Libellus Sophistarum ad Usum Oxoniensem*, published seven times between 1499 and 1530. I also intend to demonstrate the origin of these books in the manuscript tradition of the early fifteenth century. A complete description of the various editions of the printed texts, together with their reference numbers in the new

Short Title Catalogue, (2) will be found in the appendix." (p. 134)

(...)

"Obviously I do not pretend to have done more than sample the available manuscript sources, but the interested reader will find a large number of further references in De Rijk's invaluable studies of the *Logica Cantabrigiensis* and the *Logica Oxoniensis* (7).

The importance of my task stems from the fact that the *Libelli Sophistarum* provide the main evidence we have for the nature of logic teaching at Oxford and Cambridge in the first three decades of the sixteenth century. The nature of this evidence can best be brought into focus if we start by considering the state of logic in continental Europe, as revealed by a study of publication between 1472 and 1530. As a brief glance at Risse's *Bibliographia Logica* (8) will show, European presses produced an extremely large number of logic texts during this period. Some of them were editions of medieval authors alone, and some of them were editions of medieval authors combined with a contemporary commentary. Many more contained only contemporary writing, whether this took the form of a general introduction to logic, or a discussion of a particular topic such as terms or insolubles. Virtually none were anonymous, and virtually all were highly structured, with topics following one another in an orderly sequence. Even those few texts which were a compendium of shorter treatises were united either by author, as were the editions of Heytesbury's works, or by theme, as was the 1517 edition of Strode, Ferrybridge, Heytesbury and others on the topic of consequences. The texts were devoted purely to logic, and natural science crept in only in predictable places, such as commentaries on the *Analytica Posteriora*, the discussion of *incipit* and *desinit* in works on exponibles, or editions of such earlier writers as Heytesbury and Menghus Blanchellus Faventinus. In the assessment of these texts, knowledge of the manuscript

tradition is vital only when one wishes to know how original the writers were, or how accurately medieval texts were reproduced. On the whole the texts are self-explanatory, and simply by reading them one can get a good idea of how they might have been used in teaching.

The situation in England could not have been more different. In the first place, the number of logic books published was extremely small, even if one bears in mind that some may have perished without trace. Including the two *Libelli Sophistarum*, only seven separate works seem to have appeared, and of these only two are by named authors, both medieval. The first author is Antonius Andreas whose commentary on the *ars vetus* appeared at St. Albans in 1483, and the second is Walter Burleigh, whose commentary on the *Analytica Posteriora* appeared at Oxford in 1517.

Apart from the *Libelli Sophistarum*, the remaining works are a *Logica* which appeared at Oxford in 1483 [StC 16693]; the *Opusculum insolubilium* which appeared at Oxford in about 1517 [StC 18833] and in London in about 1527 [StC 18833a]; 9 and the *Libellulus secundarum intentionum* which appeared in London in 1498 [STC 15572], in about 1505 [STC 15573], and in 1527 [STC 15574] as well as in Paris before 1500.(10) I do not know the provenance of the first two works, but the third is an edition of the medieval tract which starts "Bene fundatum preexigit debitum fundamentum", and which is found incomplete in both Gonville and Caius 182/215 (p. 70) and Corpus Christi 378 (105 r 107 r).(11)" (pp. 135-136)

(2) *A Short Title Catalogue of Books Printed in England, Scotland &- Ireland and of English Books Printed Abroad 1475-1640*. First Compiled by A. W. Pollard & G. R. Redgrave. Second Edition, Revised and Enlarged, begun by W. A. Jackson & F. S. Ferguson. Completed by Katharine F. Pantzer. Volume 2, I-Z, London 1976.

(7) For the *Logica Cantabrigiensis* see L. M. De Rijk, 'Logica Cantabrigiensis -- A Fifteenth Century Cambridge

Manual of Logic', in: *Revue Internationale de philosophie* (Grabmann), 29e année, 113 (1975), 297-315. For the *Logica Oxoniensis*, see L. M. de Rijk, 'Logica Oxoniensis. An Attempt to Reconstruct a Fifteenth Century Oxford Manual of Logic', in: *Medioevo*, III (1977), 121-164.

(8) W. Risse, *Bibliographia Logica*. Band 1. 1473-1800, Hildesheim 1965.

8. ———. 1979. "A Note on an Early Printed Logic Text in Edinburgh University Library." *Innes Review* no. 30:77-79.

9. ———. 1980. "Can I Speak More Clearly Than I Understand? A Problem of Religious Language in Henry of Ghent, Duns Scotus and Ockham." *Historiographia Linguistica* no. 7:29-38.

Reprinted in Konrad Koerner, Hans-J. Niederehe and R. H. Robins (eds.), *Studies in medieval linguistic thought dedicated to Geoffrey L. Bursill-Hall on the occasion of his sixtieth birthday on 15 May 1980*, Amsterdam: John Benjamins, pp. 29-38.

"The title of this paper is somewhat misleading. The problem I intend to discuss is certainly one of religious language, but none of the three authors I am concerned with would have put the problem in the terms used above. The question Henry of Ghent (d. 1293) asked in his *Summae Quaestionum Ordinariaum* was: "Can God be more truly understood than he is signified or named?". Duns Scotus (1265-1308) and William Ockham (1280/85-1349) put their questions in yet another way. In their commentaries on Book I, Distinction 22, of Peter Lombard's *Sentences*, they asked respectively: "Is God nameable by us by a name signifying his essence?" (Duns Scotus 1966: 301) and "Can itinerant man impose a name to signify the divine essence distinctly?" (Ockham, *Sent.*, sign, z vi rb). The concern of all these authors arose from their beliefs that a spoken word can only signify if it is subordinated to an appropriate concept in the speaker's mind, and that our concept of God is an imperfect one. When we inquire about the relationship

between the words we use of God and the idea we have of him, it may seem that our words are more precise than our ideas warrant; yet it may also seem that our words fail to do justice to what we know about God. These apparent variations in the relation between word and concept have to be explained, given the natural assumption that our words will be neither more nor less precise than our ideas.

Before I consider the actual texts, I will discuss briefly two essential background issues, the notion of signification, and the question whether words signify ideas or things. The notion of signification was of course closely related to the notion of a sign, which Augustine had defined (1975: 87) as "Something which is itself sensed and which indicates to the mind something beyond the mind itself." (1) Accordingly, for a word to signify was for it to make known, reveal, express, or represent. Exactly which of these descriptions was most appropriate depended on the context, for in addition to written and spoken language, it was taken for granted that there was a mental language formed of elements all of which were naturally meaningful. A spoken word could make known an object or reveal it by causing (or by expressing) a concept, but a mental term, being itself a concept, could not be thought of in this way. In the early 16th century the Parisian author Raulin (c. 1443-1514) explained that concepts signified in their capacity as formal representations of objects, but that spoken words signified because they were objective representations (Jean Raulin, *Commentarium in logicam Aristotelis*, 1500. sign, g v ra-rb). That is, they were both the object and the cause of a cognition. Thus the explicitly causal definition of signification, "to signify is to constitute an understanding", (2) applied, he said, only to signs which had objective signification and not to concepts. What it was that a spoken word made known could be an object in the world, a formal element of an object in the world, the speaker's concept of that object, or the definition of that object. (3) Indeed, a

spoken word could also make known itself or its speaker, but these ways of making known were accidental to it as a conventionally significant unit. It should be obvious that the notion of *significatio* is by no means to be identified either with meaning or with reference, though elements of both meaning and reference were certainly involved." (pp. 29-30) (...)

" Ockham was in essential agreement with the position adopted by Duns Scotus in his much briefer treatment of the question "Is God nameable by us by a name signifying his essence?". Duns Scotus began (*Opera Omnia. Vol 17: Lectura in Librum Primum Sententiarum*, Civitas Vaticana, 1966:301) by saying that he took the view of Thomas Aquinas that nothing could be named by us more properly than it was understood to be false. (10) He said that he would offer no arguments instead, he offered an example. Suppose that we see a wall as having both whiteness and shape. Because the colour can vary while the shape remains, and the shape can vary while the colour remains, we conclude that there is some substratum. We can name this substratum A, and can use the general term 'body' of it, yet we have no specific notion of it. All we understand of it is that it is 'This being', and hence we can name it more truly than we can understand it. Just the same situation obtains with respect to God (p. 301). We have a general understanding of him as "This infinite being which depends on nothing", and we can refer to the divine nature by such names as 'God', yet we have no particular understanding of the divine nature which our terms denote. We do not understand it as "This essence". "Whence", he wrote, " I believe that we have many names of God which properly signify the divine nature, even though we do not understand it." (11)

Henry of Ghent, Duns Scotus and Ockham differed in the way they supported their positions and in their epistemological assumptions; yet there are two extremely

important subjects on which they agreed: first, that the problem of religious language was not one of religious language alone; and second, that the Thomistic connection between spoken language and understanding had to be loosened. They all accepted the doctrine whereby spoken language was subordinated to mental language; and they all accepted the commonsense view that in the absence of mental activity speaking becomes mere parrotting, but these beliefs did not blind them to the fact that language has functions which are to some extent independent of the individual's ability to understand the world. As Henry of Ghent emphasized, language has a descriptive function, and because words are common currency, human beings can describe more, or less, accurately than they understand. As Duns Scotus and Ockham emphasized, language also has a denotative function, and human beings can use words to denote objects even if they know little about these objects. Signification and naming are essentially linguistic activities, and they must be assessed as such. Our words can have degrees of truth and distinctness which our understanding lacks, just as our understanding can go beyond our words." (pp. 37-38)

(1) The more usual reference is to *De Doctrina Christiana* II, but Henry of Ghent made heavy use of *De Dialectica*.

(2) For discussion of this definition, see Spade "Some Epistemological Implications of the Burley-Ockham Dispute," *Franciscan Studies* 35 (1975), pp. 212–222; see pp. 214-15.

(3) The Latin translation of *Metaphysics* IV.7 1012 a 23 was "*ratio quam significat nomen est definitio*" (Thomas Aquinas, *Summa Theologiae* 1a 13.6, p.68) and accordingly a word was often said to signify a rath. But *ratio* had a variety of meanings, including "concept", "definition", "a formal element of things" and the "essence of things." For discussion see McCord Adams in Paul of Venice, *Logica magna: Part II, Fascicule 6: Tractatus de veritate et*

falsitate propositionis et tractatus de significato propositionis, F. del Punta (ed.), M. McCord Adams (trans.), (Oxford: Oxford University Press, 1978), pp. 272-73.

(10) He does not refer to Thomas by name. "Ad quod dicendum - sine argumentis - quod, ut mihi videtur, haec propositio falsa est quod nihil potest nominari a nobis magis proprie quam intelligatur, sicut quidam dicunt quod sicut intelligimus sic significamus, et quia non intelligimus Deum nisi ex creaturis, ideo non significamus nisi per nomina accepta a creaturis. Hoc enim falsum est."

(11) "Unde credo quod multa nomina habemus de Deo quae proprie significant naturam divinam quam tamen non intelligimus."

10. ——. 1980. "The Scholastic Background to Locke's Theory of Language." In *Progress in Linguistic Historiography. Papers from the International Conference on the History of the Language Sciences, Ottawa, 28-31 August 1978*, edited by Köerner, Konrad, 59-68. Amsterdam: John Benjamins. "In III.2.2 of the *Essay concerning Human Understanding* Locke said: "Words in their primary or immediate signification, stand for nothing but the ideas in the mind of him that uses them." In the eyes of most subsequent commentators, this statement encapsulates what Kretzmann ("The main thesis of Locke's semantic theory", *Philosophical Review*, 77, 1968, p. 177) has called "one of the classic blunders in semantic theory", namely, the thesis that words name or refer to ideas rather than things, and that meaning depends on private mental events. Since Locke's statement when so interpreted seems clearly false, many commentators, including Kretzmann and Landesman ("Locke's theory of meaning", *Journal of the History of Philosophy*, 14 1976, p. 35), have struggled to interpret it in some other way. However, they have undertaken this task without considering Locke's intellectual background. In this paper I intend to argue that the work of various 17th-

century scholastics who were read at Oxford, particularly the Polish Jesuit Martin Smiglecius (1564-1618), throws much light on Locke's thesis, both by filling in the arguments which he only sketched in passing, and by limiting the ways in which the argument quoted above can be read.

It is true that no direct link between Locke and Smiglecius has been established. However, since Locke recorded that two copies of Smiglecius' *Logica* were bought by his students (W. H. Kenney, *John Locke and the Oxford training in logic and metaphysics*, unpublished Ph.D. Thesis, St. Louis University, 1959, pp. 31-32), and since the work was published in Oxford in 1658, the year Locke took his M.A. degree, it can be hardly a matter of accident that many of his remarks in Book III of the *Essay* seem to echo remarks made earlier by Smiglecius." (p. 59)

(...)

"So far as Locke is concerned, he obviously followed such logicians as Burgersdijck in adopting the view whereby concepts rather than things are said to be the immediate significates of words. He may have been influenced in this by introductory logic textbooks, but it also fitted his general philosophical position better than the view of Smiglecius. His discussion of general terms indicates one reason why he thought it necessary to assign a certain kind of primacy to ideas, and in addition I think that Kretzmann was right (p. 184) when he mentioned Locke's representative theory of perception in the context of his theory of language. If ideas are the immediate objects of perception, then it makes good sense that they should also be the immediate objects of signification.

However, if I am right in supposing that Locke was acquainted with Smiglecius and some of the other authors, if only at second-hand, then certain limitations are surely imposed on what he could have meant when he wrote:

"Words in their primary and immediate signification stand

for nothing but the ideas in the mind of him that uses them". He cannot have intended to say that words refer to concepts, that when we say "The man is disputing" we are talking only about our own thoughts. Nor can he have intended to deny the obvious corollary that we use words to signify things secondarily and mediately. The alternative hypothesis, that Locke intended to convey some new doctrine by his use of the conventional phraseology, could only be sustained if one were willing to overlook two outstanding features of Locke's discussion. First, nearly everything he says about language in the first two chapters of Book III is closely parallel to the scholastic texts which were read at Oxford when Locke was an undergraduate and a tutor there. Second, he does not bother to give a detailed explanation and justification of his claim that words signify ideas primarily and immediately, which would be a very curious oversight on the part of one who had in mind a doctrine radically different from that normally conveyed by these words. Locke was careless, but he was not as careless as that." (pp. 66-67)

References

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12. ———. 1981. "The Problems of Relevance and Order in Obligational Disputations: Some Late Fourteenth Century Views." *Medioevo* no. 7:175-193.
13. ———. 1981. "Two Early Sixteenth Century Discussions of *Complexa Significabilia*." In *Sprache Und Erkenntnis Im*

Mittelalter. I. Akten Des Vi Internationalen Kongresses Für Mittelalterliche Philosophie Der Société Internationale Pour L'étude De La Philosophie Médiévale, 29 August - 3 September 1977 Im Bonn, 511-516. Berlin, New York: Walter de Gruyter.

"In his excellent book *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Nuchelmans states that "after the beginning of the fifteenth Century no really new or interesting views concerning our topics were put forward." (1) In this paper I hope to modify his judgment somewhat by examining the theories presented by Juan Dolz and Fernando de Enzinas, two Spaniards associated with the University of Paris in the early sixteenth Century (2). One cannot expect that their views on the signficade of the proposition were new in every detail, given the thoroughness with which earlier writers had explored the issue.

Nevertheless, one can argue that they put elements from earlier views together in a new way, and that they displayed an insight into the nature of propositions which had not been achieved by their predecessors.

I shall begin by saying a little about the background to their views. In the late fifteenth and early sixteenth centuries, the question of *complexe significabilia* was discussed by a small group of logicians. Those writers in whom I have found more than a passing reference are Bricot, Juan de Celaya, Antonio Coronel, Dolz, Enzinas, Hieronymus of St. Mark, Limos, Major, Nifo, Pardo, Peter of Brüssels, Raulin and Gervase Waim; and all of these except Nifo and possibly Hieronymus of St. Mark were associated with Paris (3).

Although some of them wrote theological works, they raised the issue only in their logical writings, either in works on *insolubilia*, in general introductions to logic, or in treatises on such topics as terms and mental propositions. The question was introduced in one of two closely related ways. Either they took the statement that a proposition was an

oratio which signifies the true or the false by indicating and inquired whether there was indeed a thing which was true or false, or they took such sentences as " "Man is an animal" signifies man to be an animal" and asked whether the *dictum* or infinitive phrase functioned as the name of some object or other. In the words of Dolz the question was: "Does a proposition signify some thing or some things or in some way? Is there to be given a *complexum significabile* or not, and if so, is it to be distinguished from the significates of the terms of the proposition?" (4) The issues of theological and scientific knowledge were referred to, if at all, only in passing, and the question of objects of belief versus objects of knowledge, objects of doubt and so on, was not often raised. In other words, we are faced with a discussion which is limited to those aspects of the matter which primarily concern a logician.

References to earlier authors included mention of Ockham, Duns Scotus, Ugolino and André de Neufchateau, but the focal point of discussion was provided by the rival positions of Gregory of Rimini and the one which, as Coronel put it, "Buridan applauded in whole or in part." (5)" (pp. 511-512) (...)

"To conclude, I would like to say that of all the sources mentioned by late fifteenth and early sixteenth Century authors, Dolz and Enzinas are obviously most influenced by Peter of Ailly. It is from him that they take the notion of a proposition signifying *aliqua liter*, and it is from him that Enzinas takes his emphasis on the relationship between the *dictum* and a phrase beginning with the word "that". But they also go beyond Peter of Ailly in ways which I find interesting and important. First, they introduce the notion of the proposition as having a syncategorematic function, and second, they reconcile the notion of propositional sense with the notion of propositional reference by admitting that in some contexts the *dictum* can have legitimate referential use (12). Moreover, Enzinas made use of Peter of Ailly's

point about "that" phrases to reinforce the insight that propositions are not referring phrases. I do not know of any earlier authors who approached the matter in quite the way that Dolz and Enzinas did; and, I must confess, I find their view more plausible than any of the others I am acquainted with." (p. 516)

(1) G. Nuchelmans, *Theories of the Proposition* (Amsterdam-London: North Holland Publishing Company, 1973) p. 279. This book should be consulted for a very thorough survey of the medieval background to the authors I am concerned with.

(2) Little seems to be known about their lives. Dolz came from Castellar in Spain, and taught at the College of Lisieux in Paris. Enzinas went to Paris in 1518, where he studied at the Colleges of Saint Barbara and Beauvais. He later taught at the University of Alcalá.

(3) For further details, see E. J. Ashworth, *Language and Logic in the Post-Medieval Period* (Dordrecht-Holland/Boston-U.S.A., D. Reidel Publishing Company, 1974) p. 55ff.

(4) J. Dolz, Termini (Parisius, s.a.) fo. v r.

(5) A. Coronel, Prima Pars Rosarii (Parisiis, 1512) sign, a iiii r.

(12) Cf. Kretzmann, op.cit., p. 767.

14. ———. 1981. "'Do Words Signify Ideas or Things?' The Scholastic Sources of Locke's Theory of Language." *Journal of the History of Philosophy* no. 19:299-326. Reprinted as essay VII in: *Studies in Post-Medieval Semantics*.

"My aim in this paper is to shed some light on Locke's claim that words signify ideas. Although I shall start by considering two contemporary attempts to interpret Locke's theory of language, I shall devote most of my attention to a group of late-sixteenth- and early-seventeenth-century authors whose views are likely to have influenced Locke. My main claim will be that Locke's theory of language is easier

to understand, if not to accept, when it is placed in what seems to be its proper context. When one is dealing with the great figures of early modern philosophy it is always a mistake to overlook their background. At Oxford, as at European universities, students were still reading scholastic texts in the mid-seventeenth century. That is, they were reading works written as university text books by Roman Catholic philosophers, predominantly Jesuit, who consciously placed themselves within the tradition of medieval philosophy and theology while at the same time making use of sixteenth-century developments in Aristotelian studies. Locke makes it very clear that he did not approve of the scholastic philosophy he was acquainted with, but it is *prima facie* implausible to suppose that nothing of what he read had any effect upon his writings. As I shall try to make clear, my own view is that his theory of language was produced within a scholastic context, and relied heavily on the arguments which had been developed by scholastic philosophers. Locke was original and innovative, but not when he said that words signify ideas. Obviously the scholastic philosophers of the late sixteenth and early seventeenth centuries were themselves writing within a tradition which cannot be overlooked if one wishes to understand their discussions. Equally obviously one cannot within the compass of a short paper on the background to Locke deal adequately with the background to Locke's background. However, a few brief remarks may be in order. The view that words signify ideas or concepts (two words which for the purposes of this paper may be used interchangeably) stems from Aristotle and in particular from Boethius's translation of Aristotle, *De Interpretatione* I6 a 3. (1) He said that spoken words (*ea quae sunt in voce*) were signs (*notae*) of those passions which are in the mind; and every commentator agreed that *passiones* were to be taken as concepts rather than passions in the normal sense. By the late thirteenth century a debate was raging over the

question whether words could properly be said to signify concepts rather than things. (2) Roger Bacon said that there was "not a moderate strife among famous men," (3) and a little later Duns Scotus wrote of a "great altercation." (4) Everyone who wrote a commentary on *De Interpretatione* had something to say on the issue; and it also turned up in other works, in Sentence commentaries and, for instance, in Buridan's *Sophismata*. Aristotle commentaries written in the late fifteenth and early sixteenth centuries were still largely focused on the arguments of earlier writers, especially Duns Scotus and Buridan, though occasional use was made of the commentary by St. Thomas Aquinas. (5) The later-sixteenth- and early-seventeenth-century writers I am concerned with took their theme from the medieval debates and, for the most part, their conclusions. However, as I shall explain below, their emphases and some of their arguments are quite different. Thus a by-product of this paper will be additional evidence of ways in which late scholasticism differed from medieval scholasticism." (pp. 299-301)

(...)

"To conclude, I would like to ask whether Locke intended to summarize his theory of meaning when he said that words primarily and immediately signify ideas. I have argued that in the scholastic authors the issue was one of making known rather than of meaning, and this is borne out by the distinction I earlier quoted from Smiglecius between the confused idea conveyed by a name and the explicit idea conveyed by the definition of the name. Obviously one would answer the question "What does this word mean?" not by exhibiting the confused idea expressed by the word, but by producing the definition. If it turns out that a definition just is a sequence of concepts, then meanings can be identified with concepts; but this is a thesis which has to be stated and justified separately from the initial thesis, that words make known concepts. I suggest that the same

distinction should be applied to Locke. In III. 3. 10 he tells us that "the defining of words . . . , is nothing but declaring their signification." Later, in IV. 8.4., he refers to the romance knight "who by the word *palfrey* signified these ideas: -- body of a certain figure, four-legged, with sense, motion, ambling, neighing, white, used to have a woman on his back"; and I think that this passage and others like it are certainly intended to give an account of meaning. What a word means according to Locke just is a series of ideas. However, one must now ask whether a distinction can be drawn between this series of ideas and the original complex idea of a palfrey. I think that it can, at least psychologically. There is certainly a sense in which a complex idea for Locke just is a group of less complex ideas, but this group is unified by its name, "which is as it were the knot that ties them fast together" (III. 5. 10). Furthermore, giving a meaning must involve a psychological progression from the original idea to its components listed separately. The romance knight would have to reflect before he recognized all the eight components of his complex idea "palfrey," just as one may have to reflect before one realizes that 12 is identical to $7 + 5$. To be sure, there is a close link between a word's signifying an idea and a word's having a meaning. If the speaker cannot on reflection give a definition for the word he has used, if he cannot break down his complex idea into its component parts, then one will be tempted to say that he has no idea of what a palfrey is, and that nothing was made known by his utterance of the word "palfrey." But the fact that giving a definition serves as a criterion for having an idea does not entitle one to blur the distinction between an idea's being made known through the utterance of a word and a word's having a meaning. Locke has an ideational theory of meaning, but contrary to what Kretzmann and Landesman assert, it is not stated in III. 2." (pp. 325-326)

(1) Aristoteles Latinus II I-2. *De Interpretatione vel Periermenias Translatio Boethii Specimina Translationum*,

edidit Laurentius Minio-Paulello (Leiden: E. J. Brill, 1965), p. 5. For an interesting discussion of Aristotle's original text and what he may have meant by it, see Norman Kretzmann, "Aristotle on Spoken Sound Significant by Convention," in *Ancient Logic and Its Modern Interpretations*, John Corcoran, ed. (Dordrecht and Boston: D. Reidel, 1974), pp. 3-21.

(2) There was also a debate among the ancient commentators on Aristotle, but its influence on the Middle Ages seems to have been only through references in Boethius's two commentaries on the *De Interpretatione*.

(3) K. M. Fredborg, Lauge Nielsen, and Jan Pinborg, "An Unedited Part of Roger Bacon's 'Opus Maius': 'De Signis'," *Traditio* 34 (1978): 132.

(4) John Duns Scotus. *Ordinatio* I d. 27, qq. 1-3, n. 83 in *Opera Omnia* VI (Civitas Vaticana, 1963), P. 97.

(5) For further discussion see E. J. Ashworth, "Words, Concepts and Things: A Study of *Perihermenias* Commentaries from the Late Thirteenth to the Sixteenth Century," to appear in a special issue of *Paideia* on medieval philosophy [not published]. For interesting material on the reception of St. Thomas Aquinas's views in the sixteenth century, see F. E. Cranz, "The Publishing History of the Aristotle Commentaries of Thomas Aquinas," *Traditio* 34 (1978): 157-92. Cranz's work has considerable bearing on what I shall say below about the differences between late-sixteenth and early-seventeenth-century commentaries on *De Interpretatione* 16 a 3 and the medieval commentaries.

15. ———. 1981. "Mental Language and the Unity of Propositions: A Semantic Problem Discussed by Early Sixteenth Century Logicians." *Franciscan Studies* no. 41:61-96.

Reprinted as essay VI in: *Studies in Post-Medieval Semantics*.

"Gregory of Rimini's influential *Sentence Commentary* was written in the 1340s. One of the questions which he

discussed in his prologue was how it is that a mental proposition functions as a united whole, with a force that its apparent parts taken separately do not possess. (1)

In this article I intend to explore the reactions to Gregory's arguments among a group of logicians who studied or taught at Paris in the first three decades of the sixteenth century. The most important of the authors I shall examine are three Spaniards: Jerome Pardo (d. 1502 or 1505) whose *Medulla Dialectices* was published in 1500 and again in 1505; Antonio Coronel, whose *Duplex Tractatus Terminorum* was published in 1511 and whose *Prima Pars Rosarii in qua de Propositione Multa Notanda* was published at about the same time; and Fernando de Enzinas, whose most noteworthy book for our purposes was his *Tractatus de Compositione Propositionis Mentalis Actuum Sincaethegoreumaticorum Naturam Manifestans*, first published in 1521, and reprinted in 1526 and 1528." (p. 61)

(...)

"In conclusion there are two points I would like to make. On the one hand it is quite clear that when early sixteenth century logicians were discussing mental language they took it that they were concerned with philosophy of mind. In part this is the natural result of their approach to signification as a causal process. If one defines "signify" in terms of making known or representing to the cognitive faculty, then the question of the various effects of words upon the hearer's mind, and what they reveal about the speaker's mind, will embrace both semantic and psychological issues. One also has to bear in mind the part played by speaker intentions in endowing linguistic aggregates with their propositional force.(134) At this level the study of language cannot be separated from the study of mental attitudes and processes. On the other hand, if one isolates the part of the discussion which was devoted to purely semantic issues, then it is no longer necessary to postulate mental language as such.

Everything that was said about the semantic function of syncategorematic acts, subject and predicate, the unity of propositions and the equivalence between propositions, could be described in neutral terms as the study of semantic structure leaving it quite open what the relationship is between the semantic structure of a given utterance and the psychological states of the speaker. Nor does there seem any genuine need to postulate a naturally meaningful language in addition to conventionally meaningful language, since a given speaker's psychological states can be adequately described in terms of conventional language, and since synonymy can be redefined for conventional languages. Indeed, one can argue that the notion of a naturally meaningful mental language is without any function, since we have no criteria for identifying it or its structures. But this is to go far beyond Gregory of Rimini and sixteenth century reactions to his arguments." (pp. 95-96)

(1) Gregory of Rimini, *Gregorii Ariminensis O.E.S.A. Super Primum et Secundum Sententiarum* (Reprint of the 1522 edition: St. Bonaventure, N.Y.: The Franciscain Institute; Louvain: E. Nauwelaerts; Paderborn: F. Schöningh, 1955), fol. 3va-5rb.

(134) But Michael Dummett, *Frege: Philosophy of Language* (London: Duckworth, 1973, p. 311, reminds us that "*linguistic* acts should be classed as conventional actions, not as the external expression of interior states. Assertion, for example, is to be explained in terms of the conventions governing the use of those sentences which are understood as having assertoric force, not as the utterance of a sentence with the intention of expressing one's interior act of judgment (or interior state of belief) that it is true."

16. ———. 1982. "The Eclipse of Medieval Logic." In *The Cambridge History of Later Medieval Philosophy*, edited by Kretzmann, Norman, Kenny, Anthony P. and Pinborg, Jan, 787-796. Cambridge: Cambridge University Press.

"The view that the insights and developments of medieval logic were eclipsed during the fifteenth century by a humanist, rhetorically-oriented logic has long been popular, but it needs considerable revision and modification. In what follows I shall first give a brief account of what happened to the writing, teaching, and publication of logical works in the medieval style, by which I mean those which discuss such topics as consequences, insolubles, exponibles, and supposition. I shall then examine in more detail what was actually said about certain medieval doctrines in the late fifteenth and sixteenth centuries in order to indicate both where logicians of the period had something new to contribute, and where there were departures from medieval doctrines which cannot be attributed to new logical insight. (1) My conclusion will be that medieval logic as a living tradition did largely disappear, but that the eclipse dates from about 1530 (in so far as a specific date can ever sensibly be offered) rather than the mid fifteenth century." (p. 787)

(...)

"Conclusion.

Why did these interesting and varied treatments of medieval logical themes cease so abruptly after 1530? (9) Humanism alone cannot be the answer, since it apparently triumphed only by default. Italian universities continued to teach medieval logic long after the attacks on it by such men as Lorenzo Valla; and Agricola's logic did not capture Paris until the production of texts in the medieval style had already ceased. (10) Humanism certainly had a part to play in the process, however. Soto, for instance, came to believe as a result of humanist influences that doctrines which were difficult and not clearly expressed by Aristotle should be omitted from logic, and that too much time was devoted to summulist doctrines in the teaching of logic. Accordingly, the later editions of his *Introductiones dialecticae* were very much altered and simplified. Another instructive example is

Agostino Nifo's *Dialectica ludicra* (1520). Here we have an introductory text written by a leading Aristotelian who had a good knowledge of medieval doctrines, yet he distorts them completely by describing only those parts of the scholastic theory of terms and supposition theory which are directly applicable to standard categorical propositions. (11) No one who became acquainted with medieval logic through Nifo would understand the function of the non-Aristotelian parts at all. A very plausible account of the indirect effect of humanism on logic teaching is provided by Terrence Heath, whose study of the teaching of grammar at three German universities at the end of the fifteenth century and beginning of the sixteenth century shows that the change to non-medieval logic was preceded by the change to humanistic grammar. (12) The significance of this sequence of changes is brought out in Heath's claim that medieval grammar prepared the student for medieval logic, whereas humanist grammar did not. One may also speculate that social changes were influential in creating a need for men with a new style of education. The rise of modern physics has been cited as a possible cause, but this suggestion cannot be accepted, given that modern physics can hardly be said to have risen before the end of the sixteenth century. (13) The judgement of a contemporary logician might be that medieval logic came to an end because no further progress was possible without the concept of a formal system and without the development of a logic of relations. This view is borne out by the desperate, complicated attempts to analyse such propositions as 'Every man has a head' that are to be found in the writings of the Parisian logicians. They certainly pushed medieval logic to its limits, but whether they gave up in despair because they realised that that was what they had done is another matter. For the moment our question must remain without a fully satisfactory answer." (pp. 795-795)

(1) For further details about the period as a whole, and for some of the doctrines mentioned below, see Ashworth, *Language and Logic in the Post-medieval Period* (Synthese Historical Library, 12), Reidel 1974, and Wilhelm Risse, *Die Logik der Neuzeit* (Band I: 1500-1640), Frommann Holzboog 1964. For a bibliography of primary sources, see Risse, *Bibliographia Logica. Verzeichnis der Druckschriften zur Logik mit Angabe ihrer Fundorte*, (Band I. 1472-1800), Georg Olms 1965. For a bibliography of secondary sources, see Ashworth, *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century: A Bibliography from 1836 Onwards* (Subsidia Mediaevalia, 9), Pontifical Institute of Mediaeval Studies 1978.

(9) Charles B. Schmitt, 'Philosophy and Science in Sixteenth-Century Universities: Some Preliminary Comments', in Murdoch, John E. and Edith Sylla, eds., *The Cultural Context of Medieval Learning*, Reidel 1975, p. 512, notes that certain branches of medieval physics also declined. He writes: '... several fourteenth-century traditions - including nominalism, the logical traditions of *sophismata* and *insolubilia*, and the Merton and Paris schools of philosophy of motion - continued on into the first few decades of the sixteenth century and after that quickly lost ground to other approaches and sets of problems. The printing-history of the medieval texts in question as well as new commentaries being written on Aristotle indicate this. Why this happened is not clear.

Humanism had a strong impact, as did the reintroduction of the writings of the Greek commentators on Aristotle, but neither of these facts explains why the calculators and writers on *sophismata* lost out, while the commentaries of Averroes did not. In brief, certain medieval aspects of the tradition expired in the early sixteenth century, while other equally medieval aspects continued to play an important role.'

(10) For a discussion of Valla, Agricola, and their influence, see Lisa Jardine, 'Lorenzo Valla and the Intellectual Origins of Humanist Dialectic', *Journal of the History of Philosophy* 15:143-64 1977.

(11) See Ashworth, 'Agostino Nifo's Reinterpretation of Medieval Logic', *Rivista critica di storia della filosofia*, 31 (1976) 355-74.

(12) Terrence Heath, 'Logical Grammar, Grammatical Logic, and Humanism in Three German Universities', *Studies in the Renaissance* 18 (1971) 9-64.

(13) William and Martha Kneale, *The Development of Logic*, Clarendon Press 1962, p. 307. It should be noted that the Kneales speak as if interest in formal logic declined only during the seventeenth century, so that their reference to modern physics is not implausible in its context.

17. ———. 1982. "The Structure of Mental Language: Some Problems Discussed by Early Sixteenth Century Logicians." *Vivarium* no. 20:59-83.

Reprinted as essay V in: *Studies in Post-Medieval Semantics*.

"Preface.

As is well known, late and post-medieval logicians shared the belief that there were three types of language, spoken, written, and mental. (1) Spoken and written languages had conventional meaning, and were in fact, though not necessarily so, different for different groups of people.

Mental language, on the other hand, was thought to have natural meaning and to be common to all men. The obvious question to ask about mental language concerns its structure and how this relates to the structure of spoken or written languages, especially Latin. Ockham's position on the matter has been investigated by more than one author; (2) so in this paper I intend to focus on the views held by logicians in early sixteenth century Paris, and by some of those earlier logicians who most influenced them. I shall leave firmly aside the obvious philosophical question of

what criteria could possibly be used in determining a structure for mental language which is independent of spoken or written language. Suffice it to say that late medieval logicians saw no problem here.

The main issues concerning structure arose from a consideration of the categorical proposition. This was taken to be the simplest kind of proposition, which at its most basic displays a subject and a predicate, both in the nominative case, and the copula "is" or "are". To these ingredients may be added quantifiers such as "all" and "some", negation signs, adjectives, adverbs, and other modifiers. Two kinds of problem are presented by this account. First there is the question of what to say about spoken or written propositions which do not fit the standard mould. I include here such sentences as "Pluit" "It is raining" which do not have a subject; sentences displaying so-called adjectival verbs such as "runs" in "Socrates runs" which do not have a separate copula and predicate; and sentences containing pronouns and demonstrative terms such as "I am running" and "This is white", whose subject is given only by the context of the utterance. Second, there is the question of how to account for certain features of those spoken and written propositions which do fit the standard mould, namely such features as syncategorematic terms, tense variations (which will not be discussed in this paper) and variations of number, case and gender. It was in their discussion of these issues that Parisian logicians gave their most detailed account of the structure of mental propositions." (pp. 59-60)

(...)

"It seems that the road was left open to considerable variation in mental language. Two speakers could perfectly well utter sentences which were logically equivalent and which picked out the same state of affairs without using the same mental propositions. As a result, one can suggest both that it is consistent with the post-medieval view that

sentences in different languages may be equivalent and translatable without exhibiting precisely the same deep structure, and that there is no reason why one should speak of mental language as containing "*the* forms that are necessary for any true description of the world", as Trentman put it in his account of Ockham's view of mental language. (110) Ockham may have had an ideal language in mind; Enzinas and his contemporaries did not. (111)". (p. 82)

(1) See Gabriel Nuchelmans, (1) *Theories of the Proposition. Ancient and Medieval Conceptions of the Bearers of Truth and Falsity*, Amsterdam/London 1973 and (2) *Late Scholastic and Humanist Theories of the Proposition*, Amsterdam, Oxford, New York 1980, passim.

(2) For a discussion of Ockham's views, see Peter Geach, *Mental Acts*, London 1957, pp. 101-104 and John Trentman, "Ockham on Mental", in: *Mind*, 79 (1970), 586-590.

(110) Trentman, p. 589, my italics.

18. ———. 1983. "English *Obligationes* Texts after Roger Swyneshed. The Tracts Beginning *Obligatio Est Quaedam Ars*." In *The Rise of British Logic. Acts of the Sixth European Symposium on Medieval Logic and Semantics, Balliol College, Oxford, 19-24 June 1983*, edited by Lewry, Osmund P., 309-333. Toronto: Pontifical Institute of Mediaeval studies.

"Introduction.

In this paper I hope to shed some light on the development of *obligationes* in England by examining a number of texts which all have the same *incipit*.

'*Obligatio est quaedam ars*'. A list of the manuscripts and early printed books I have used, together with the sigla I have adopted, will be found in Appendix A. (1) In Appendix B I have given a list of other relevant manuscripts which I was unable to consult for reasons of time. (2) My paper has three parts. Part One contains a general survey of the texts,

with an account of their relationship to each other and to the *Logica oxoniensis* text.

Part Two contains a discussion of the doctrines and influence of Billingham's *Ars obligatoria* and the almost identical treatise found in the *Logica oxoniensis*. Part Three contains a detailed analysis, with references, of the texts discussed in Part Two.

It seems appropriate to begin with some further remarks about the incipit itself. The fullest version is found in Richard Billingham, who writes: (3)

'Obligatio est quaedam ars mediante qua aliquis opponens potest ligare respondentem ut ad suum bene placitum respondeat ad obligationem sibi positam; vel obligatio est oratio mediante qua aliquis obligatus tenetur affirmative vel negative ad obligationem respondere.'

(Obligation is an art whereby some opponent can bind a respondent to reply at the opponent's pleasure to the obligatory sentence posited to him. Alternatively, an obligation is a sentence by virtue of which someone who is obligated is committed to reply affirmatively or negatively to the obligatory sentence.)

As can be seen from the appendices, a number of variations in this incipit were possible. A and Q replaced 'opponens potest ligare' in Billingham's first definition with the phrase 'obligatus tenetur' from the second definition; and a number of authors added 'affirmative vel negative' to the first definition.

Despite these minor variations, there is no doubt that the texts listed in Appendix A have basically the same *incipit*; but as it shall show, it does not follow from this that the texts listed are otherwise identical, or even similar." (pp. 309-310)

(...)

"I shall finish with a few remarks about the influence of Billingham and the *Logica oxoniensis*. Generally speaking, it seems to have been slight. Apart from Wyclif, no named

author, including John of Holland and Paul of Venice in the *Logica parva*, adopted Billingham's organization of the material. There was a little discussion of Billingham's definition of *obligatio*, of his attitude to inconsistent *posita* and of his conjunction rules, but one cannot claim that these topics loomed large in the literature. The most striking influence is that of the sophisms themselves, a number of which reappear in Albert of Saxony (see Part Three, Section B). I suspect that the apparent popularity (judging by the number of extant manuscripts) of the *Logica oxoniensis* in the fifteenth century, a period when people had on the whole ceased to write original *obligationes* treatises, stems solely from its character as a convenient brief compendium." (pp. 317-318)

19. ———. 1984. "Inconsistency and Paradox in Medieval Disputations: A Development of Some Hints in Ockham." *Franciscan Studies* no. 44:129-139.

"The Liar Paradox is well-known, as is the way it calls into doubt some of our most basic semantic assumptions. In this paper, I intend to consider a more modest group of paradoxes, that is, propositions which seem puzzling, absurd or even inconsistent whether because of some feature of the proposition itself or some feature of the situation in which it is uttered.(1) Examples from ordinary English include the familiar cases "I have nothing to say to you," "My lips are sealed," "I have no comment to make." They also include such sentences as "I'm sorry, I don't speak any English," "I'm quite incapable of uttering a grammatically correct sentence," "I never generalize," "Don't talk to me, I'm asleep," or even "I do not exist." Such pragmatic paradoxes will turn out to have certain features in common with the Liar Paradox.

Some of them give rise to logical contradictions, some of them are self referential, some of them seem to include a reference to their own truth or falsity. But there are also important differences, as I hope to demonstrate.

Hints of a solution to some of these problems are to be found in Ockham; but my main discussion will be based on the work of several later medieval logicians, notably John Buridan, Albert of Saxony and William Buser, all of whom were active at the University of Paris in the middle years of the fourteenth century. To be precise, Buridan taught there from about 1320 to about 1360, Albert taught there from 1351 to 1362, and Buser taught there from 1357 until after 1364. (2) I shall also draw on the work of Paul of Venice, who wrote his *Logica Magna* in 1397-1398. These writers all had a very strong interest in pragmatic paradoxes. The reason for this has to do with the nature of the university curriculum. Virtually all undergraduate students were in the Arts Faculty, and at least the first two years of the four year course were largely devoted to the study of logic." (pp. 129-130)

(...)

"I shall conclude with some brief remarks about the relationship between pragmatic paradoxes and the Liar Paradox. One general way of characterizing the cases I have examined is to say that in each case there is an inconsistency which arises from the relationship between the rules of the game, the facts of the situation (including the syntactic properties of what is said) or some initial conditions on the one hand, and a particular utterance on the other. However, these rather general remarks could also be applied to the Liar Paradox. Alternatively, one might say that the difference between pragmatic paradoxes and the Liar Paradox lies in the importance of the principles which are thrown in doubt. This is true, but unhelpful. Perhaps the real difference is that in none of the cases I have mentioned was it difficult to fix a referent for the sentence uttered, whereas in the case of the Liar Paradox the apparent reference fails. If I say "My reply is in the negative" the referent of "my reply" is fixed by the context; and if I say "What I am now saying is in English" the referent of what I

am now saying is similarly fixed. But if I say "What I am now saying is false," apparent reference is made to the content of my utterance, and there is now nothing either in the context of my utterance or in its syntactic features which fixes that reference.²⁶ Unsurprisingly, it is the presence of the semantic term "false" which brings about this unhappy situation." (p. 139)

(1) For some twentieth century discussion and further references see A. Pap, *Semantics and Necessary Truth* (New Haven and London: Yale University Press, 1958) 259-267; C. L. Hamblin, *Fallacies* (London: Methuen & Co., 1970) 301.

(2) For information about Buser, see C. H. Kneepkens, "The Mysterious Buser Again: William Buser of Heusden and the *Obligationes Tract Ob rogatum*" in *English Logic in Italy*, edited by A. Maierù (Naples: Bibliopolis, 1982) 147-166.

(26) These remarks are loosely based on D. Odegard, *Knowledge and Scepticism* (American Philosophical Quarterly Library of Philosophy. Totowa, New Jersey: Rowman and Littlefield, 1984) 44-52.

20. ———. 1984. "Locke on Language." *Journal of Philosophy* no. 14:45-73.

Reprinted as essay VIII in: *Studies in Post-Medieval Semantics*.

Reprinted also in: Vere Chappell (ed.), *John Locke, Theory of Knowledge*, New York: Garland Publishing 1992, pp. 55-83 and in: Vere Chappell (ed.), *Locke*, New York: Oxford University Press 1998 pp. 175-194.

"Locke's main semantic thesis is that words stand for, or signify, ideas. He says this over and over again, though the phraseology he employs varies. In Book III chapter 2 alone we find the following statements of the thesis: (1) '... Words ... come to be made use of by Men, as the *Signs* of their *Ideas*' [111.2.1; 405:10-11] (*); (2) 'The use then of Words, is to be sensible Marks of *Ideas*; and the *Ideas* they stand for, are their proper and immediate Signification' [III. 2.1 ;

405:15-17]; (3) *Words in their primary or immediate Signification, stand for nothing, but the Ideas in the Mind of him that uses them*' [111.2.2; 405:21-2]; (4) 'That then which Words are the Marks of, are the Ideas of the Speaker' [111.2.2; 405:27-8]; (5) Words, as they are used by Men, can properly and immediately signify nothing but the Ideas, that are in the Mind of the Speaker' [111.2.4; 406:29-31]. Locke offers no explanation of the terms he uses in these remarks, and I am going to take it that the phrases 'stand for;' 'being a mark of;' and 'being a sign of' are all roughly synonymous with the term 'signify.' The purpose of this paper is to explore what Locke intended to convey when he said that words signify ideas. I shall attempt to defend him against some, though not all, standard objections; and part of my defense will rest on the claim that Locke was using 'signify' in the same way that his scholastic predecessors used the Latin term '*significare*'. My paper falls into three parts. First, I shall give a general description of Locke's account of language; second, I shall look more closely at the scholastic theories of mental language and of signification, and their relation to Locke's theory; third, I shall return to Locke's text to examine what he has to say about the signification of general terms, and how it is that our ideas conform both to the ideas of other men and to external objects." (pp. 45-46) (...)

"I have now arrived at the heart of my argument, for not only was 'signify' a quasi-technical term for Locke; it was a genuinely technical term in the scholastic literature of the period, and indeed, in all medieval writings concerned with the theory of language. I wish to contend that Locke's use of the term 'signify' makes much more philosophical sense if one sees it against the scholastic background than if one approaches it from the point of view of twentieth century theories of meaning. It also makes a good deal more historical sense to suggest that Locke was influenced by his

background, rather than being a complete innovator in every aspect of his thinking.

But before I examine the late and post-medieval doctrine of signification, I should explain my grounds for supposing that Locke was acquainted with it. Locke went to Oxford in 1652 at the age of twenty, and he stayed there until 1665, first as an undergraduate at Christ Church, and then as a lecturer and tutor at the same college. The Oxford curriculum, as laid down by the Laudian statutes of 1636, covered a variety of subjects. (17) The undergraduate was supposed to study grammar, rhetoric, logic, moral philosophy, political philosophy, geometry, and music; and at the M.A. level such subjects as metaphysics, natural philosophy, history and Greek were added. In theory the main texts studied for logic and metaphysics (as for ethics, natural, and political philosophy) were those of Aristotle, but in practice secondary sources were used. The leading metaphysics texts included some by Catholics such as the Frenchman, Eustace of St. Paul, and some by Protestants, such as the German, Scheibler, and the Dutchman, Burgersdijck. They were all predominantly scholastic in nature, by which I mean that they were highly organized, were heavily influenced by the renewed Aristotelianism of the sixteenth century, and were equally heavily influenced by such medieval authors as Thomas Aquinas (who was undoubtedly more popular in the seventeenth century than in the thirteenth) and Duns Scotus. Even the Protestant authors seem to have used mainly Catholic sources. The leading logic texts were also predominantly Aristotelian, with a few references to specifically medieval developments such as supposition theory. Two of the most popular at Oxford were by the Flemish Jesuit, Du Trieu, and the Polish Jesuit, Smiglecius, though Burgersdijck's logic text was used as well as his metaphysics text. Indigenous Oxford authors were represented by such men as the very popular Robert Sanderson whose logic text was repeatedly published up to

1841. Nothing that anyone would count as new philosophical work was being done at Oxford (except by Robert Boyle, who was not a member of the university) and hardly any attention was paid to such figures as Descartes. Locke himself may not have read Descartes until 1666 or 1667, after he had left Oxford.(18)" (pp. 55-56)
(...)

"Conclusion

If Locke has been correctly absolved of the twin accusations that words mean ideas and that ideas are invariably images, his discussion of language can be viewed in a somewhat more sympathetic light than is usually the case. His emphasis on the place of ideas in the significative process can be interpreted as an emphasis on the importance of a speaker's concepts, beliefs, and experiences, in the process of communication; and he can be credited with a genuine awareness that there is also something public about language use. Not only must the things spoken of be publicly accessible (at least some of the time), but definitions too must be publicly ascertainable (and this all of the time). To this extent Hacking is wrong when he argues that Locke has no theory of meaning in the sense of a theory of public discourse,(46) but he is correct if we place the emphasis on the word 'theory.' In so far as Locke had a fully-fledged semantic theory, as opposed to a collection of observations." (p. 72)

(*) Page and lines reference are to John Locke, *An Essay Concerning Human Understanding*, edited with a foreword by Peter H. Nidditch (Oxford: Clarendon Press, 1979).

(17) See E.J. Ashworth, "Philosophy Teaching at Oxford" to appear in the new edition of J.-P. Schobinger, ed., *Friedrich Ueberwegs Grundriss der Geschichte der Philosophie. V. Philosophie im 17 Jahrhundert*, (Basel, Stuttgart: Schwabe & Co.), [1988].

(18) Various dates have been suggested including c.1656 and after 1671: see H.A.S. Schankula, "Locke, Descartes and the

Science of Nature," *Journal of the History of Ideas*, 41 (1980) 461-3. I am following Maurice Cranston, *John Locke. A Biography* (London: Longmans Green and Co. 1957), 99-100.

(46) Ian Hacking, *Why Does Language Matter to Philosophy?*, (New York: Cambridge University Press 1975), p. 52.

21. ———. 1985. "An Annotated Bibliography of Medieval and Renaissance Logic." In *The History of Mathematics from Antiquity to the Present. A Selective Bibliography*, edited by Dauben, Joseph, 290-292. New-York: Garland.

22. ———. 1986. "Renaissance Man as Logician: Josse Clichtove (1472-1543) on Disputations." *History and Philosophy of Logic* no. 7:15-29.

"Josse Clichtove represents a turning point in the history of disputation, for he combines one of the earliest accounts of the doctrinal disputation with one of the latest accounts of the obligational disputation. This paper describes the nature and significance of the theories that he offered. Particular attention is paid to the doctrines of truth, necessity and possibility which lie behind his doctrines; and also to the light which his work throws on the aims and nature of an obligational disputation."

23. ———. 1987. "Jacobus Naveros (Fl. Ca. 1533) on the Question: "Do Spoken Words Signify Concepts or Things?". In *Logos and Pragma. Essays on the Philosophy of Language in Honor of Professor Gabriel Nuchelmans*, edited by Rijk, Lambertus Maria de and Braakhuis, Henk A.G., 189-214. Nijmegen: Ingenium Publishers.

"In a volume dedicated to the celebration of Gabriel Nuchelmans' achievements, it seems appropriate to pick up one of the themes that he himself has discussed. In his seminal work on post-medieval philosophies of language, *Late Scholastic and Humanist Theories of the Proposition*, Nuchelmans devoted a section to the relation between written, spoken and mental propositions (1). In it he made

reference to a few writers from the fifteenth and sixteenth centuries, such as George of Brussels and Petrus Tartaretus, and he spoke of their reactions to arguments put forward by Aquinas, Ockham and Buridan. In this paper I intend to explore in more detail the question of whether words signify concepts or things, as it was discussed by Jacobus Naveros, a Spaniard who studied and taught at Alcalá, and whose lengthy and interesting commentary on the *Perihermenias* was first published in 1533². I shall also discuss the 1530 commentary of Alphonsus Prado, who taught at Alcalá until 1534, when he moved to Coimbra³. Both men were influenced by the strong school of logic at Paris, and I shall make particular reference to the Parisian authors Johannes Raulin (1443-1514), Petrus Crockaert de Bruxellis (1455/70-1514), and Johannes Dullaert (ca. 1470-1513)⁴. A number of other authors who discussed the question in some detail will be mentioned in passing, particularly in the footnotes⁵. I shall thus use my examination of Naveros to add to the material given by Nuchelmans, and to explore further the impact of Aquinas, Ockham and Buridan on later writers. The debate about whether words signified concepts or things was not, of course, a new one. It was already raging in the late thirteenth century, when Roger Bacon said that there was "not a moderate strife among famous men"⁶. A little later, Duns Scotus wrote of "a great altercation"⁷. Nearly everyone who wrote a commentary on the *Perihermenias* had something to say on the issue, and it was also discussed in Sentence commentaries and in Buridan's *Sophismata*. The debate had been triggered by the words of Aristotle, who had opened his *Perihermenias* (16a3) by saying that spoken words were signs of affections in the mind. As translated by Boethius the passage reads: "Sunt ergo ea quae sunt in voce earum quae sunt in anima passionum notae, et ea quae scribuntur eorum quae sunt in voce"⁸. What Aristotle himself had intended to assert can be ignored here⁹, for the later debate began not just from

Boethius' Latin, but from a particular interpretation of it. Notae were taken to be signa, passionēs were taken to be concepts¹⁰; and ea quae sunt in voce were taken to be primarily such substantive nouns as 'human being' and 'animal'. Those words which themselves stand for signs were excluded for the obvious reason that, at least in the case of mental signs, the referents must be concepts¹¹. In his analysis of the passage in question¹², Naveros argued that because nothing is called a sign of something unless it is representative or significative of it, Aristotle intended to assert that spoken words do signify concepts. Moreover, because Aristotle went on to state that spoken words were not the same for all men, Aristotle had meant to assert that this signification was ad placitum, i.e. conventional. Naveros strengthened the claim by adding the word *proprie*: the signification is not merely conventional, but conventional in the strictest sense. On the face of it, Naveros came down very strongly on one side of the debate. However, as we shall shortly see, this did not involve him in any denial that words also signified things. Indeed, the very theory of signification committed him to the assertion of a word-thing relationship." (pp. 189-190)

(...)

" Conclusion.

I would like to conclude by making three brief observations. First, any modern attempt to construe the thesis that spoken words signify concepts as a theory of meaning involves a simple misunderstanding of the verb *significare*. Second, although Naveros, like others, asserted that spoken words did signify concepts, he had no intention of overlooking the referential function of words. Nor did those who asserted that spoken words signified things have any intention of overlooking the place of concepts in the significative process. In many ways the dispute between the two groups was verbal rather than real. Third, when one considers the influence of the great medieval philosophers

on the discussions found in the late fifteenth and early sixteenth centuries, it seems that Duns Scotus held pride of place, followed closely by Buridan. Ockham's conclusions were influential, though his arguments were not; and the arguments presented by Aquinas in his *Perihermenias* commentary had little effect." (p. 214)

(1) Nuchelmans (Amsterdam 1980: 16-24).

(2) For some details about Naveros' life and works, see V. Munoz Delgado ("La lógica en la Univesidad de Alcalá durante la primera mitad del Siglo XVI", *Salamanticensis* 15, 1968:193-200).

(3) For some details about Prado, see Munoz Delgado, *op.cit.*, pp. 184-187.

(4) For details of these and other authors, see Lohr ("Renaissance Latin Aristotle Commentaries", 1974-1982).

(5) On the other hand, there are many *Perihermenias* commentaries I have looked at and shall not make any further reference to. Details of most of the works I exclude are to be found in Risse (*Bibliographia Logica. Verzeichnis der Druckschriften zur Logik mit Angabe ihrer Fundorte. I. 1472-1800*, Hildesheim 1965).

24. ———. 1988. "The Historical Origins of John Poinsett's Treatise on Signs." *Semiotica* no. 69:129-147.
"Introduction.

In 1631-1632 John Poinsett (otherwise known as John of St. Thomas) published his *Ars Logica* at Alcalá. From this massive work John Deely has extracted all those parts relating to the theory of signs, and has given them the general heading of *Tractatus de Signis* (*Treatise on Signs*), though it should be noted that the *Treatise on Signs* (*) proper consists of just three Questions related to Aristotle's *Perihermenias*. The project is a valuable one, for Poinsett was an interesting writer in his own right who frequently had original observations to make. Deely's contribution, so far as the edition and translation are concerned, is superb; and the book itself is a splendid example of the printer's art.

However, I have some very grave reservations about Deely's interpretation of Poinso't's work, and it is these reservations that I intend to discuss here. Others (notably Sebeok, "A signifying man. Review of Tractatus de Signis" *The New York Time Book Review*, March 30, 1986, pp. 14-15) have already sung the praises of Deely and Poinso't; and as one of the few philosophers who has actually read some of the sixteenth-century authors to whom Poinso't was indebted, I feel it incumbent on me to point out that there is another side to the coin. However, I do not intend my remarks to detract in any way from the achievement represented by Deely's version of the *Treatise on Signs*.

I shall first discuss Deely's attitude toward the historical interpretation of Poinso't and how it differs from my own. In so doing, I shall show that there was a tradition of placing the discussion of signs in a *Perihermenias* commentary. Second, I shall discuss the topic of relations, since Deely claims that the 'revolutionary' nature of Poinso't's doctrine of signs stems from his classification of relations. I shall remark that a very similar classification of relations is found in at least one of Poinso't's sources, namely Domingo de Soto (1494-1560). Third, I shall discuss the details of the theory of signs as described by some early sixteenth-century writers, and I shall show that the general lines of Poinso't's classification are due to Domingo de Soto. Finally, I shall make some remarks about other aspects of the translation and editorial material which seem to need further comment." (p. 129)

* John N. Deely (trans. and ed.), with Ralph Austin Powell, *Tractatus de Signis. The Semiotic of John Poinso't*, Berkeley: University of California Press, 1985.

25. ———. 1988. "Traditional Logic." In *The Cambridge History of Renaissance Philosophy*, edited by Schmitt, Charles B. and Skinner, Quentin, 143-172. Cambridge: Cambridge University Press.

"There were several waves of commentaries during the period after 1350.

Some of these were on individual books from the *Organon*, such as the commentary on the *Prior Analytics* by Marsilius of Inghen, which was published in Venice in 1516, and the commentary on the *Posterior Analytics* by Paul of Venice, which had been published seven times by 1518, nearly always in Venice. (4) In the fifteenth century we find important commentaries on both the *Logica vetus* and the *Logica nova* being produced by the Thomists at the Bursa Montis in Cologne (5) and by Johannes Versor in Paris.

However,

such commentaries were soon to disappear. Bartholomaeus Arnoldi de Usingen, who taught at Erfurt, seems to be one of the last to write specifically on the *Logica vetus* (1514) and the *Logica nova* (1507, 1516) as such. Of the earlier medieval commentaries the most popular was that on the *Logica vetus* by Walter Burley, which had thirteen printed editions, the last in Venice in 1541. The most prevalent form of commentary from the late fifteenth century on dealt with the entire *Organon* in one book. The first commentaries of this sort, such as those by George of Brussels and Petrus Tartaretus (both first published at Paris in 1493) were in a traditional style, but almost at once the influence of humanism became apparent. In Paris Jacques Lefevre d'Etaples produced his *Paraphrases et annotationes in libros logicorum* (eleven editions up to 1588) and in Germany in 1516-17 Johannes Eck published a complete commentary based on the new translations of Johannes Argyropulos but using the work of logicians in the medieval tradition. (6) Eck's work was produced for the University of Ingolstadt, and was prescribed by the statutes of 1519-20; but it is not clear how much it was actually used." (pp. 143-144)

(...)

"At the end of the sixteenth century we find both new texts and new emphases in the curricula of various institutions. There are three kinds of text which are particularly noteworthy. First, there are commentaries on specific works by Aristotle, such as Jacopo Zabarella's commentary on the *Posterior Analytics* which , along with his other works, was to be extremely popular in the first part of the seventeenth century, especially in Germany.

Second, there is the extensive commentary on selected parts of the whole *Organon*, most notably the *Commentarii in universam dialecticam Aristotelis* by the Coimbra Jesuit Sebastian Couto , which first appeared in 1606. It has been described as presenting a fusion of two late sixteenth-century approaches to Aristotle, the philosophical one of Zabarella and the philological one of Pace. (13) Third, there are numerous shorter works which offer a complete introduction to the logic of Aristotle, such as those by Toletus and Fonseca (see below, p. 163)." (pp. 145-146) (...)

By about 1530 most of this activity had come to an abrupt end. New commentaries on medieval authors disappeared except in Spain, where Thomas de Mercado's commentary on Peter of Spain was first published as late as 1571 .

Treatises on individual topics ceased to be written, with an occasional exception such as Antonius Kesler's treatise on consequences of 1623. (56) The publication both of the newer works in the medieval tradition and of the older ones virtually ceased . (57) At the same time the university curricula changed. Authors such as Rudolph Agricola and Johannes Caesarius were required in place of the medieval texts, (58) and Philipp Melanchthon's simplified summary of Aristotelian logic swept Germany.

Later, Petrus Ramus was to enjoy a runaway success. Yet the most important and influential texts of the last years of the sixteenth century were by no means simplified humanist manuals, and they contained not only considerably more

sylogistic logic than Lorenzo Valla, Agricola or Ramus had thought appropriate, but also treatments of such medieval doctrines as supposition theory." (pp. 152-153)

(4) For general information on both manuscripts and printed editions of Aristotle commentaries, see Lohr [Latin Aristotle Commentaries: II. Renaissance Authors (Florence 1988)].

(5) For some information about the Cologne commentators, see Lohr, 'Authors: Johannes de Kanthi - Myngodus ', *Traditio*, 27 : 251-351 1971, pp. 310-12. A 'bursa' was a kind of college in which students lived and were taught.

(6) The full title of Aristotle 1516-17 is instructive:

Dialectica: cum quinque vocibus Porphyrii Phenicis: Argyropilo traductore: a Joanne Eckio Theologo facili explanatione declarata: adnotationibus compendiariis illustrata: ac scholastico exercitatio explicata: videbis o Lector priscam Dialecticam restitutam: ac Neotericorum subtilitati feliciter copulatam. For discussion of Eck, see Seifert, *Logik zwischen Scholastik und Humanismus: Das Kommentarwerke Johann Ecks*, Munich 1978.

(13) Schmitt, *Studies in Renaissance Philosophy and Science*, London 1981, § vi, p. 170.

(56) See Ashworth, 'Andreas Kesler and the later theory of consequences', *Notre Dame Journal of Formal Logic*, 14: 205-14 1973 for a discussion.

(57) For more details see *Cambridge History of Later Medieval Philosophy*, 1982, p. 790 (Ashworth).

References

26. ———. 1988. "Changes in Logic Textbooks from 1500 to 1650: The New Aristotelianism." In *Aristotelismus Und Renaissance. In Memoriam Charles B. Schmitt*, edited by Kessler, Eckhard, Lohr, Charles H. and Sparn, Walter, 75-87. Wiesbaden: Otto Harrassowitz.

"My own interest is in the fate of specifically medieval logical doctrines and the process whereby they were either lost from view or were transmuted into a subordinate part of

Aristotelian logic. In order to pursue this theme, I have chosen six textbooks which were used at various times and places during the period 1500 - 1650; and I intend to consider their contents in some detail so as to demonstrate the interaction between medieval logic and the other three streams I isolated above. It must, of course, be pointed out that there were many other textbooks which did not contain any medieval logic, and hence were not suitable for my purposes. The works I have chosen are as follows: (I) the *Libelli Sophistarum*, loose collections of late fourteenth-century material which were used at Oxford and Cambridge in the first decades of the sixteenth century (11), (II) the *Logica parva* (12) of Paul of Venice, probably written 1395 - 1396 (13), printed many times up to 1614 (or beyond), and used as a textbook particularly in Italy. Both the *Libelli Sophistarum* and the *Logica parva* show how well-embedded medieval logic could seem, even in the early sixteenth century. (III) the *Summulae* of Domingo de Soto, a Spaniard who studied at Paris (14). The first edition appeared in Burgos in 1529, and the much-altered second edition in Salamanca in 1539 (15). Soto's work is illustrative both of early sixteenth-century developments within the medieval tradition; and, in its second edition, of the impact of rhetorical humanism. (IV) the *Institutionum Dialecticarum libri octo* of Pedro da Fonseca (16). It was first published in Lisbon in 1564, and the last of its fifty-three editions appeared in Lyon in 1625 (17). This work typifies the solid, late-scholastic textbook, full of detail and heavily influenced by Aristotelian humanism. (V) the *Logicae Artis Compendium* of Robert Sanderson, dating from 1615, and used as a textbook in Oxford well into the eighteenth century (18). In this work, all the four streams are mingled. (VI) the *Logica Hamburgensis* of Joachim Jungius, first published as a whole in 1638 (19), though Books 1 to 3 had appeared in 1635 (20). This too is a solid, detailed textbook, but it brings us to the end of the road so

far as the medieval contribution to logic is concerned." (pp. 76-78)

(11) For full discussion, see E. J. Ashworth, 'The "Libelli Sophistarum" and the Use of Medieval Logic Texts at Oxford and Cambridge in the Early Sixteenth Century', *Vivarium* 17 (1979), pp. 134 - 158.

(12) This work has been published in facsimile: Paulus Venetus, *Logica* (Venice 1472; Hildesheim, New York: Georg Olms, 1970). For a translation with notes, see A. R. Perreiah, *Paulus Venetus: Logica Parva* (Munich, Wien: Philosophia Verlag, 1984).

(13) See F. Bottin, 'Logica e filosofia naturale nelle opere di Paolo Veneto' in *Scienza e filosofia all'Universita' di Padova nel Quattrocento*, edited by A. Poppi (Contributi alla Storia dell'Universita. di Padova 15. Trieste: Lint, 1983), p. 89 - 91.

(14) For a discussion of Soto's logical work, see V. Munoz Delgado, *Logica formal y filosofia en Domingo de Soto (1494 - 1560)* (Madrid: Edita Revista "Estudios", 1964).

(15) For a discussion of the various editions, see A. d'Ors, 'Las Summulae de Domingo de Soto', *Anuario Filosofico. Universidad de Navarra* 16 (1983), pp. 211 - 213.

(16) There is a modern edition: Pedro da Fonseca, *Instituições Dialecticas Institutionum Dialecticarum libri octo*, 2 volumes, edited and translated by J. Ferreira Gomes (Coimbra: Universidade de Coimbra, 1964).

(17) See Ferreira Gomes, editor's introduction to Fonseca, see fn. 16 above, I, pp. xxxv-xlvi.

(18) For a facsimile of the 1618 edition, see Robert Sanderson, *Logicae Artis Compendium*, with an introduction by E. J. Ashworth (Bologna: Editrice CLUEB, 1985).

(19) For a modern edition, see R. W. Meyer, editor, *Joachimi Jungii Logica Hamburgensis* (Hamburg: J. J. Augustin, 1957).

(20) See W. Risse, *Joachimi Jungii Logicae Hamburgensis Additamenta* (Göttingen: Vandenhoeck & Ruprecht, 1977,

p. 7.

27. ———. 1988. "Oxford." In *Ueberweg, Friedrich, Grundriss Der Geschichte Der Philosophie. Vollig Neubearbeitete Ausgabe. Die Philosophie Des 17. Jahrhunderts. Band 3.1. England*, edited by Schobinger, Jean-Pierre, 6-9; 26-27. Basel: Schwabe & Co.

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ARTICLES

1. Ashworth, Earline Jennifer. 1989. "La Sémantique Du Xiv Siècle Vue À Travers Cinq Traités Oxoniens Sur Les 'Obligationes'." *Cahiers d'Épistémologie*.
2. ———. 1989. "Boethius on Topics, Conditionals and Argument-Forms." *History and Philosophy of Logic* no. 10:213-225.
"Eleonore Stump's splendid translation of *Boethius's In Ciceronis Topica* (Ithaca and London: Cornell University Press, 1988) is a very welcome companion to her earlier translation of Boethius's *De topicis differentiis* (Ithaca and London: Cornell University Press, 1978). Together the two

volumes provide us with a hitherto unequalled opportunity to come to grips with the logical work of an author whose influence on medieval and Renaissance developments in this field was surpassed only by Aristotle himself. Indeed, it was only because of Boethius, his translations and commentaries, that Aristotle was first transmitted to the Latin speaking West. The importance of Boethius's work on the Topics is not purely historical, for it offers us a valuable insight into a type of logic which is aimed not at the production of formal languages or the examination of valid inference forms, but at ways to produce belief in the context of debate and against a background of straightforwardly metaphysical doctrines.

In this essay review I shall first make some general remarks about the nature of Topics-logic, with particular reference to *In Ciceronis Topica*. I shall then explore just one Topic, that of incompatibles, which is a particularly interesting Topic for several reasons. First, Boethius's attempt to define incompatibles shows the limitations of any formal approach to the material in hand. Second, Boethius's use of the Topic casts considerable light on his view of conditionals and their basis in metaphysical features of the world. Third, the examination of these issues helps explain Boethius's interpretation of certain key argument forms and their relation to Stoic logic. Finally, I shall make some remarks about Stump's translation and notes." (p. 213)

3. ———. 1990. "Paul of Venice on Obligations. The Sources for Both the *Logica Magna* and the *Logica Parva* Versions." In *Knowledge and the Sciences in Medieval Philosophy. Vol. Ii*, edited by Knuuttila, Simo, Työrinoja, Reijo and Ebbesen, Sten, 407-415. Helsinki: Yliopistopaino.

Proceedings of the Eighth International Congress of Medieval Philosophy, Helsinki, 24-29 August 1987.

"Treatises on obligations formed part of the specifically medieval contribution to logic along with treatises on supposition theory, consequences, and insolubles.(1) Their

history may go back as far as the late twelfth century; but the most important early treatise was the *Tractatus de Obligationibus* of Walter Burley, which dates from around 1302. This work presented the theory in a fully developed form, and set the stage for all subsequent discussion. For my purposes, the next leading figure was Roger Swyneshed, who probably wrote between 1330 and 1335, and who held controversial views about the treatment of conjunctions and disjunctions. His doctrines were presented in a favourable light by Martinus Anglicus, (2) Robert Fland and Richard Lavenham, (3) but were otherwise generally rejected. Richard Billingham, who became a fellow of Merton College, Oxford, in 1344, wrote a text on obligations which formed part of the *Logica Oxoniensis*, a loose collection of logic treatises which was popular in the fifteenth century, and which was printed in England as late as 1530. (4) Another Englishman, Ralph Strode, who was a fellow of Merton 1359-1360, wrote a treatise which was especially popular in Italy. (5) At Paris, we find Albert of Saxony, whose discussion of obligations in his *Perutilis Logica* (6) was particularly influential for the 1360 treatise of the Dutchman William Buser (7). In turn, Buser's treatise was heavily used in the treatise by his pupil, Marsilius of Inghen. (8) Two Italian authors must also be mentioned. Peter of Candia, later Pope Alexander V, wrote an obligations treatise perhaps between 1370 and 1380. (9) Peter of Mantua, writing between 1384 and 1392, included a long section on obligations in his *Logica* (10) This is the background against which Paul of Venice must be considered.

Four independent logic treatises have been attributed to Paul: the *Logica Parva* (11) the *Logica Magna* (12) the *Quadratura*; and the *Sophismata Aurea*. The first two are general texts, each of which contains a section on obligations. There is also some relevant material in the *Quadratura*, but I shall not consider it here. (13) Francesco

Bottin has given reasons for dating the *Logica Parva* 1395-96 and for dating the *Logica Magna* 1397-98. (14) However, there is some controversy about the relationship between these works; and it has even been asked whether Paul was the author of both. (15) In this paper I shall first give a brief survey of the sources for the *Logica Magna* treatise on obligations; and I shall then argue that, in light of what I have discovered, there is good reason to attribute both the *Logica Magna* and the *Logica Parva* tracts on obligations to the same author." (pp. 407-409)

(...)

"To sum up: the pattern of sources for the *Logica Parva*'s treatment of obligations is exactly the same as the pattern of sources for the *Logica Magna*'s treatment. We find Albert of Saxony, Buser, the *Logica Oxoniensis*, Strode and Peter of Candia. The rules given are generally standard rules, but their organization is idiosyncratic, and common to both the *Logica Magna* and the *Logica Parva*. The sophisms in the *Logica Parva* are nearly all found in the *Logica Magna*. Given these facts, I would be astounded to discover that the same man had not compiled both treatises. Whether similar conclusions can be drawn for other parts of the *Logica Parva* remains to be seen." (p. 415)

(1) For general discussion of obligations and further references, see E. Stump, "Obligations: A. From the beginning to the early fourteenth century" in *The Cambridge History of Later Medieval Philosophy*, edited by N. Kretzmann, A. Kenny and J. Pinborg (Cambridge etc.: Cambridge University Press, 1982), pp. 315-334; and P.V. Spade, 'Obligations: B. Developments in the fourteenth century', *ibid.*, pp. 335-341.

(2) See E.J. Ashworth, 'English Obligationes Texts after Roger Swyneshed: The Tracts beginning "Obligatio est quaedam ars"' in *The Rise of British Logic*, edited by P. Osmund Lewry, O.P. (Toronto: Pontifical Institute of Mediaeval Studies, 1985), pp.311-312.

- (3) See Spade, *op.cit.*, pp.334-338. There are some striking similarities between Martinus Anglicus and Robert Fland.
- (4) For Billingham's *Ars Obligatoria* and the subsequent manuscript tradition, see Ashworth, 'English Obligationes Texts'. For the *Logica Oxoniensis*, see L.M. de Rijk, 'Logica Oxoniensis: An Attempt to Reconstruct a Fifteenth Century Oxford Manual of Logic', *Medioevo* 3 (1977), pp.121-164; and E.J. Ashworth, 'The "Libelli Sophistarum" and the Use of Medieval Logic Texts at Oxford and Cambridge in the Early Sixteenth Century', *Vivarium* 17 (1979), pp.134-158.
- (5) I am presently preparing an edition of this text in conjunction with A. Maierù's edition of the rest of Strode's *Logica*. References in this paper are to Ralph Strode, *Obligationes*, in *Consequentie Strodi* etc. (Venetiis, 1517), fol. 78ra - fol. 93rb.
- (6) Albert of Saxony, *Perutilis Logica* (Venice, 1522; Hildesheim, New York: Georg Olms, 1974), fol. 46va-fol. 51vb.
- (7) I have used Oxford, Bodleian Library MS Canon. Class.Lat. 278, fol. 72ra-fol. 78rb. For discussion of Buser, see C.H. Kneepkens, "The Mysterious Buser Again: William Buser of Heusden and the Obligationes Tract Ob Rogatum" in *English Logic in Italy in the 14th and 15th Centuries*, edited by A. Maierù (Napoli: Bibliopolis, 1982), pp.147-166.
- (8) I have used Cracow, Biblioteka Jagiellonska MS 2602, fol. 70r - 101r.
- (9) I have used Oxford, Bodleian Library MS Canon.Class.Lat. 278, fol. 65ra - fol. 69rb. For the date, I have used Green-Pedersen's conjecture about the date of Peter of Candia's *Consequentiae*: see N.J. Green-Pedersen, 'Early British Treatises on Consequences' in *The Rise of British Logic*, p.307.
- (10) I have used Peter of Mantua, *Logica* (Venice, 1492), sig. G iira -sig. G viiivb. For the dating of his logical works, see

T.E. James, 'Peter Alboini of Mantua: Philosopher Humanist', *Journal of the History of Philosophy* 12 (1974), pp.161-170.

(11) Paulus Venetus, *Logica* (Venice, 1472; Hildesheim, New York: Georg Olms, 1970). For a translation of this edition, see A.R. Perreiah, *Paulus Venetus. Logica Parva* (München, Wien: Philosophia Verlag, 1984). I shall use the citation LP, with page references to the 1472 edition. These references are included in Perreiah's translation.

(12) Paulus Venetus, *Logica Magna* (Venetiis, 1499); E.J. Ashworth, editor and translator, *Paul of Venice. Logica Magna. Part II. Fascicule 8. Tractatus de Obligationibus* (printed for the British Academy by the Oxford University Press, 1988). I shall use the citation LM, with folio references to the 1499 edition. These references are included in my edition.

(13) Paulus Venetus, *Quadratura* (Venetiis, 1493): see *Dubium secundum*, cap. 11; *Dubium tertium*, cap. 6, cap. 23, cap. 29.

(14) F. Bottin, 'Logica e filosofia naturale nelle opere di Paolo Veneto' in *Scienza e Filosofia all'Università di Padova nel Quattrocento*, edited by A. Poppi (Contributi alla Storia dell'Università di Padova 15. Trieste: Lint, 1983), pp.87-93.

(15) See F. del Punta and M.M. Adams, edition and translation, Paul of Venice, *Logica Magna. Part II. Fascicule 6. Tractatus de Veritate et Falsitate Propositionis et Tractatus de Significato Propositionis* (Published for the British Academy by the Oxford University Press, 1978), p.xiii: '...while the common authorship of the *Logica Magna*, the *Logica Parva*, the *Sophismata*, and the *Quadratura* is highly probable, it has not been proved with certainty.... We have found that the teachings of the *Logica Parva* are in any event often inconsistent with those of the *Logica Magna*.' Perreiah, op.cit., pp. 327-343, gives the

strong impression that he doubts common authorship of the *Logica Parva* and the *Logica Magna*.

4. ———. 1990. "The Doctrine of Signs in Some Early Sixteenth-Century Spanish Logicians." In *Estudios De Historia De La Lógica. Actas Del Ii Simposio De Historia De La Lógica, Universidad De Navarra, Pamplona, 25-27 De Mayo De 1987*, edited by Angelelli, Ignacio and D'Ors, Angel, 13-38. Pamplona: Ediciones Eunate.

"In this paper I intend to discuss the doctrine of signs as it was presented by six Spanish logicians from the first half of the sixteenth century, all of whom except Naveros studied or taught at the University of Paris. I shall consider the *Termini* of Gaspar Lax, whose second edition appeared in 1512; the *Termini* of Juan Dolz, which appeared about 1510; the *Dialecticae introductiones* of Juan de Celaya, published as early as 1511; the *Summulae* of Domingo de Soto, which appeared in 1529 and were heavily revised for their second edition in 1539; the posthumous *Termini perutiles* of Fernando de Enzinas, published in 1533; and the *Praeparatio dialectica* of Jacobo de Naveros, published in 1542. I shall, of course, be mentioning various other authors, particularly from Paris, both to set the stage for the work of the Spanish logicians, and in order to trace subsequent developments.

There are three reasons why I have chosen to focus on the doctrine of signs. First, there is the link with the doctrine of signification. For the early sixteenth-century logician, at least for those writing in the medieval tradition, to signify was to be a sign; and unless we understand how the notion of sign was handled we will be unable to understand such crucial debates as that concerning the question whether words signify concepts or things (1). In particular, we will be likely to fall into the modern trap of translating the word '*significatio*' by the word 'meaning', and thereby misreading large portions of medieval and post-medieval logic and philosophy of language (2). Second, it is in the late fifteenth

and early sixteenth centuries that logicians broke away from the medieval trend of discussing signification only in relation to *voces* or utterances (3), and attempted to present the linguistic sign in a much wider framework. Third, recent attention has been focussed on the sign-theory of later authors, particularly the seventeenth-century John of St. Thomas, and I think it is important to reveal the true pioneers in this field (4)." (pp. 13-14)

(1) See E. J. Ashworth, "Jacobus Naveros (fl.ca.1533) on the Question: 'Do Spoken Words Signify Concepts or Things?', in *Logos and Pragma. Essays on the Philosophy of Language in Honour of Professor Gabriel Nuchelmans*, edited by L. M. de Rijk and H. A. G. Braakhuis, pp. 189-214 (Artistarium, Nijmegen: Ingenium Publishers, 1987); and E. J. Ashworth, "'Do Words Signify Ideas or Things?' The Scholastic Sources of Locke's Theory of Language", *Journal of the History of Philosophy* 19 (1981), pp. 299-326, reprinted as Study VII in E. J. Ashworth, *Studies in Post-Medieval Semantics* (London: Variorum Reprints, 1985).

(2) For examples of such misreading, see E. J. Ashworth, "Locke on Language", *Canadian Journal of Philosophy* 14 (1984), pp. 45-73, reprinted as Study VIII in *Studies in Post-Medieval Semantics*.

(3) Two medieval exceptions to this trend were Robert Kilwardby and Roger Bacon. For references, see below notes 31 and 32.

(4) See John N. Deely, translator and editor, with Ralph Austin Powell, *Tractatus de Signis. The Semiotic of John Poinot* (Berkeley: University of California Press, 1985). See also E. J. Ashworth, "The Historical Origins of John Poinot's 'Treatise on Signs', *Semiotica* 69 (1988), 129-147.

5. ———. 1990. "Domingo De Soto (1494-1560) and the Doctrine of Signs." In *De Ortu Grammaticae. Studies in Medieval Grammar and Linguistics Theory in Memory of Jan Pinborg*, edited by Bursill-Hall, Geoffrey L., Ebbesen,

Sten and Köerner, Konrad, 35-48. Amsterdam-Philadelphia: Benjamins.

"Doctrines of signs permeated medieval culture, being found in such diverse fields as medicine, rhetoric and theology (Maierù 1981). However, despite Augustine's important insight that words could be treated as one type of sign (Markus 1957; Jackson 1969) it seems true to say that the notion of a sign as such was not of central importance to medieval logicians. Certainly words were spoken of as being signs, but no attempt was made to place them in a wider setting. Peter of Spain in his *Summulae Logicales* had focussed on the notion of a *vox* or utterance, so that the distinction between significative and non-significative was introduced only in a linguistic context (Peter of Spain 1972:1-2) and his commentators were thus given no incentive to go beyond this context. William Ockham did give a general definition of sign in his *Summa Logicae*, but he immediately said that he did not intend to use the word 'sign' in this wider sense (William Ockham 1974:89); and his remarks were later echoed by Albert of Saxony (Albert of Saxony 1522:f.2ra). The only medieval exceptions to this trend in the field of linguistic sciences seem to have been Robert Kilwardby, who discussed signs as such in his grammatical work (Kilwardby 1975:1-7) and Roger Bacon who, when writing on logic, followed Augustine in firmly subordinating the notion of a linguistic sign to the notion of a sign in general (Roger Bacon 1978:81-84; Pinborg 1981:405). One of Jan Pinborg's many achievements was to find and publish Roger Bacon's treatise *De Signis*. Hence, it seems appropriate that in a volume devoted to Pinborg's memory, some attention should be paid to another logician, Domingo de Soto, who attempted to place linguistic signs in a wider context.

It must be recognized that Soto was not the first sixteenth century author to focus afresh on the notion of a sign. Humanism had resulted in new attention being paid to the

rhetorical concept of sign (cf. Melanchthon 1854:cols.750-751, and Melanchthon 1846:cols.704-706) and various fifteenth and sixteenth century logicians referred to the definitions of sign found in Cicero (Vorsor 1572:f.6v; Raulin 1500:sig.g 5ra) and Quintilian (Sanchez Ciruelo 1519:sig.B 5vb). Another factor which should be taken into account was the renewed interest in medieval metaphysics and theology which characterized many of the great sixteenth and seventeenth century writers. However, of the early sixteenth century writers I know only Pedro Sanchez Ciruelo paid attention to the work on signs found, for instance, in Thomas Aquinas (Sanchez Ciruelo 1519:sig.B 5vb-6ra); and it seems to have been the Jesuits of Coimbra who were responsible for bringing together the rich theological tradition of the Middle Ages with the new logical tradition (Conimbricensis 1607:11 cols.7-33). This new logical tradition, found in such authors as Tomas de Mercado (1571:f.3vb-5va), Alonso de la Vera Cruz (1572:22 A-23 A), Francisco de Toledo (1596:208 A-209 B) and Diego Mas (1621:11 7 B-10 A) stems almost entirely from Domingo de Soto. He it was who classified the subject-matter, and set up the framework within which his successors would discuss the topic of signs. (1)

The main inspiration for Soto's work was obviously the then-standard Parisian doctrine of signification, which was directly derived from Peter of Ailly's *Conceptus et Insolubilia*. In this work, Peter of Ailly (c. 1350-1420) had, without elaboration, remarked that "a term is a sign" (1980:16; cf. Stanyol 1504:sig.a 3r, Sanchez Ciruelo 1519:sig.B 5va, Enzinas 1533:sig.b 3rb); that "to 'signify' is the same as to be a sign of something" (17; cf. Buridan 1977:22) and that something can be a sign in two ways (17). It can itself be an act of knowing a thing, or it can lead to an act of knowing. In the second case, there is a further division to be made, since the act of knowing can be either primary or secondary (18). He also gave a definition of

‘signify’ which reappeared in text after text “... to ‘signify’ is to represent (a) something, or (b) some things or (c) somehow, to a cognitive power by vitally changing it” (16). In the hands of various early sixteenth century logicians at Paris, Peter’s remarks had been elaborated into a doctrine which Soto found profoundly misleading; and which he therefore set out to rework completely.” (pp. 35-36) (...)

"Once Soto had completed his general classification of signs, he came up against another problem, this time specifically to do with linguistic signs. According to Aristotle, spoken words were signs of concepts; yet there seemed to be an obvious sense in which spoken words were signs not of concepts but of actual things. (7) In order to deal with this issue, Soto introduced a distinction. When I utter the word ‘homo’ I signify men in the sense of making them known (*facere cognoscere*), and I definitely do not make known my own concept of man. On the other hand, I do express (*exprimer e*) the fact that I have such a concept, and I do so in order to cause my hearers to form similar concepts (Soto 1529:f.6ra). *Facere cognoscere* and *exprimere* are two types of signification, the second being a less general kind which pertains only to written and spoken words (f.6ra). In the later edition of his work Soto put the same point in terms of a distinction between two kinds of instrumental sign, one of which leads the cognitive power to form a concept of a thing, and the other of which expresses the presence of a concept. Thus a vocal sign can represent both a thing and a concept, but in different ways (Soto 1554:f.3rb-va). The whole matter was put more generally by the later author, Francisco de Toledo, who introduced the notion of manifestive and suppositive signs. A manifestive sign, he wrote, is one which leads to the knowledge of another thing. Thus a sound can be a manifestive sign that reading is to occur. A sign which is both manifestive and suppositive is one which not only manifests another thing, but can be used

in place of it. Thus a Viceroy both manifests or makes known the king and acts in his place. Utterances are signs of both kinds. On the one hand, they manifest concepts; on the other hand they both manifest and stand for actual things (Toledo 1596:209 A). Clearly Toledo did not find it awkward that a linguistic sign could perform several significative functions at once. Indeed, he had already pointed out that all utterances signify their utterer in the same way that smoke signifies fire, i.e. as an effect does its cause, so that one and the same sign can have both natural and conventional signification (Toledo 1596:209 A).

These last remarks point to one of the main strengths of the doctrine of signs developed by Domingo de Soto and his immediate successors. While many of the distinctions made seem to be ordinary, common-sense distinctions without much philosophical novelty, they enable one to place the linguistic sign in the context of signs in general. As a result one gets a much better apprehension of the various uses which can be made of a single utterance. At the same time, it is made perfectly evident that the doctrine of signification developed by medieval and post-medieval logicians was not, and should not be confused with, a theory of meaning in the contemporary sense. To say that words signify things is to say that they make things known; to say that words signify ideas is to say that they express ideas; and we are not given any license to identify the meaning of words with either type of significate. (8)" (pp. 44-45)

(1) There is a curious tendency among linguists to attribute Domingo de Soto's achievements to the much later John of St. Thomas (1589-1644). For instance Arens (1984:509) refers to John St. Thomas's "remarkable faculty for systematization" in relation to a series of distinctions about signs taken directly from Domingo de Soto; and Deely (1983:116) calls him "the earliest systematizer of the doctrine of signs." In fact John of St. Thomas's discussion of signs (John of St. Thomas 1930:9A-10A, 646A-722A) draws

very heavily not only on Soto but also on the lengthy and more ontologically oriented discussion in the Coimbra commentary. He comes at the end of a tradition, not at the beginning.

(7) For a survey of medieval discussion of the question whether words signify ideas or things, see Ashworth (1981); and for a survey of post-medieval discussion, see Ashworth (1987).

(8) For a fuller discussion of this issue see Ashworth (1984).
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6. ———. 1991. "Signification and Modes of Signifying in Thirteenth-Century Logic: A Preface to Aquinas on Analogy." *Medieval Philosophy and Theology* no. 1:39-67. "My study of Aquinas in the context of thirteenth-century logic has two parts. In the first part, which constitutes the present essay, I shall explore the general theory of language that lies behind theories of equivocation and analogy. I shall explain such key concepts as imposition, signification, and *res significata*, and I shall pay particular attention to the notion of *modi significandi*. In the second part, to be published separately, (*) I shall survey thirteenth-century accounts of equivocation from Peter of Spain to John Duns Scotus. I shall show how the discussion of analogy came to be subsumed under discussions of equivocation and how logicians developed a threefold classification of analogy that has a close relation to Aquinas's own classification in his *Sentences*-commentary.

In embarking on this study, I am guided by the belief that to understand Aquinas fully we need to know how his words would have been understood by his contemporaries. We need to know which phrases had a standard technical usage and what distinctions were routinely made. I do not intend to argue that we will always find just one correct interpretation, nor do I want to claim that Aquinas was never innovative in his use of material taken from logicians. I am convinced, however, that a careful reading of the logicians will not only show us which interpretations of Aquinas's philosophy of language can be ruled out as fanciful reconstructions, but will also shed light on much that is currently obscure to the twentieth-century reader."

(pp. 40-41)

(...)

"Conclusion.

What I have examined in this paper is a theory of language that tends to take words as units, endowed both with their signification and their *modi significandi* before they enter sentences and independently of speaker intention on any given occasion, (123) This attitude was reinforced by Priscian's claim that the noun has priority over other parts of speech, which led logicians to argue that the noun received its imposition first. (124) One might think that equivocal and analogical terms are precisely those whose functioning is best explained through context and use, but although Roger Bacon at least did recognize that any term could be used equivocally, (125) there was a tendency to speak as if equivocal and analogical terms formed special classes that could be identified in advance of use. To the extent that Aquinas's doctrine of analogy is embedded in such a general theory, one may fear that it will share the theory's defects." (p. 67)

(*) See: *Analogy and Equivocation in Thirteenth-Century Logic. Aquinas in Context*.

(123) For some references to authors who paid more attention to speaker intention, see Irène Rosier, "Signes et sacrements: Thomas d'Aquin et la grammaire speculative," *Revue des sciences philosophiques et théologiques* 74 (1990): 392-436.

(124) Priscian, *Institutionum grammaticarum libri XVIII*, in *Grammatici Latini*, edited by Heinrich Keil (Leipzig: Teubner, 1855), reprint ed. (Hildesheim and New York: Georg Olms, 1981), 2:115-121. Priscian's remarks were used to show that an equivocal noun could not have a conjunctive signification, since syncategorematic terms were posterior to nouns. See CPDMA 7 [anonymous *Quaestiones super Sophisticos Elenchos*, edited by Sten Ebbesen, Copenhagen:Gad, 1977), p. 291. Compare Simon of Faversham, *In SE [Sophisticos Elenchos]* p. 68; Duns Scotus, *In SE [Sophisticos Elenchos]*, p. 13A.

(125) Karin Margareta Fredborg, Lauge Nielsen, and Jan Pinborg, "An Unedited Part of Roger Bacon's *Opus maius: De signis*," *Traditio* 34 (1978): 109-110.

7. ———. 1991. "Equivocation and Analogy in Fourteenth-Century Logic: Ockham, Burley and Buridan." In *Historia Philosophiae Medii Aevi. Studien Zur Geschichte Der Philosophie Des Mittelalters. Festschrift Für Kurt Flasch Zu Seinem 60. Geburtstag. Vol. I*, edited by Mojsisch, Burkhard and Pluta, Olaf, 23-43. Amsterdam, Philadelphia: B. R. Grüner.

"In this paper I shall explore the notions of equivocation and analogy as they were handled by William of Ockham in his logical writings; (1) and I shall compare his position with those adopted by Walter Burley and John Buridan.(2) I realize that Ockham's views on these issues have already been discussed in print, (3) and I shall not be able to point to hitherto unnoticed material in his works. My main intention is to place his views in perspective, by locating them in their historical context. This project is one which has been touched on only indirectly by scholars, (4) yet it is crucial to the proper understanding both of Ockham himself and of later developments in the theory of analogy.

My study of Ockham is part of a series in which I intend to explore the notions of equivocation and analogy as they were handled by logicians from the mid-thirteenth to the end of the sixteenth century. (5) I became interested in this issue when I noticed that virtually the only logician ever referred to in discussions of Aquinas's theory of analogy is Cajetan, despite the fact that he wrote over two centuries later, and had a rather different philosophical agenda. In fact, there are a number of striking dissimilarities between logicians contemporary with Aquinas and such sixteenth-century logicians as Domingo de Soto. Some of these are of minor importance. For instance, sixteenth-century logicians had access to more of the Greek commentators on Aristotle's *Categories*, and they tended to discuss analogy in

the context of commentary on the *Categories* rather than in the context of commentary on the *Sophistici Elenchi*. Others affect the general approach: here I have in mind the different theories of signification which were predominant in the two periods, and the more-or-less complete abandonment of the grammatical doctrines of *modi significandi*. Yet others are crucial to the details. In the thirteenth century, the analogy of attribution was the important kind, and the analogy of proportionality was barely mentioned. The reverse is true after Cajetan. In the thirteenth century, the key notion was that of signification *per prius et posterius*, and the implications of this were spelled out partly in terms of concepts (whether one or more), but especially in terms of common natures. In the sixteenth century the focus was on concepts, whether one imprecise concept matched with more than one precise concept, or one formal concept matched with more than one objective concept. In addition, sixteenth-century logicians worried about the differences between intrinsic and extrinsic denomination, not an issue which had concerned late thirteenth-century logicians.

The fourteenth century had two big contributions to make to the changes in doctrine that I have just outlined. First, John Duns Scotus's arguments about the univocity of being seem to have persuaded logicians that it makes sense to postulate just one concept of being, even if one goes on to reject the claim that *<ens>* is a univocal term. Second, Ockham and his followers diverted attention from common natures, which they rejected, to words and concepts. Sixteenth-century discussions of analogy have to be understood in terms of a reaction to these fourteenth-century developments, and not just in terms of a reaction to the writings of Thomas Aquinas. I shall leave the elucidation of Scotus and his influence to others; but it must be remembered that in concentrating on Ockham and the logicians I am telling only part of the story." (pp. 23-25)

(...)

"Conclusion.

In this brief paper I have not been able to address the issue of how Ockham handled religious language (85) or the issue of how he handled the notion of ens. (86) Nor have I been able to pursue Burley's theory of analogy in the depth and detail which it clearly deserves. However, I have shown the place analogy occupies in relation to equivocation in the logic of both Ockham and Buridan - and a very modest place it is." (p. 43)

(1) William of Ockham, *Summa Logicae*, edited by P.Boehner, G.Gál, S.Brown, Opera Philosophica I (St.Bonaventure, N.Y.: St.Bonaventure University, 1974); *Expositio in librum Praedicamentorum Aristotelis*, edited by G. Gal in Opera Philosophica II (St.Bonaventure, N.Y.: St.Bonaventure University, 1978); *Expositio super libros Elenchorum*, edited by F. del Punta, Opera Philosophica III (St.Bonaventure, N.Y.: St.Bonaventure University, 1979). I shall also refer to the following theological writings: *Scriptum in librum Primum Sententiarum Ordinatio*. *Distinctiones II-III*, edited by S. Brown with G.Gál, Opera Theologica II (St.Bonaventure, N.Y.: St.Bonaventure University, 1970); *Quaestiones in librum Tertium Sententiarum (Reportatio)*, edited by F.E. Kelley and G.I. Etzkorn, Opera Theologica VI (St.Bonaventure, N.Y.: St. Bonaventure University, 1982); *Quodlibeta Septem*, edited by J.C. Wey, Opera Theologica IX (St. Bonaventure, N.Y.: St.Bonaventure University, 1980).

(2) Much research remains to be done on both Burley and Buridan. I shall draw most of my material relating to Burley from his 1337 commentary on the *Categories* in *Burlei super artem veterem Porphyrii et Aristotelis* (Venetiis, 1497). For Buridan I have used *Iohannes Buridanus. Quaestiones in Praedicamenta*, edited by J. Schneider (Munchen: Verlag der Bayerischen Akademie der Wissenschaften, 1983) and extracts from his *Summulae* in

S. Ebbesen, *The Summulae. Tractatus VII. De Fallaciis* in *The Logic of John Buridan*, edited by Jan Pinborg (Copenhagen: Museum Tusculanum, 1976), pp.139-160.

(3) The most recent and best discussion is found in M.McCord Adams, *William Ockham* (Notre Dame, Indiana: University of Notre Dame Press, 1987), Vol.II, pp.903-960, especially pp.952-960. See also G. Leff, *William of Ockham: The Metamorphosis of Scholastic Discourse* (Manchester: Manchester University Press, 1975) pp.149-164 for a detailed but very confused discussion. A much earlier work, containing some useful material, is M.C. Menges, *The Concept of Univocity Regarding the Predication of God and Creature According to William Ockham* (St.Bonaventure, New York: The Franciscan Institute, Louvain: E.Nauwelaerts, 1952).

(4) For a bibliography of works on fallacies, which of course include equivocation, and some discussion. see S.Ebbesen, *The way fallacies were treated in scholastic*, Cahiers de l'institut du moyen-age grec et latin 55 (1987), 107-134.

(5) See E. J. Ashworth, *Analogy and Equivocation in Thirteenth-Century Logic: A New Approach to Aquinas*. I am currently writing a paper on equivocation and analogy in sixteenth-century logicians. Full documentation of my claims about thirteenth and sixteenth-century logic will be found in these papers.

(85) See e.g. Quodlibet IV q. 4, Ockham, *Quodlibeta*, pp. 123-128.

(86) See e.g. Quodlibet IV q.12, Ockham, *Quodlibeta*, pp. 352-359.

8. ———. 1991. "Nulla Propositio Est Distinguenda: La Notion D' Equivocatio Chez Albert De Saxe." In *Itinéraires D'albert De Saxe. Paris-Vienne Au Xiv Siècle. Actes Du Colloque Organisé Les 19-22 Juin 1990 Dans Le Cadre Des Activités De L'ura 1085 Du Cnrs À L'occasion Du 600 Anniversaire De La Mort D'albert De Saxe*, edited by Biard, Joël, 149-160. Paris: Vrin.

"Le célèbre statut édicté à l'université de Paris le 29 décembre 1340 exige que personne ne dise qu'aucune proposition ne doit être le sujet d'une distinction — « quod nullus dicat quod nulla propositio sit distinguenda » (1). Cette interdiction est liée à la conviction qu'il y a d'importantes propositions, surtout dans la Bible, qu'on peut regarder comme fausses de *virtute sermonis*, c'est-à-dire au sens littéral des mots, tout en étant vraies d'après les intentions de leurs auteurs (2). Le statut condamne ceux qui nient tout simplement de telles propositions, au lieu de les accepter ou de faire une distinction entre leurs divers sens (3). Dans le passé, les historiens de la philosophie médiévale ont souvent soutenu que Guillaume d'Ockham était la cible de ce décret, mais Katherine Tachau et William Courtenay ont récemment attaqué cette prétention (4). Je ne reprendrai pas leur argumentation, que je trouve assez convaincante, mais je me concentrerai sur un aspect que Tachau et Courtenay n'ont pas considéré en profondeur: le lieu que les distinctions entre les divers sens d'une proposition occupait dans la logique du XIV^e siècle. Je choisis ce thème à cause de son rapport avec la pensée d'Albert de Saxe. Assez curieusement, dans sa *Perutilis logica* (5) ainsi que dans ses *Quaestiones in logicam* (6), Albert adopte une position tout à fait contraire à celle du statut. Il dit carrément qu'aucune proposition ne doit être le sujet d'une distinction: « nulla propositio est distinguenda ». En disant cela, il attaque implicitement Aristote, au moins l'Aristote des logiciens du Moyen Age (7), et en même temps il attaque explicitement « Occham et socios eius » (8). Cela peut nous surprendre, étant donné qu'en général Albert suit Ockham de très près, mais il faut reconnaître que Guillaume d'Ockham était, entre les logiciens sinon les théologiens, le défenseur prééminent des distinctions (9).

(1) Le texte du statut est donné par W. J. Courtenay et K. H. Tachau dans « Ockham, Ockhamists, and the English-

German Nations at Paris, 1339-1341 », in *History of Universities*, 2 (1982), p. 84, n. 17.

(2) Pour une discussion récente, voir W. J. Courtenay, « Force of Words and Figures of Speech: The Crisis over Virtus Sermonis in the Fourteenth Century », in *Franciscan Studies*, 44 (1984), pp. 107-128.

(3) Cf. Tachau et Courtenay, *loc. cit.*: « quod nulli (...) audeant aliquant propositionem famosam illius actoris cujus librum legunt, dicere simpliciter esse falsam, vel esse falsam de virtute sermonis, si crediderint quod actor ponendo illam habuerit verum intellectum; sed vel canceledant eam, vel sensum verum dividant a sensu falso [...] », Il faut constater que dans sa traduction des *Réfutations sophistiques*, Boèce utilise le mot « dividere » où l'on pourrait s'attendre qu'il utilise le mot « distinguere »: voir surtout I, 17-19, 175 a 31-177 a 32. dans *Aristoteles latinus*, VI, 1-3: *De sophisticis elenchis*, éd. B. G. Dod, Leiden: E. J. Brill, Brussels: Descjée de Brouwer, 1975, pp. 36-41.

(4) Voir n. 1.

(5) Albert de Saxe, *Perutilis logica*, Venise, 1522, reproduction photomécanique Hildesheim, New York: Georg Olms, 1974.

(6) Ms. Cité du Vatican, Biblioteca apostolica vaticana, Urb. Lat. 1419, fos 1ra-31vb. Pour « nulla propositio est distinguenda », voir fo 24va-vb.

(7) Voir par exemple Jean Duns Scot, *In libros Elenchorum quaestiones*, in *Opera omnia*, II, Paris: Vivès, 1891, p. 14 A : « Item, si sic esset, propositio multiplex non esset distinguenda. Consequens est falsum, ut palet per Philosophum ». Cf. S. Ebbesen, « Can Equivocation be Eliminated? » in *Studia Mediewistyczne*, 18 (1977), p. 104.

(8) P. L. fo 37vb.

9. ——. 1991. "A Thirteenth-Century Interpretation of Aristotle on Equivocation and Analogy." *Canadian Journal of Philosophy* no. Supplementary volume 17:85-101.

"This paper is a case study of how a few short lines in two of Aristotle's logical works were read in the thirteenth century. (1) I shall begin with a quick look at Aristotle's own remarks about equivocation in the *Categories* and the *Sophistical Refutations*, as they were transmitted to the West by Boethius's translations. (2) I shall continue with an analysis of the divisions of equivocation and analogy to be found in an anonymous commentary on the *Sophistical Refutations* written in Paris between 1270 and 1280. (3) I have chosen this author's work to focus on, because it offers a remarkably full account which brings together the elements found in many other logical works from the second half of the thirteenth century. In the course of my analysis I shall attempt to show the part played by four different sources: (I) the Greek commentators of late antiquity; (II) the new translations of Aristotle's *Physics* and *Metaphysics*; (III) the reception of Arabic works, particularly the commentaries of Averroes; and (4) new grammatical doctrines, notably that of *modi significandi*. At the same time, I hope to throw some light on the development of the doctrine of analogy as it was understood by late thirteenth-century logicians." pp. 85-86

(1) For full bibliographies and more information on the matters touched on here, see E.J. Ashworth, 'Signification and Modes of Signifying in Thirteenth-Century Logic: A Preface to Aquinas on Analogy,' *Medieval Philosophy and Theology* 1 (1991) 39-67; E.J. Ashworth, 'Analogy and Equivocation in Thirteenth-Century Logic: Aquinas in Context,' *Mediaeval Studies* (1992); E.J. Ashworth, 'Equivocation and Analogy in Fourteenth Century Logic: Ockham, Burley and Buridan,' *Historia Philosophiae Medii Aevi. Studien Zur Geschichte der Philosophie des Mittelalters*, B. Mojsisch and O. Pluta, eds. (Amsterdam: B.R. Gruner 1991).

(2) *Aristotelis Latinus I 1-5. Categoriae vel Praedicamenta*. L. Minio-Paluello. Leiden: E.J. Brill 1961 and *Aristotelis*

Latinus VI 1-3. De Sophisticis Elenchis. B.G. Dod. Leiden: E.J. Brill, Brussels: Desclée de Brouwer 1975.

(3) *Incerti Auctores, Quaestiones super Sophisticos Elenchos*, S. Ebbesen, ed. *Corpus Philosophorum*

Danicorum Medii Aevi VII. Copenhagen: Gad 1977. Of the two sets of questions edited by Ebbesen I shall use only the first (the SF commentary).

10. ———. 1991. "Logic in Late Sixteenth-Century England: Humanist Dialectic and the New Aristotelianism." *Studies in Philology* no. 88:224-236.

"In this paper I intend to look at the kind of logic that was taught at Oxford and Cambridge in 1590, and that was central to the undergraduate curriculum. I shall begin with a survey of the authors who were studied during the sixteenth century; then I shall consider the contents of their texts, with particular emphasis on the interplay between logic, dialectic and Aristotelianism. My main purpose is to explain what humanist dialectic might have been, and what it actually became in the hands of the textbook writers.

Suppose we start by considering the logic texts known to have been published in England between 1580 and 1590, or more accurately, between 1580 and 1589, since no logic text survives from the year 1590 itself. (1) There are in all 25 titles, and of these titles five are in English.

Thomas Wilson's *Rule of Reason* appeared in 1580. It was first published in 1551, and was the most popular of all the English vernacular texts. (2)

The second English text is a translation of Petrus Ramus's *Dialectica*, (3) and the last three, all dated 1588, are variants of Abraham Fraunce's *The Lawiers Logike*, which is basically a Ramist text. (4) Turning to the Latin titles, there are four printings of John Seton's *Logica* which had first appeared in 1545, and went through 14 editions by the end of the century. (5) It was by far the most popular of the English non-vernacular texts. Next there is the first edition in 1584 of John Case's important work on Aristotle's logic,

the *Summa Veterum Interpretum*, which received the accolade of five editions in Frankfurt. (6) Of the remaining works, two are Latin versions of Ramus's *Dialectica* and thirteen are about Ramus's logic. There is a good deal we can learn from this list, both with respect to the languages used and with respect to what is absent from it." (pp. 224-225)

(...)

"I find the English logic scene in 1590 somewhat depressing. We are faced with elementary manuals which have lost sight of the important medieval developments in logic, and which have failed to make anything theoretically interesting of the humanistic innovations. (53) What we are left with is basically simplified Aristotle with some Ciceronian flourishes." (p. 236)

(1) A useful chronological list of logic books printed in England before 1620 is given by Charles B. Schmitt, *John Case and Aristotelianism in Renaissance England* (Kingston and Montreal: McGill-Queen's University Press, 1983), 225-29. For discussion of English logic during the sixteenth century, see E. J. Ashworth, *Introduction*, in Robert Sanderson, *Logicae Artis Compendium*, edited by E. J. Ashworth (Bologna: Editrice CLUEB, 1985), especially xxiii-xxxii; Luce Giard, "La production logique de l'Angleterre au xvie siècle," *Les Etudes Philosophiques* 3 (1985) :303-24; Lisa Jardine, "The Place of Dialectic Teaching in Sixteenth-Century Cambridge," *Studies in the Renaissance* 21 (1974):31-62. No attention should be paid to W. S. Howell, *Logic and Rhetoric in England, 1500-1700* (Princeton: Princeton University Press, 1956), since its account of logical developments, particularly during the medieval period, is inaccurate, and this vitiates the judgments the author makes about the texts he describes.

(2) See Thomas Wilson, *The Rule of Reason Conteyning the Arte of Logique*, edited by Richard S. Sprague

(Northridge, California: SanFernando Valley State College, 1972).

(3) For a modern edition of a translation of Ramus, see Catherine M. Dunn, ed., *The Logike of the Moste Excellent Philosopher P. Ramus Martyr Translated by Roland MacIlmaine (1574)* (Northridge, California: San Fernando Valley State College, 1969).

(4) Probably the appearance of three variants in one year represents the work's lack of success, since the reissue of a work with a new title page and reference to a new bookseller was a way of getting rid of unsold stock: see Giard, 319. For some discussion of Fraunce's work, see Lisa Jardine, "Humanistic Logic" in *The Cambridge History of Renaissance Philosophy*, ed. Charles B. Schmitt (Cambridge: Cambridge University Press, 1988), 190-91.

(5) John Seton, *Dialectica* (Londini, 1584).

(6) John Case, *Summa veterum interpretum in universam dialecticam Aristotelis* (Londini, 1584). For a discussion of Case's work and significance, see the book by Schmitt cited above. For editions of the text, see Schmitt, 261.

(53) I would like to thank Lisa Jardine and Eleonore Stump who, over the years, have persuaded me that formal logic is not the whole story. I would also like to thank the organizers of the "London, 1590" conference for inviting me to present this paper.

11. ———. 1992. "Analogy and Equivocation in Thirteenth-Century Logic. Aquinas in Context." *Mediaeval Studies* no. 54:94-135.

"One of the outstanding features of the extensive literature on Aquinas's doctrine of analogy is the complete absence of any attempt to set him in the context of thirteenth-century logic. (1) Certainly frequent reference is made to Cardinal Cajetan; but Cajetan wrote over two centuries later, and he had his own philosophical agenda, which in many ways owed more to fourteenth-century developments than it did to Aquinas himself. (2) In this paper I intend to provide

some essential background to Aquinas by examining how equivocation was handled by logicians, including the young Duns Scotus, between ca. 1230 and ca. 1300. I shall show how analogy entered the logic texts in the context of equivocation; and I shall argue that the emphasis on analogy *per attributionem*, the absence of the analogy of proportionality, and the development of a threefold classification of analogy all throw considerable light on Aquinas's own discussion of analogy, particularly as found in the passage from his *Sentences* commentary which was the focus of Cajetan's attention. While I do not wish to claim that paying attention to Aquinas's historical situation will by itself provide us with a definitive interpretation of his doctrines, I do believe that such an endeavour will enable us to rule out certain interpretations as inappropriate or unlikely, and that it will enable us to make sense of otherwise obscure remarks.

The present paper is the second part of a two-part study of Aquinas in relation to thirteenth-century logic. In the first part I discussed the general theory of language which provides the context for doctrines of equivocation and analogy. (3) In particular, I explained such key terms as *significatio*, *res significata*, and *modi significandi*. I also discussed the effects of context on equivocal and analogical terms. While the present paper stands by itself, reading it in conjunction with the other will lead to a fuller understanding of some of the details that I can mention here only in passing." (pp. 94-95)

(1) An exception to this remark is provided by a paper which has just appeared: A. de Libera, "Les sources gréco-arabes de la théorie médiévale de l'analogie de l'être," *Les études philosophiques* [special issue on analogy] (1989): 319-45. De Libera, however, is more concerned with metaphysical than with logical issues. For a very interesting use of speculative grammar to interpret Aquinas on the language of the sacraments, see I. Rosier, "Signes et sacrements:

Thomas d'Aquin et la grammaire spéculative," *Revue des sciences philosophiques et théologiques* 74 (1990): 392-436.

(2) For some details, see E. J. Ashworth, "Equivocation and Analogy in Fourteenth Century Logic: Ockham, Burley and Buridan" in *Historia Philosophiae Medii Aevi: Studien zur Geschichte der Philosophie des Mittelalters*, ed. B. Mojsisch and O. Pluta (Amsterdam, 1991). I am currently working on a study of Cajetan in relation to some fifteenth and sixteenth-century Thomist logicians. Recent studies by Bruno Pinchard make some attempt to place Cajetan in his philosophical and theological context but have little to offer so far as relating him to fifteenth-century logic and semantics is concerned. See B. Pinchard, *Métaphysique et sémantique* (Paris, 1987); idem, "Du mystère analogique à la 'Sagesse des Italiens,'" *Les études philosophiques* (1989): 413-27. See also the critical notice of Pinchard's book by O. Boulnois, *ibid.*, 517-26.

(3) See E. J. Ashworth, "Signification and Modes of Signifying in Thirteenth-Century Logic: A Preface to Aquinas on Analogy," *Medieval Philosophy and Theology* 1 (1991): 39-67.

12. ———. 1992. "Analogical Concepts: The Fourteenth-Century Background to Cajetan." *Dialogue. Canadian Philosophical Review* no. 31:399-413.

"In 1498 Cajetan published a short book, *On the Analogy of Names*, which is often regarded as a masterly summary of Aquinas's doctrine of analogy. It opens in the very first paragraph with an attack on three views of the concept of being (*ens*): first, that it is a disjunction of concepts; (1) second, that it is an ordered group of concepts; and third, that it is a single, separate concept which is unequally participated by substances and accidents. A number of questions immediately spring to mind. Why are concepts being discussed when analogy is said by Cajetan to be a theory of language? What is meant by 'concept'? Who held the views under attack and why? So far as I can tell, the

extensive literature on both Aquinas and Cajetan offers no satisfactory answers to these questions.

In this paper I shall locate the views mentioned by Cajetan in some fourteenth-century sources. I shall limit myself in two ways. First, I shall focus on those authors, particularly Peter Aureol (d. 1322), Hervaeus Natalis (d. 1323), and John of Jandun (d. 1328), whose views were discussed by Cajetan's immediate predecessors, (2) and whose works were to be influential during the Renaissance. Second, I shall for the most part ignore the Scotists, who held that 'being' was univocal, and the nominalists, who did not accept common natures, and did not appeal to the distinction between formal and objective concepts.

I hope not only to cast some light on developments in the theory of analogy between Aquinas and Cajetan but also on medieval theories of signification. The doctrine that *ens* is an analogical term provides us with a useful test case, for given the beliefs that a noun signifies a concept, and that a concept captures a common nature, we are faced with an obvious problem. On the one hand, *ens* does not seem to be straightforwardly equivocal, in the sense of being subordinated to more than one concept, since we at least have the illusion of being able to grasp *ens* as a general term; on the other hand, there does not seem to be any common nature involved. The issue is further complicated by beliefs about the nature of mental language. If the language of thought is an ideal language, at least to the extent of containing no equivocal terms, then one can ask what room there is in it for analogical concepts. Such terms as 'healthy' (*sanum*) are capable of analysis into a complex of concepts (e.g., a food is healthy because it contributes to the health of those animals that eat it), but the most important analogical terms, those used of God, are precisely the terms which do not seem susceptible of replacement by a complex whose parts are fully clear.

The theory of analogy as presented by medieval philosophers is also gravely affected by the belief that each word is endowed with its signification, including its grammatical features or consignification, as a unit. Such an assumption is not easy to reconcile with the thought that language is flexible, and that one and the same word can have different shades of meaning in different contexts without thereby becoming a different lexical item. This is not the place, however, to cast doubt on the viability of the whole enterprise, and I shall content myself with asking how some of the parts of the enterprise were thought to fit together." (pp. 399-400)

(...)

"Conclusion

This short paper merely scratches the surface of fourteenth- and fifteenth-century accounts of analogical concepts. Nonetheless, I hope I have said enough to show that Cajetan needs to be read in the light of his more immediate predecessors, rather than as a man wrestling in solitude with the works of Aquinas." (p. 413)

(1) See Bruno Pinchard, *Métaphysique et sémantique. Autour de Cajetan*. Étude [texte] et traduction du "De Nominum Analogia" (Paris: Vrin, 1987), p. 114. The text has "in-disiunctionis," but this has to be wrong: cf. p. 133, par. 71, where Cajetan once more lists the three views, beginning with "conceptum disiunctum." Pinchard wrongly suggests (p. 152, par. 1, n. 5) that the latter text should be emended. (2) Notably Johannes Capreolus (d. 1444), Dominic of Flanders (d. 1479), and Paulus Soncinas (d. 1494).

13. ———. 1992. "New Light on Medieval Philosophy: The *Sophismata* of Richard Kilvington." *Dialogue. Canadian Philosophical Review* no. 31:517-521.

"The fourteenth-century English philosopher and theologian Richard Kilvington (1302/5–61) presents a useful correction to popular views of medieval philosophy in two ways. On the one hand, he reminds us that to think of

medieval philosophy in terms of Aquinas, Duns Scotus and Ockham, or to think of medieval logic in terms of Aristotelian syllogistic, is to overlook vast areas of intellectual endeavour. Kilvington, like many before and after him, was deeply concerned with problems that would now be assigned to philosophy of language; philosophical logic and philosophy of science. He discussed topics in epistemic logic, semantic paradoxes, problems of reference, particularly those connected with the interplay between quantifiers and modal or temporal operators, and problems arising from the use of infinite series in the analysis of motion and change. On the other hand, this very account of his work raises the important issue of conceptual domain. I have spoken as if Kilvington's work can be neatly classified in terms of contemporary interests; and the temptation to read medieval philosophy in modern terms is only strengthened when one recognizes Kilvington as the first member of the group of Oxford calculatores, men such as William Heytesbury and Richard Swineshead, whose discussions of mathematics and physics have caused them to be hailed as forerunners of modern science."

14. ———. 1992. "The *Obligationes* of John TarTEys: Edition and Introduction." *Documenti e Studi sulla Tradizione Filosofica Medievale* no. 3:653-703.
15. ———. 1992. "Logic in Late Medieval Oxford." In *The History of the University of Oxford, Vol. II: Late Medieval Oxford*, edited by Catto, Jeremy C. and Evans, Ralph, 35-64. Oxford: Clarendon Press.

Co-author Paul Vincent Spade.

"This chapter discusses three main periods in the history of Oxford logic that occurred approximately between 1330 and 1500. It talks about three Merton authors who were accountable for the course of much subsequent medieval logical theory — Thomas Bradwardine (1295–1349), William Heytesbury (1313–1372 or 1373), and Richard Billingham. This chapter also evaluates the logical activities

that occurred during the late medieval period in Oxford by looking at the collections of texts that circulated in manuscript and were eventually printed as the two *libelli sophistarum*. It argues that the *libelli sophistarum* shows a disappointing picture of English logic in the fifteenth century. However, Oxford logic was excellent for it reached a level of sophistication and insight that was not gained anywhere else until the end of the seventeenth century with Leibniz, and not surpassed until the middle of the nineteenth century."

16. ———. 1993. "Ralph Strode on Inconsistency in Obligational Disputations." In *Argumentationstheorie. Scholastische Forschungen Zu Den Logischen Und Semantischen Regeln Korrekten Folgerns*, edited by Jacobi, Klaus, 363-386. Leiden: Brill.

"Treatises on obligations represent one of the interesting new developments of medieval logic.(1) They set out the rules which were to govern a certain kind of disputation, the obligational disputation. Truth was not at issue in such disputations, since their starting point was normally a false proposition;(2) nor was any particular subject-matter explored. Instead, according to Strode, their purpose was both to provide exercise for beginning students in handling logical inferences; and to prepare them to reason from truths in real-life situations.(3) He compared these disputations to the military exercises which young soldiers had to undergo before they could participate in real battles. (4)

Obviously both the acceptance of falsehoods and the application of rules in isolation from a given subject-matter have their dangers; and one of the features of obligations treatises is the way they explore the different kinds of inconsistency which can arise in a disputational setting. In this paper I intend to discuss Ralph Strode's reaction to earlier attempts to amend the rules so as to avoid some of these kinds of inconsistency. So far as Strode's predecessors

are concerned, my main focus will be on Roger Swyneshed (5) and on an anonymous author whose treatise on obligations was preserved in a Merton College manuscript, (6) though I shall also pay some attention to Richard Kilvington. (7)" (pp. 363-364)

(1) For bibliography and discussion, see Paul of Venice, *Logica Magna*. Part II Fascicle 8. [*Tractatus de Obligationibus*] ed./trad. E. J. Ashworth, published for the British Academy by the Oxford University Press, 1988. Two papers which are particularly relevant to the theme of this paper are: P. V. Spade, 'Three Theories of Obligationes: Burley, Kilvington and Swyneshed on Counterfactual Reasoning', *History and Philosophy of Logic* 3, 1982, 1-32; and E. J. Ashworth, 'Inconsistency and Paradox in Medieval Disputations: A Development of Some Hints in Ockham', *Franciscan Studies* 44, 1984, 129-139.

(2) Some authors, including Strode, explicitly allowed the possibility of a true *positum*: see Paul of Venice, op. cit., p. 33; Ralph Strode, *Obligationes*, Oxford Bodleian Library MS Canon. misc. 219, fol. 37"; Spade, op. cit., p. 12 (for a discussion of Burley on this point).

(3) Strode, *ibid.*, fol. 37', fol. 37va. The second point is made even more clearly by the anonymous Merton author who refers to jurists and moral philosophers in this context: see N. Kretzmann and E. Stump, 'The Anonymous De Arte Obligatoria in Merton College MS. 306"', in *Mediaeval Semantics and Metaphysics. Studies dedicated to L.M. de Rik*, ed. E. P. Bos, Nijmegen: Ingenium, 1985, pp. 243 sq., § VI. (Short title: *Anon. Merton*). It should be noted that I use the phrase 'anonymous Merton author' for convenience, and not because we know that he was actually a Mertonian. In Paul of Venice, op. cit., I referred to him as Pseudo-Dumbleton.

(4) Strode, op. cit., fol. 37ra.

(5) Swyneshed's treatise was probably written between 1330 and 1335. For discussion and an edition of the text, see P.V.

Spade, "Roger Swyneshed's *Obligationes*: Edition and Comments", *Archives d'histoire doctrinale et littéraire du moyen age* 44, 1977, 243-285. (Short title: *Swyneshed*).

(6) See note 3 above. This treatise was probably written during the period 1335-1349: see Anon. Merton., p. 239.

(7) Since I wrote this paper, *The Sophismata of Richard Kilvington*, edited and translated by Norman Kretzmann and Barbara Ensign Kretzmann, has appeared in two volumes: translation, introduction and commentary, Cambridge: University Press, 1990; edition, Oxford: University Press for the British Academy, 1990. However, I have drawn my material from Spade, op. cit., pp. 19-28, and from E. Stump, "Roger Swyneshed's Theory of Obligations", *Medioevo* 7, 1981, 143-153.

17. ———. 1994. "*Obligationes* Treatises: A Catalogue of Manuscripts, Editions and Studies." *Bulletin de Philosophie Médiévale* no. 36:118-147.

"*Obligationes* treatises, which deal with the rules to be followed in a certain kind of logical disputation, still form perhaps the least wellunderstood part of medieval logic. Although a number of texts have been edited in recent years, and although various theses about the nature and purpose of obligational disputations have been put forward, we are unlikely to achieve a proper understanding of the issues until the larger part of the surviving material has been edited and assessed. I have decided to publish the following catalogue of manuscripts, editions and studies in the hope that it will speed up this process of edition and assessment. I am reasonably confident that my bibliographies of edited texts, studies and translations are complete and accurate. I am also reasonably confident that my bibliography of early printed editions is more-or-less complete and accurate. I have indicated those few cases in which I have not been able to see a book for myself. So far as medieval manuscripts are concerned, I am less confident, either of completeness or of accuracy. In the catalogue of manuscripts I have indicated

whether or not I have seen the manuscript in whole or in part, but unfortunately some of the microfilms I have seen were virtually illegible, owing to their poor technical quality. In the catalogue of medieval authors, I have indicated what I know about current editorial projects. My own editions of John Tarteys, Paul of Venice and Ralph Strode have been completed, and I am now trying to come to grips with the series of obligationes treatises associated with Oxford and Cambridge. Needless to say, I shall be grateful for any comments on, corrections of, or additions to the lists which follow.

I have to thank those people who have already helped me with information and advice, including Louis J. Bataillon, Egbert P. Bos, Julian Deahl, Angel d'Ors, Sten Ebbesen, Gedeon Gal, Alfonso Maierù, John Murdoch, Paul Spade, and Rega Wood. I also owe a great debt of gratitude to the Killam Program of the Canada Council for awarding me the Kfilm Research Fellowship which enabled me to do much of the work recorded here.

The material is arranged under the following headings:

1. Catalogue of medieval authors.
 2. Catalogue of manuscripts.
 3. Early printed editions.
 4. Edited texts.
 5. Studies and translations." (pp. 118-119)
18. ———. 1994. "Les Manuels De Logique À L'université D'oxford Aux Xiv Et Xv Siècles." In *Manuels, Programmes De Cours Et Techniques D'enseignement Dans Les Universités Médiévales*, edited by Hamesse, Jacqueline, 351-370. Louvain-la-Neuve: Université Catholique de Louvain, Publications de l'Institut d'Etudes Médiévales.
- "Quand j'ai commencé mes recherches pour cette communication, je me suis posé deux questions: Qu'est-ce qu'un manuel; et quels sont les rapports entre l'écrit et l'oral dans l'enseignement de la logique? A première vue, la notion de manuel semble tout à fait claire. Dans Le Petit

Robert, on lit « Manuel: ouvrage didactique présentant, sous un format maniable, les notions essentielles d'une science, d'une technique, et les connaissances exigées par les programmes scolaires ». D'après cette définition, on peut exclure de cette catégorie les textes de base, les commentaires, et les monographies destinées aux autres professionnels. Malheureusement, quand on commence à étudier l'enseignement à la faculté des arts à Oxford, on constate très vite que les commentaires étaient utilisés de la même manière que les autres genres de littérature, et qu'il n'est pas possible de faire une distinction nette entre les monographies et les manuels. Qui plus est, on ne peut pas comprendre le contenu ni le but des manuels sans connaître les textes de base et les techniques d'enseignement.

Ma deuxième question n'a pas de réponse plus claire que la première, car il faut faire face à deux problèmes. Tout d'abord, il y a la tension entre l'écrit et l'oral dans l'enseignement lui-même. D'un côté, cet enseignement était carrément fondé sur l'étude des textes. On prenait les textes d'Aristote, on les lisait, on les commentait, on les apprenait par cœur (1). De l'autre côté, la dispute jouait un rôle central dans l'enseignement, et, par sa structure et son contenu, a stimulé la production d'une grande partie de la littérature médiévale sur la logique. Deuxièmement, il y a la question du rapport entre les textes écrits et les disputes ou les leçons. Est-ce que les textes dont nous disposons, surtout les collections de *sophismata*, reproduisent ce qui se passait dans la salle de classe, ou est-ce qu'on les a écrits pour aider la discussion de ce qui devait se faire dans la salle de classe?

Je vous ai donné ce bref aperçu de mes questions initiales afin de vous expliquer pourquoi je vais parler de l'enseignement en général, avant de me concentrer sur les manuels de logique dans l'acception stricte de ce terme. Dans la première partie de ma communication, je présenterai le programme d'études en logique tel qu'on le trouve à Oxford, mais aussi à Cambridge. Afin de vous

donner quelques points de repère, j'expliquerai le contenu de la *Logica vetus* et la *Logica nova*, et j'examinerai les commentaires qu'on associe avec les universités anglaises. Ensuite, je parlerai des manuels de logique, et j'essayerai de montrer comment ils sont liés, et aux silences d'Aristote, et à la dispute comme méthode d'enseignement." (pp. 351-352)

(...)

Pour terminer, je voudrais revenir à mes deux premières questions: Qu'est-ce qu'un manuel? Quels sont les rapports entre l'écrit et l'oral dans l'enseignement de logique? Je pense que la réponse à la première question est tout simplement qu'un manuel est une oeuvre écrite, distincte des textes de base, que l'on utilise dans l'enseignement.

Donc, un commentaire des textes de base peut constituer un manuel pour les étudiants, et un exemple d'un autre genre littéraire en logique peut être une monographie. Quant à la deuxième question, il n'y a pas de réponse facile.

Considérons les *sophismata* écrits. Quelques-uns, y compris les *Sophismata* de Kilvington et Heytesbury, étaient écrits comme tels (85); d'autres sont la *reportatio* ou la *determinatio* d'une dispute (86). Ce qu'on peut dire, c'est qu'il y a un grand nombre de *sophismata* que l'on trouve dans tous les textes d'un certain genre. Donc, s'il s'agissait là de *reportationes* de disputes au début, je pense que ces *sophismata* sont très vite devenus de purs exemples écrits, sans référence évidente à une dispute ayant réellement eu lieu (87)." (pp. 369-370)

(1) Comme Alain de Libera l'a très bien dit, « La philosophie s'enseigne aujourd'hui comme au Moyen Age: il a des *auctores* et des *textus*; bref, comme auparavant à Athènes, à Alexandrie et à Bagdad, on lit et on commente ». A. De Libera, *Penser au Moyen Age*, Paris, 1991, p. 144.

(85) E. Sylla, *The Oxford calculators*, dans *The Cambridge History of Later Medieval Philosophy*, éd. N. Kretmann, A. Kenny, et J. Pinborg, Cambridge, 1982, p. 546.

(86) Voir A. Maierù, *The sophism « Omnis propositio est vera vel falsa » by Henry Hopton (Pseudo-Heytesbury's « De Verdate et Falsitate Propositionis »)*, dans S. Read (éd.) *Sophisms in Medieval Logic and Grammar*, Dordrecht - Boston - London, 1993, p. 103-115.

(87) Je voudrais remercier Luce Giard d'avoir revu ma grammaire et beaucoup amélioré mon style.

19. ———. 1995. "Suarez on the Analogy of Being. Some Historical Background." *Vivarium* no. 33:50-75.

"In his *Disputationes Metaphysicae*, published in 1597, the great Scholastic philosopher Francisco Suárez offered an account of the analogy of being that has long been the focus of attention. (1) However, little attempt has been made to situate his account historically, despite the wealth of references to earlier authors given by Suárez himself. (2) Certainly Suárez is seen as reacting to his predecessors, but only two of these, John Duns Scotus and Thomas de Vio, Cardinal Cajetan, are thought to be of any real importance. In relation to Cajetan, Suárez is criticized (or praised) for allowing the analogy of attribution to embrace both intrinsic and extrinsic denomination, and for refusing to assign the analogy of proportionality any role outside the area of metaphor. In relation to Scotus, Suárez is accused of following Scotus so closely in emphasizing the unity of the concept of being that little if any room is left for genuine analogy. Jean-Luc Marion, for instance, has claimed that Suárez tried to construct a new model of analogy which would allow an escape from univocity at the verbal level while admitting its conceptual presuppositions. (3) I intend to argue that Suárez is best read as part of a tradition which predates Cajetan with respect to the classification of types of analogy, and which to some extent predates Scotus in its insistence on a concept of being which is both one and analogical. I add "to some extent" because the fullest working out of the theory of a single analogical concept is found in later works which make full use of

Scotus' s own arguments. (4) I shall draw most of my material from three fifteenth century philosophers and theologians, Johannes Capreolus (d. 1444), Dominic of Flanders (d. 1479) and Paulus Soncinas (Paolo Barbo da Soncina, d. 1495). (5) I shall also draw on the sixteenth-century Spaniard Domingo de Soto (d. 1560). (6) All of these authors were cited by Suárez, and all had a clear influence on him.

My paper is divided into two parts. In Part I, I consider how different types of analogy were distinguished and described. In Part II, I turn to the discussion of *ens* itself, and the question of whether it is possible for humans to have a single, separate concept of being.

Because my purpose is to place Suárez in his historical context, I shall not consider his actual arguments in any depth; nor shall I consider the philosophical difficulties inherent in his theories. (7)" (pp. 50-51)

(1) For the text, see Francisco Suárez, *Disputationes Metaphysicae* in *Opera omnia*, vols. 25 and 26, Paris 1866; repr. Hildesheim 1965. I shall refer to these volumes as DM I and II. For discussion of Suárez, see John P. Doyle, 'Suárez, on the Analogy of Being', in: *The Modern Schoolman*, 46 (1969), 219-49, 323-41; and Walter Hoeres, Francis Suarez and the Teaching of John Duns Scotus on "Univocatio Entis", in: *John Duns Scotus, 1265-1965*, ed. John K. Ryan and Bernardine M. Bonansea, Washington, D.C. 1965, 263-90 (Studies in Philosophy and the History of Philosophy, 3).

(2) Lyttkens does relate Suárez to Petrus Fonseca, who is certainly an important near contemporary source: see Hampus Lyttkens, *The Analogy between God and the World: An Investigation of Its Background and Interpretation of Its Use by Thomas of Aquino*, Uppsala 1953, 234-6. However, Fonseca is too close to Cajetan to serve my current purposes.

(3) Jean-Luc Marion, *Sur la théologie blanche de Descartes*, Paris 1981, 82: "Loin de conclure à l'univocité, Suárez, va entreprendre de construire un nouveau modèle d'analogie, qui permette à la fois d'échapper verbalement à l'univocité, et d'en admettre les présupposés conceptuels".

(4) Olivier Boulnois has recognized the importance of the absorption of Scotist arguments by Thomists: see Boulnois in Jean Duns Scot, *Sur la connaissance de Dieu et l'univocité de l'étant*, introduction, traduction et commentaire par Olivier Boulnois, Paris 1988, 36: "Mais l'univocité triomphe de façon plus éclatante encore à l'endroit où elle est le plus violemment combattue, dans l'école thomiste, car elle s'impose comme le fonds commun sur lequel s'engage la polémique. - Cajetan est ici un cas exemplaire, lui qui entendait défendre l'esprit thomiste contre l'enseignement scotiste", For some discussion of analogical concepts, see E. J. Ashworth, *Analogical Concepts: The Fourteenth-Century Background to Cajetan*, in: *Dialogue*, 31 (1992), 399-413.

(5) For discussion of Capreolus, see Johannes Hegyi, *Die Bedeutung des Seins bei den klassischen Kommentatoren des heiligen Thomas von Aquin: Capreolus-Sylvester von Ferrara Cajetan*, Pullach bei München 1959. Hegyi has nothing to say about Capreolus on analogy. Some useful biographical material about Dominic of Flanders and Soncinas, as well as a compendium of passages about analogy, can be found in Michael Tavuzzi, Some Renaissance Thomist Divisions of Analogy, in: *Angelicum*, 70 (1993), 93-122.

(6) For discussion of Soto, see E. J. Ashworth, Domingo de Soto (1494-1560) on Analogy and Equivocation, in: Ignacio Angelelli and Maria Cerezo (eds.), *Proceedings of the Third Pamplona Conference on the History of Logic*, New York-Berlin (Walter deGruyter), forthcoming [1996].

(7) For these matters, the reader can safely be referred to the two articles mentioned in note 1.

20. ———. 1995. "Late Scholastic Philosophy. Introduction." *Vivarium*:1-8.

"This issue of *Vivarium* is devoted to late scholastic philosophy, by which I understand a type of philosophy that coexisted with humanism, Renaissance philosophy, and early modern philosophy roughly from the late fifteenth to the late seventeenth century.(1) I shall not attempt to characterize early modern philosophy, other than by pointing out that Descartes's *Meditations* and Locke's *Essay concerning human understanding* may be taken as typical works, but a few remarks about humanism and Renaissance philosophy will help to indicate the types of contrast I wish to draw. So far as humanism is concerned, I follow Kristeller in seeing it as primarily "a cultural and educational program which emphasized and developed an important but limited area of studies." (2) The studies referred to included grammar, rhetoric, poetry, history, and moral philosophy, as opposed to the strictly philosophical disciplines of logic, natural philosophy, and metaphysics, though there was obviously an overlap in the case of moral philosophy." (p. 1)

(1) For slightly different characterizations, see J. Trentman, 'Scholasticism in the seventeenth century', in: N. Kretzmann, A. Kenny, J. Pinborg (eds.), *The Cambridge History of Later Medieval Philosophy*, Cambridge 1982, 818; and E. Keßler, 'The intellectual soul', in: C.B. Schmitt and Q. Skinner (eds.), *The Cambridge History of Renaissance Philosophy*, Cambridge 2 P.O. Kristeller, 1988, 507.

(2) P.O. Kristeller, *Renaissance Thought and Its Sources*, ed. M. Mooney, New York 1979, 22.

21. ———. 1995. "La Doctrine De L'analogie Selon Quelques Logiciens Jésuites." In *Les Jésuites À La Renaissance. Système Éducatif Et Production Du Savoir*, edited by Giard, Luce, 107-126. Paris: Presses universitaires de France.

Traduction de Lucie Giard.

"Je voudrais présenter, sur l'exemple de quelques auteurs de la Compagnie, la doctrine logique de l'analogie dont j'ai entrepris l'histoire du XIII^e à la fin du XVI^e siècle (1).

Jusqu'ici on s'était en général intéressé à la question de l'analogie telle qu'elle se présente chez les grands métaphysiciens, notamment Thomas d'Aquin, Jean Duns Scot et Francisco Suárez, auxquels on ajoutait, pour son court traité *De nominum analogia* (1498), un seul logicien, Cajetan (Thomas de Vio) (2). Si ces choix textuels sont compréhensibles, je les crois pourtant trompeurs. D'un côté, l'importance donnée aux arguments de Duns Scot en faveur de l'univocité de l'être a masqué l'existence d'une longue tradition qui acceptait que des termes analogiques correspondent à un seul concept, lui-même analogique. De l'autre, on a présenté Cajetan comme s'il donnait à la fois un résumé des doctrines médiévales et une interprétation de Thomas d'Aquin, restée pure de tout développement postérieur à l'Aquinate, en dépit d'un intervalle de plus de deux siècles entre lui et Cajetan. Je suis persuadée qu'en lisant les logiciens de plus près on aboutira à un jugement plus équilibré sur les positions de Cajetan et de Suárez par rapport à leurs prédécesseurs et qu'ainsi on pourra même mieux comprendre Thomas d'Aquin.

Dans ce chapitre, mon objectif sera limité. Je partirai de la classification des types d'analogie proposée par Francisco de Toledo (1532-1596), un logicien jésuite, et j'en expliquerai les origines à partir des théories médiévales de l'équivocité. Ensuite, en examinant de plus près l'analogie de proportionnalité proprement dite, je comparerai les thèses de Toledo sur ce point à celles d'autres jésuites, notamment Pedro da Fonseca (1528-1599) et Antonio Rubio (1548-1615). Je voudrais déterminer comment les logiciens de la Compagnie ont répondu aux demandes de Cajetan. Sans qu'il soit discuté véritablement de Suárez, ce qui suit sera directement applicable à l'intelligence de son rejet de

l'analogie de proportionalité proprement dite au bénéfice de l'analogie d'attribution." (pp. 107-108)

(1) On trouvera des bibliographies et des informations sur ce thème dans une série d'études que je lui ai consacrée: Signification and Modes of Signifying in 13th c. Logic: A Preface to Aquinas on Analogy, *Medieval Philosophy and Theology*, 1, 1991, p. 39-67; Analogy and Equivocation in 13th c. Logic: Aquinas in Context, *Mediaeval Studies*, 54, 1992, p. 94-135; Equivocation and Analogy in 14th c. Logic: Ockham, Burley and Buridan, in B. Mojsisch et O. Pluta (eds), *Historia Philosophiae Medii Aevi. Studien zur Geschichte der Philosophie des Mittelalters*, Amsterdam, 1991, t. 1, p. 23-43; Analogical Concepts: The 14th c. Background to Cajetan, *Dialogue*, 31, 1992, pp. 399-413. (2) Bruno Pinchard, *Métaphysique et sémantique. Autour de Cajetan (...)*, Paris, 1987.

22. ———. 1996. "Analogy, Univocation, and Equivocation in Some Early Fourteenth-Century Authors." In *Aristotle in Britain During the Middle Ages. Proceedings of the International Conference at Cambridge 8-11 April 1994 Organized by the Société Internationale Pour L'étude De La Philosophie Médiévale*, edited by Marenbon, John, 233-247. Turnhout: Brepols.

"In this paper I am going to consider how the definitions of equivocal and univocal terms from Aristotle's *Categories*, together with other texts from his *Physics* and *Metaphysics* were employed by some logicians and theologians in the early fourteenth century. My main concern is with the theory of analogy, but I shall also be concerned with the relationship between words, concepts, and things.

To begin, we need to consider certain standard features of the late thirteenth-century doctrine of signification (1). One important assumption is that words are endowed with signification by an original act of imposition. However this act occurs, each word is endowed not only with its central signification but also with its grammatical features or modes

of signifying as a unit, independently of and prior to any sentential context. We can note in passing that such an assumption is not easy to reconcile with the thought that language is flexible, and that one and the same word can have different shades of meaning in different contexts without thereby becoming a different lexical item. A second assumption, closely related to the first, is that words fall into specifiable groups. In particular, they are univocal or equivocal; and although equivocal words have to have univocal uses, it was certainly not thought to be the case that every univocal word could have an equivocal use. Third, there is the assumption, based on *De Interpretatione* 16 a3, that words signify concepts primarily and through them things. As we shall see, the precise nature of the concepts signified by analogical terms came to loom large in discussions of analogy.

In order to understand how and why this was so, we need to look at the opening words of Aristotle's *Categories*.

Following Boethius's translation, these are (2):

Those that have only a name in common but a different *substantiae ratio* in accordance with that name are said to be equivocals, e.g., 'animal' <in relation to> man and what is painted [...]

Those that have both a name in common and the same *substantiae ratio* in accordance with that name are said to be univocals, e.g., 'animal' <in relation to> man, ox.

The meaning assigned to *ratio substantiae* is crucial to the understanding of these definitions. It was agreed that the *ratio substantiae* of a name included all that in some way expressed the essence or quiddity of a substance or accident; but when further clarification was sought, difficulties arose. In the thirteenth century there had been disagreement between those who saw the *ratio substantiae* as an Avicennian nature and those who, like Aquinas, identified it with the inner word (3). In the fourteenth century, when the *ratio substantiae* was normally identified

as a concept (4), this disagreement came to be expressed in terms of the difference between the formal concept, or the act of knowing, and the so-called objective concept, or the object insofar as it is known and apprehended by the formal concept (5). Whatever the vocabulary used, there was a second disagreement, more important to my present purposes, which concerned the number and type of the concepts, natures, or rationes involved. Given Aristotle's initial definition, there is no problem: a univocal term is associated with one concept, nature or ratio; an equivocal term with more than one. However, this simple dichotomy was complicated by the claim that equivocation can be subdivided, and by the relationship between these subdivisions and analogy." (pp. 233-235)

(...)

"To conclude, I would like to remark that one result of these arguments for the equivocality of the term 'ens' is that the burden of analogy cannot be carried by single words or single concepts. A term cannot be used to express priority and posteriority and attribution, and yet these notions are expressed in language. The obvious solution is to give up the attempt to categorize terms as equivocal, univocal or analogical, and to look instead at how they behave in different contexts and in relation to different sentential structures (41). Unfortunately, this solution seems to have been incompatible with medieval approaches to language." (pp. 246-247)

(1) For discussion and references, see E.J. Ashworth, « Signification and Modes of Signifying in Thirteenth-Century Logic : A Preface to Aquinas on Analogy », in *Medieval Philosophy and Theology*, 1 (1991), pp. 39-67.

(2) Aristotle, *Categories*, I a1-15 (Aristoteles Latinus, I, 1-5). *Categoriae vel Praedicamenta*, ed. L. Minio-Paluello, Leiden, 1961, p. 5 : « Aequivoca dicuntur quorum nomen solum commune est, secundum nomen vero substantiae ratio diverse, ut animal homo et quod pingitur. [...] Univoca

vero dicuntur quorum et nomen commune est et secundum nomen eadem substantiae ratio, ut animal homo atque bos [...]».

(3) For discussion, see E.J. Ashworth, « Analogy and Equivocation in Thirteenth-Century Logic: Aquinas in Context », in *Mediaeval Studies*, 54 (1992), p. 105.

(4) See, e.g., William of Ockham, *Summa Logicae*, eds. P. Boehner, G. Gál and S. Brown (*Opera Philosophica*, I), N.Y., St. Bonaventure, 1974, p. 45; William of Ockham, *Expositio in librum Praedicamentorum Aristotelis*, ed. G. Gál (*Opera Philosophica*, II), N.Y., St. Bonaventure, 1978, p. 143, p. 144 ; John Buridan, *Iohannes Buridanus. Quaestiones in Praedicamenta*, ed. J. Schneider, München, 1983, p. 4.

(5) For discussion, see E.J. Ashworth, « Analogical Concepts: The Fourteenth-Century Background to Cajetan », in *Dialogue*, 31 (1992), pp. 403-404.

(41) See J. F. Ross, *Understanding Analogy*, Cambridge, 1981.

23. ———. 1996. "Domingo De Soto (1494-1560) on Analogy and Equivocation." In *Studies on the History of Logic. Proceedings of the Third Symposium on the History of Logic*, edited by Angelelli, Ignacio and Cerezo, María, 117-132. Berlin: Walter de Gruyter.

"In 1543 the Spanish logician, Domingo de Soto, published a commentary on Aristotle's *Categories*. (1) As one might expect, Soto offers a detailed discussion of the opening lines in which Aristotle presents a definition of equivocal terms, but his discussion also includes an analysis of analogical terms, together with an account of the conceptual correlates of such terms. The purpose of this paper is to show how Soto's analysis fits into a long tradition of commentary on the *Categories*. In particular, I wish to show that although Soto betrays the influence of Thomas de Vio, Cardinal Cajetan, whose short book, *On the Analogy of Names*, was published in 1498, it is a great mistake to suppose that the history of analogy from the thirteenth to the sixteenth

century should be read through the eyes of Cajetan. At the same time, I hope to throw some light on the background to Suarez, for it seems to me that there is a close relationship between the doctrines found in Soto and those developed by Suarez.

My paper is divided into three parts. In the first part, I shall look at the notion of equivocation and how it came to be related to analogy. In the second part, I shall describe Soto's divisions of analogy and how they are related to those of Cajetan. In the third part, I shall discuss what Soto had to say about the imposition of analogical terms and about their relationship to concepts and natures." (p. 117)

(...)

"3. *Analogy, Imposition, and Concepts.*

The mention of concepts brings us to the last section of my discussion, in which I shall consider Soto's explanation of the way analogical terms were related to conventional signification on the one hand, and to concepts on the other. For Soto, as for other medieval and post-medieval logicians, spoken words were endowed with their signification by arbitrary imposition. Some logicians, including the sixteenth-century Spaniard Antonio Coronel, argued that deliberate equivocation involves two acts of imposition, (39) but Soto followed Dominic of Flanders in affirming that only one act of imposition is involved for analogical terms. (40) In the case of such analogical terms as '*homo*', used of painted men, '*ridere*', used of fields, and '*sanum*', used of urine, there is a transference of signification, and what is imposed to signify one thing, comes to signify another. In the case of '*ens*', however, there is no transference. This word was originally imposed to signify *id quod est*, and so it signifies substance and accidents, God and creatures, without any need for a specially extended use. (p. 124)

(...)

"In his *Categories* commentary, Soto was more forthright. After giving a lengthy account of Scotus's arguments for the

univocity of the word '*ens*', he put forward four theses. (46) The first thesis was that there is one formal concept of being, a view which Soto supported both by reference to Scotus's arguments and by extra reasons of his own. One of these had to do with imposition. Whoever first imposed the word '*ens*' could not have been thinking specifically of God or of creatures, of substance or of accidents, any more than do those Latin-speakers who are ignorant of philosophy. So far as the first thesis was concerned, Soto saw no difference between Scotus and Aquinas. His second thesis postulated just one objective concept. Even though many Thomists deny this, he said, '*ens*' signifies one formal ratio in the object, abstracted by reason from substance and accidents. Nonetheless, in his third thesis he stated that '*ens*' signifies substance and accidents not univocally but analogically. This is because the ratio is not found simply but *proportionabiliter* in its significates, principally in one and through attribution in the others. In his fourth thesis, Soto turned to God and creatures, stating that '*ens*' is also said analogically of them, even though the case is not strictly comparable to that of substance and accidents. Indeed, he remarked, we can understand why Aquinas said different things in different places if we realize that theological analogy, as Alain de Libera has called it, (47) involves both similarity to and difference from philosophical analogy. On the one hand, there is a similarity to analogy because of the dependence relation between God and creatures. This is why Aquinas, in *Summa theologiae* Ia q.13 a.5, compared '*ens*' said of God and creatures with '*sanum*'. As urine is a sign of an animal's health, so the perfections of creatures are nothing other than expressions of perfections in God. On the other hand, there is a difference from analogy in that *ens* is said simpliciter of both God and creatures, and this is why in *De Veritate* q.2 a. 11 Aquinas said that there was an analogy of proportionality between God and creatures. As God exists through the *esse* formally in him, so do creatures

exist through the *esse* formally in them. In his conclusion, and without saying more about proportionality, Soto remarked that the analogy of being between God and creatures is called univocation because it is nearer to univocation than is the analogy of being between substance and accidents.

4. Conclusion.

Soto's four theses point the way to the subtle and intensive analysis of *ens* given by Suarez in his *Disputationes Metaphysicae*. While Suarez's doctrine is not precisely that of Soto, there are clear parallels between the two great Spaniards, and Suarez cites Soto's commentary on the *Categories* a number of times. A more precise account of how Suarez made use of Soto's arguments, and how Soto ranks in comparison to Suarez's other sources will, however, have to await another occasion."

(1) I shall use the facsimile edition of the 1587 edition: Domingo de Soto, *In Praedicamentorum*, in Soto, *In Porphyrii Isagogen, Aristotelis Categorias, librosque de Demonstratione Absolutissima Commentaria*, Venice 1587 /reprinted 1967 Frankfurt: Minerva).

(39) Antonius Coronel, *Magistri Antonii coronel Secobiensis super librum Predicamentorum Aristotelis secundum utriusque vie realium scilicet et nominalium principia commentaria*. Parrhisiis. 1518, fol. ii va.

(40) Dominic of Flanders, *In D. Thomae Aquinatis Commentaria super Libres Posteriorum Analyticorum Aristotelis, nec non et in eiusdem Fallaciarum opus. Quaestiones Perutiles, Pauli quoque Soncinatis eiusdem ordinis, lucida et subtilis Expositio in Porphyrii Isagogen, et Aristotelis Praedicamenta, cum suis quaestionibus in unaquaque expositione Militer disputatis*. Venetiis 1600, p. 177B; 1499 sig. i 3vb. On sig. i 3va he writes "*analogum debet significare unam principaliter et aliud secundaria, una impositione ex parte ipsius imponentis.*" (I have corrected the text slightly.) Soto 1587, p. 119a-b.

(46) Soto 1587, pp. 129a-133a.

(47) Alain de Libera, *Albert le Grand et la philosophie*, Paris: J. Vrin 1990, p. 96.

24. ———. 1996. "Autour Des Obligationes De Roger Swyneshed: La *Nova Responsio*." *Etudes Philosophiques* (3):341-360.

"D'après l'opinion reçue, les *Obligationes* de Roger Swyneshed, redigées entre 1330 et 1335, signalent deux nouvelles directions dans les débats sur les règles qu'on est obligé de suivre dans un certain type de dispute logique, la dispute obligationnelle (1). D'un côté, ils nous offrent une analyse des diverses formes de réflexivité beaucoup plus approfondie que celle de Gauthier Burley, dont les *Obligationes* de 1302 sont caractéristiques de la théorie standard (2). De l'autre côté, ils donnent une *nova responsio* sous la forme de deux règles assez surprenantes du point de vue de la logique: 1 /On peut nier une proposition conjonctive après avoir concédé ses deux parties. 2 /On peut concéder une proposition disjonctive avant de nier ses deux parties (3).

Récemment, Angel D'Ors, tout en acceptant l'originalité de Swyneshed à propos des formes de réflexivité, s'est proposé de détruire le mythe de la *nova responsio* de Swyneshed (4). Il prétend que, malgré les apparences, Swyneshed suivait Burley, et qu'il n'y avait qu'une théorie des obligationes durant le XIVe siècle (5).

D'Ors est surtout motivé par son incapacité de comprendre pourquoi Swyneshed aurait présenté une *nova responsio* aussi dépourvue de sens logique (6). Donc, au lieu de chercher une explication des deux règles, il cherche plutôt une explication du fait qu'on attribue ces règles à Swyneshed. Dans ses récents articles, il se concentre sur deux textes auxquels Spade, entre autres, a fait appel afin d'expliquer Swyneshed. Tout d'abord, il prétend que les *Obligationes* de Richard Lavenham (mort après 1399) (7) ont été mal comprises par ses récents lecteurs. Au lieu de

suivre la supposée *nova responsio* de Swyneshed, Lavenham s'intéresse à la différence entre le dialogue d'une dispute obligationnelle et le métadialogue dans lequel on discute les raisons pour lesquelles les réponses étaient ou bonnes ou mauvaises, et les règles auxquelles on aurait dû faire appel (8). En ce qui concerne Robert Fland, un autre Anglais qui a écrit entre 1335 et 1370 (9), D'Ors et son collaborateur, Miguel Garcia-Clavel, admettent qu'il parle d'une *nova responsio*, mais ils prétendent que Fland a inventé cette réponse à cause d'un malentendu, et que personne n'a jamais adopté cette réponse (10). Tout comme les lecteurs de Lavenham, Fland n'a pas réussi à comprendre que Swyneshed parle à deux niveaux, le niveau du dialogue de base, et le niveau du métadialogue.

L'hypothèse de la nature mythique de la *nova responsio* est audacieuse et provocatrice. Malheureusement, quand on la regarde de plus près, elle se révèle fausse, le fruit d'un malentendu de la part de D'Ors lui-même (11). Dans cet article, je vais expliquer pourquoi Fland n'a rien inventé, et pourquoi il est possible de considérer Lavenham comme un disciple de Swyneshed.

Mon article se divise en quatre parties. Premièrement, j'aborderai le problème des textes eux-mêmes. Je suis entièrement d'accord avec D'Ors quand il dit que le texte de Fland (qui existe dans un seul manuscrit) est souvent peu fiable, et qu'il y a plusieurs façons de lire le texte de Lavenham. En général, les textes qui traitent des *obligationes* ne sont pas faciles à comprendre. Il y a trop de détails que nous ignorons; les auteurs écrivaient trop vite, sans donner des explications en profondeur; les copistes y ont ajouté trop d'erreurs. C'est précisément à cause de ces problèmes qu'il faut s'appuyer sur une base textuelle aussi étendue que possible, sans se limiter à deux ou trois œuvres. Je montrerai qu'il y avait d'autres auteurs que Fland et Lavenham qui parlaient d'une *nova responsio*, et qui discutaient des deux règles de Swyneshed. Deuxièmement,

je donnerai un bref aperçu de la théorie standard des *obligationes*, et je ferai une comparaison entre cette théorie et celle de Swyneshed telle qu'elle est présentée par au moins dix auteurs, à part Fland et Lavenham. En troisième lieu, j'examinerai de plus près les définitions alternatives de la notion clef de propositions non pertinentes, et les différentes règles qui gouvernaient les réponses à ces propositions. Pour terminer, j'expliquerai le rapport entre les règles de Swyneshed et la théorie d'inférence que nous offre un auteur anonyme. C'est ici que l'on trouve enfin le raisonnement qui mena Swyneshed à adopter sa *nova responsio*." (pp. 341-343)

(...)

"Conclusion.

En somme, il faut accepter l'opinion reçue à propos de Swyneshed. Il y avait une *nova responsio* qui se basait sur une théorie d'inférence très restreinte. Malheureusement pour ceux qui aimeraient interpréter les *obligationes* en fonction des contre factuels ou des mondes possibles, cette théorie restreinte a ses racines dans un manque de compréhension des arguments que l'on retrouve chez Burley. Les enjeux étaient moins intéressants qu'on aurait voulu croire." (pp. 359-360)

(1) Paul Vincent Spade, Roger Swyneshed's *Obligationes*: Edition and Comments, *Archives d'histoire doctrinale et littéraire du Moyen Age*, 44 (1977), p. 243-285. Pour une bibliographie complète, voir E. J. Ashworth, *Obligationes* Treatises: A Catalogue of Manuscripts, Editions and Studies, *Bulletin de philosophie médiévale*, 36 (1994), p. 118-147.

(2) Romuald Green, *The Logical Treatise «De Obligationibus»: An Introduction with Critical Texts of William of Sherwood and Walter Burley*, dissertation présentée pour l'obtention du grade de docteur en philosophie, Université de Louvain, 1963.

(3) Swyneshed, p. 257 §32: « Propter concessionem partium copulativae non est copulativa concedenda nec propter

concessionem disjunctivae est aliqua pars ejus concedenda
».

(4) Angel D'Ors, Sobre las Obligationes de Richard Lavenham, *Archives d'histoire doctrinale et littéraire du Moyen Age*, 58 (1991), p. 253-278 (pour l'opinion reçue, voir p. 255); Angel D'Ors, Sortes non currit vel Sortes movetur (Roger Swyneshed, Obligationes, § 137-138), *Archives d'histoire doctrinale et littéraire du Moyen Age*, 60 (1993), p. 165-172 (pour l'opinion reçue, voir p. 165); Angel d'Ors y Manuel Garcla-Clavel, Sobre las Obligationes de Robert Fland, Antiqua et nova responsio, *Revista de Filosofia*, 7 (1994), p. 51-88 (pour l'opinion reçue, voir p. 51).

(5) Ici, je laisse de côté les problèmes présentés par les *Sophismata* de Richard Kilvington et le texte anonyme de Merton College ms. 306. Pour discussion et références, voir Mikko Yrjönsuuri, Obligationes, 14th Century Logic of Disputational Duties, *Acta Philosophica Fennica*, vol. 55 (Helsinki, Societas Philosophica Fennica, 1994), un excellent guide aux obligationes jusqu'en 1335. Yrjönsuuri pense que le texte anonyme date de 1321 environ, et que son auteur critique Burley plutôt que Swyneshed: voir p. 77.

(6) D'Ors y Garcia-Clavel, op. cit., p. 55: «... la nova responsio en la forma en que Fland nos la presenta: no parece obedecer a ninguna razón, no parece que pueda encontrarse una razón que explique tal propuesta de cambio », cf. p. 56.

(7) Paul Vincent Spade, *Richard Lavenham's Obligationes*. (Edition and Comments by Paul Vincent Spade), *Rivista critica di storia della filosofia*, 33 (1978), p. 225-242.

(8) D'Ors, Sobre las Obligationes de Richard Lavenham, p. 274-278; D'Ors y Garcia-Clavel, op. cit., p. 84-85, 87.

(9) Paul Vincent Spade, Robert Fland's Obligationes. An Edition, *Mediaeval Studies*, 42 (1980), p. 41-60.

(10) D'Ors y Garcia-Clavel, op. cit., p. 53: «... la obra de Fland no puede servir como guía para la interpretación del

auténtico sentido de la doctrina de Swyneshed ; o lo que es lo mismo, que la nova responsio de la que nos habla Fland, como tal, no ha existido nunca, es decir, que no se corresponde con ninguna doctrina que alguien, sea éste quien sea, haya alguna vez realmente defendido, sino que es simplemente el fruto de una mala interpretación de la doctrina cuyo mis ilustre représentant es Swyneshed», cf. p. 69.

(11) Bien que je ne sois pas d'accord avec D'Ors en ce qui concerne Swyneshed, j'ai néanmoins beaucoup appris de lui et de ses œuvres.

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4. Fourth: Articles from 1997 to 2017

ARTICLES

1. Ashworth, Earline Jennifer. 1997. "Petrus Fonseca on Objective Concepts and the Analogy of Being." In *Logic and the Workings of the Mind. The Logic of Ideas and Faculty Psychology in Early Modern Philosophy*, edited by Easton, Patricia A., 47-63. Atascadero: Ridgeview.
"Petrus Fonseca was a Portuguese Jesuit who lived from 1528 to 1599. He was one of those responsible for drawing up the Jesuit *Ratio Studiorum* which set the curriculum for Jesuit schools across Europe, and he was also responsible for initiating the production of the Coimbra commentaries on Aristotle, or Conimbricenses, which served as texts for

many schools and universities in the seventeenth century.(1) He was himself the author of two popular texts, an introduction to logic, and a commentary on Aristotle's *Metaphysics*. (2) His logic text was one of two alternatives prescribed by the *Ratio Studiorum* of 1599, and may have been used at La Flèche; (3) his *Metaphysics* commentary was used at many Jesuit schools, and may also have been used at La Flèche. (4) In short, Fonseca was a leading figure in the Scholastic Aristotelian tradition of the late sixteenth century, a tradition which lies behind many of the developments in early modern philosophy, and which in many ways is more important than the humanist tradition represented by Petrus Ramus. (5)

I have chosen to discuss Fonseca on objective concepts and the analogy of being both because an examination of these issues will help us to understand how logic came to be bound up with the philosophy of mind and because the history of how these issues were treated helps solve a small problem about Descartes's sources. My paper has four parts. I shall begin by giving a historical outline of treatments of analogy and their relevance to Descartes. (6) Secondly, I shall discuss late medieval theories of signification, particularly as they appear in Fonseca, in order to show how logicians turned away from spoken language to inner, mental language. Thirdly, I shall explain how it was that analogy, as a theory of one kind of language use, was particularly bound up with the discussion of concepts. Finally, I shall look at the distinctions Fonseca made while discussing the concepts associated with analogical terms.

1 Historical Outline: From Scotus to Descartes

In *Meditation 3*, Descartes uses a distinction between formal and objective reality with respect to ideas in order to prove the existence of God. In the secondary literature this distinction is invariably linked with a distinction between formal and objective concepts found in Suarez, whose *Metaphysical Disputations* (published in 1597) was cited by

Descartes on one occasion. (7) However, as the literature acknowledges, it is not clear where the distinction originated, or how Descartes came to know of it. The earliest paper I know of, published by Dalbiez in 1929, looked in two directions. (8) Dalbiez quite accurately traced the distinction back to Duns Scotus and his discussion of the kind of being creatures had in God's mind prior to creation, (9) but Dalbiez thought it improbable that Descartes would have read Duns Scotus. He then suggested that the notion is more likely to have come from Suarez and another near-contemporary, Vasquez, both of whom used the notion in a theological dispute about the views of the fourteenth-century theologian Durandus of Saint Pourçain (d. 1334) on the nature of truth. (10) Little new light has been shed since 1929. (11) In recent papers, Norman Wells still privileges both Suarez and the debate about Scotus on divine ideas. (12) In a paper entitled "Meaning and Objective Being: Descartes and His Sources," Calvin Normore first discusses Duns Scotus and William of Alnwick on objective being in the context of God's ideas; and he then shows how the notion was used by Peter Aureol, William Ockham, and Walter Chatton in a variety of contexts. However, Normore acknowledges that there is a gap between about 1340 and the beginning of the seventeenth century. In his conclusion, he writes that his examination "suggests a Descartes firmly rooted in a Scholastic tradition which is deeply in debt to Duns Scotus and closely allied with fourteenth-century developments in epistemology and in the theory of meaning. This makes the problem of Descartes' immediate sources and the question of his originality even more puzzling." (13) My own recent work on analogy as a theory of one kind of language use shows that at least one historical path between Scotus and the early seventeenth century can be traced through the Thomistic tradition, though we must remember that late medieval and Renaissance Thomism embraced a variety of different approaches and doctrines. What

Thomists had in common was a kind of moderate realism with respect to common natures that differentiated them from the nominalists on the one hand and the Scotists on the other. Nonetheless, Thomists embraced many theses put forward by nominalists, especially Pierre d'Ailly (d. 1420/1); and much of their agenda had been set by Duns Scotus rather than by Aquinas himself." (pp. 47-48)

(...)

"Conclusion.

I don't want to claim that I can point to precise passages in Fonseca which have influenced Descartes, or Mersenne, or Arnauld, or any other early modern philosopher. On the other hand, I do want to claim that this is the style of discussion, and these are the types of distinctions, with which early modern philosophers, at least up to and including Locke, would have been familiar through the scholastic texts by which they were educated." (p. 63)

(1) On Fonseca's life and works, see Charles H. Lohr, *Latin Aristotle Commentaries: II. Renaissance Authors* (Florence: Olschki, 1988), pp. 150-51; and John P. Doyle, "Peter Fonseca," *Routledge Encyclopedia of Philosophy*, E. J. Craig, ed. (Routledge: 1998).

(2) Pedro da Fonseca, *Instituições Dialécticas. Institutionum Dialecticarum Libri Octo*, 2 volumes, Joaquim Ferreira Gomes, ed. and trans. (Coimbra: Universidade de Coimbra, 1964), cited as *Instit. Dial.*, Petrus Fonseca, *Commentariorum In Metaphysicorum Aristotelis Stagiritae Libros* (2 volumes), (Cologne, 1615; reprinted Hildesheim: Georg Olms, 1964), cited as *In Met.* Volume 1 contains Tomus I-II and has numbered columns; volume 2 contains Tomus III-IV, and has numbered pages.

(3) Timothy J. Cronin, *Objective Being in Descartes and in Suarez* (Roma: Gregorian University Press, 1966), p. 34

(4) Cronin suggests, pp. 32-33, that Fonseca's commentary was normally used in Jesuit schools.

- (5) Useful background is provided by Peter Dear, *Mersenne and the Learning of the Schools* (Ithaca and London: Cornell University Press, 1988). However, Dear overemphasizes the influence of Ramist-style humanism on Fonseca's logic: see pp. 19-21. For an alternative assessment of Fonseca, see E. J. Ashworth, "Changes in Logic Textbooks from 1500 to 1650: The New Aristotelianism," *Aristotelismus und Renaissance: In Memoriam Charles B. Schmitt*, Eckhard Kessler, Charles H. Lohr and Walter Spam, eds. (Wiesbaden: Otto Harrassowitz, 1988), pp. 82-84.
- (6) Jean-Luc Marion, *Sur la théologie blanche de Descartes* (Paris: Presses Universitaires de France, 1981), devotes much of his book to the theme of Descartes's reaction to Suárez's doctrine of the analogy of being. In his discussion, he notes the relation between the analogy of being and objective concepts (e. g., p. 119), and he also mentions Fonseca briefly (p. 123). However, the nature and scope of our investigations is quite different.
- (7) Descartes, *Replies* IV, AT VII 235. For discussion see Roger Ariew, "Descartes and scholasticism: the intellectual background to Descartes' thought," *The Cambridge Companion to Descartes*, John Cottingham, ed. (Cambridge: Cambridge University Press, 1992), pp. 58-90, esp. p. 79.
- (8) R. Dalbiez, "Les sources scolastiques de la théorie cartésienne de l'être objectif à propos du 'Descartes' de M. Gilson," *Revue d'histoire de la philosophie* 3 (1929), pp. 464-472.
- (9) For Fonseca on God's ideas, including reference to formal and objective concepts, see *In Met.*, III, pp. 280b-296b, esp. 286a-288b (Lib. VII, cap. VIII, q. 2).
- (10) Dalbiez, pp. 468-470.
- (11) Cronin, p. 206, opts for Scotus and Suarez as Descartes's sources. One useful source is Gabriel Nuchelmans, *Judgment and Proposition from Descartes to*

Kant (Amsterdam, Oxford, New York: North-Holland Publishing Company, 1983). He traces the early history of the phrases “esse obiective” and “conceptus obiectivus” in Hervaeus, Aureol, and Durandus, pp. 17-26. In discussing Descartes, he says (p. 41), “it remains difficult to single out any individual sources. His debt is of a very general nature and could have come from any work belonging to a certain climate of thought. There can be little doubt, however, that one of the main determinants of this climate was the objective-existence theory as it had been developed by such thinkers as Durandus and Aureolus.”

(12) Norman J. Wells, “Objective Reality of Ideas in Descartes, Caterus, and Suarez,” *Journal of the History of Philosophy* 28 (1990), pp. 33-61, esp. pp. 49-50. See also Norman J. Wells, “Objective Being: Descartes and His Sources,” *The Modern Schoolman* 45 (1967), pp. 49-61; id., “Objective Reality of Ideas in Amauld, Descartes, and Suàrez,” *The Great Amauld and Some of His Philosophical Correspondents*, Elmar J. Kremer, ed. (Toronto, Buffalo, London: University of Toronto Press, 1994), pp. 138-183.

(13) Calvin Normore, “Meaning and Objective Being: Descartes and His Sources,” *Essays on Descartes’ “Meditations,”* Amélie Oksenberg Rorty, ed. (Berkeley, Los Angeles, London: University of California Press, 1986), pp. 223-241, esp. p. 240.

2. ———. 1997. “L’analogie De L’être Et Les Homonymes. *Categories*, 1 Dans La “*Guide De L’étudiant*”.” In *L’enseignement De La Philosophie Au Xiii Siècle. Autour Du “Guide De L’étudiant” Du Ms. Ripoll 109. Actes Du Colloque International*, edited by Lafleur, Claude and Carrier, Joanne, 281-295. Turnhout: Brepols.

“C’est par trois définitions que s’ouvrent les *Catégories* d’Aristote (1). Dans la traduction d’Yvan Pelletier, Aristote écrit: «On dit homonymes les êtres dont le nom seul est commun, tandis que la définition de l’essence signifiée par ce nom est différente. Par exemple, l’animal, c’est à la fois

l'homme et son image peinte [...]. Par ailleurs, on dit synonymes les êtres dont le nom est commun et pour lesquels, de plus, la définition de l'essence signifiée par ce nom est la même. Par exemple, l'animal, c'est aussi bien l'homme que le bœuf [...]. Enfin, on dit paronymes tous les êtres qui, tout en différant d'un autre par leur cas, reçoivent leur appellation d'après son nom. Ainsi dénomme-t-on, d'après la grammaire, le grammairien et, d'après le courage, le courageux » (2).

Ces trois définitions courtes et sèches nous donnent un point de départ pour examiner les rapports entre la théorie des catégories et la théorie de l'analogie, ou plutôt les théories de l'analogie, chez les logiciens du XIII^e siècle. J'ai dit «les théories de l'analogie», parce qu'il y en a au moins deux. D'un côté, il y a l'analogie comme théorie du langage; d'un autre côté, il y a l'analogie comme théorie métaphysique des rapports hiérarchiques entre substance et accident, Dieu et créature. Dans son analyse approfondie des sources gréco-arabes de la théorie médiévale de l'analogie de l'être, Alain de Libéra parle de divers textes et problématiques, soit sémantiques, soit théologiques, qui sont à l'origine de cette théorie. Pourtant, en soulignant l'importance primordiale des textes aristotéliens, il dit: «La théorie médiévale de l'analogie de l'être est principalement issue de la rencontre de *Cat.*, I, 1, *Eth. Nic.*, 1, 4 et *Métaph.*, IV, 2», pour ajouter ensuite : « Avant cette synthèse, la notion d'analogie a été utilisée en dehors de toute préoccupation métaphysique, comme concept sémantique lié à l'interprétation des deux problèmes logiques standards de l'homonymie: l'élucidation de la distinction entre homonymes et synonymes dans *Cat.*, I, 1 ; l'analyse des mécanismes sémantiques de la *fallacia aequivocationis* dans *Ref. soph.*, 17» (3).

De Libéra a raison quand il dit que l'on trouve l'analogie comme théorie du langage ou théorie sémantique dans les manuels de logique plutôt que l'analogie de l'être, et que,

pour comprendre l'analogie de l'être, il faut faire tout particulièrement attention à la *Métaphysique* d'Aristote et à ses commentateurs arabes. Néanmoins, pour des raisons que j'essaierai d'expliquer dans ce travail, il y a des liens étroits entre les *Catégories* et l'étude de l'être comme tel, et il me semble que dans le «Guide de l'étudiant» et dans les autres sources contemporaines que j'ai examinées, nous trouvons la préhistoire de l'analogie de l'être, une préhistoire fondée sur une lecture strictement ontologique des *Catégories* d'Aristote. En même temps, étant donné les problèmes causés par une telle lecture, on peut très facilement comprendre pourquoi les logiciens de la fin du XIIIe siècle et du début du XIVe siècle préféraient, soit une interprétation linguistique, soit une interprétation conceptualiste des catégories elles-mêmes et des notions liées d'analogie et d'homonymie.

Les textes sur lesquels repose mon interprétation sont tout d'abord le «Guide de l'étudiant» et le *De communibus artium liberalium*, édités par Claude Lafleur avec la collaboration de Joanne Carrier (4). À part les commentaires sur les *Catégories* de Boèce et du Pseudo-Augustin (5), j'utilise le commentaire de Jean le Page, écrit entre 1231 et 1235, le commentaire de Robert Kilwardby, écrit vers 1240, et les *Tractatus* écrits entre 1230 et 1245 (6). Tous ces textes sont à peu près contemporains du «Guide de l'étudiant». En plus, j'utilise les *Summule dialectices* de Roger Bacon, écrites vers 1250, la *Summa* de Lambert de Lagny, dont la première rédaction date de 1250-1255, ainsi que le commentaire sur les *Catégories* d'Albert le Grand, écrit vers 1260 (7). Ces trois textes sont à peu près contemporains du *De communibus artium liberalium*. Enfin, pour donner une idée des développements doctrinaux dans la dernière partie du XIIIe siècle, je ferai référence aux commentaires de Pierre d'Auvergne, de l'Anonyme de Madrid, de Simon de Faversham et de Martin de Dacie, tous écrits entre 1270 et 1300 (8).

Mon étude se divise en trois parties. En premier lieu, comme introduction à mon thème principal, je donnerai un bref aperçu de l'analogie dans les manuels de logique et dans les commentaires sur Aristote. Ensuite, je traiterai du sujet de la logique aristotélicienne en général et du sujet des Catégories en particulier. Mon but ici est de montrer l'importance de l'être, surtout dans le contexte de deux questions: y a-t-il une science unique des catégories, et quels sont les rapports entre la logique et la métaphysique ? Pour terminer, j'aborderai les rapports entre homonymes, synonymes et paronymes, interprétés comme des réalités et non pas comme des mots, dans le contexte de la question: pourquoi Aristote a-t-il placé les homonymes avant les synonymes et les paronymes?" (pp. 281-283)

(...)

"Avant de terminer, je voudrais examiner les paronymes de plus près. Rappelons la définition aristotélicienne: «on dit paronymes tous les êtres qui, tout en différant d'un autre par leur cas, reçoivent leur appellation d'après son nom». L'expression «par leur cas» («solo casu» en latin) suggère une variation de forme purement linguistique, mais l'auteur du «Guide de l'étudiant» réussit à trouver une interprétation ontologique. Il dit que «solo casu» veut dire «par une inclinaison ou une contraction ou une agrégation relative à un sujet» («inclinatione uel contractione uel concretione ad subiectum», § 539), et on peut lier ce passage à celui dans la section sur la grammaire (§ 224) où il dit que le logicien s'occupe de la relation entre les accidents et la substance («logicus intendit de compara-tione quam habent accidentia ad substantiam»). À première vue, Kilwardby semble donner une interprétation voisine de celle de notre auteur. Il dit que les termes dénominatifs signifient cum casu car ils signifient un accident en fonction de sa relation à un sujet, et que le mot principal signifie sine casu, c'est-à-dire sans une relation au sujet (61). Cependant, quand il nous offre ses précisions sur l'expression « sola

cadencia ad materiam a principali» comme explication de «différant solo casu», il parle de la matière des *voces*. Roger Bacon nous offre trois interprétations de l'expression «solo casu», dont deux sont linguistiques (62). En premier lieu, le cas peut être une simple variation de forme, et on trouve cette interprétation chez Albert le Grand (63). En deuxième lieu, le cas peut être une variation de forme relevant de la dérivation lexicale, et ici il emploie l'expression «sola cadentia unius ab alio, sive formatione». On trouve cette interprétation chez Lambert de Lagny (64). En troisième lieu, le cas peut être la chute d'une forme vers la matière et le sujet, et ici il emploie l'expression «sola cadentia formae ad materiam et ad subiectum». Cette dernière interprétation est la plus proche de celle de notre auteur." (pp. 294-295) Voilà donc un bref aperçu de la façon dont l'auteur du «Guide de Vétudiant» et ses contemporains traitent de la problématique de l'être dans le contexte des Catégories. Je suis persuadée qu'une étude plus approfondie et plus longue que la mienne nous aidera à mieux comprendre l'apparition de l'analogie de l'être chez les philosophes et théologiens du XIII^e siècle.

(1) Aristote, *Catégories*, I (la 1-15).

(2) *Les Attributions (Catégories). Le texte aristotélicien et les prolégomènes d'Ammonios d'Hermeias*, présentés, traduits et annotés par Y. Pelletier, Montréal:

Bellarmin/Paris: Les Belles Lettres, 1983, p. 23 (Collection d'études anciennes publiée sous le patronage de l'Association Guillaume Budé. Collection Noësis publiée par le Laboratoire de recherches sur la pensée antique d'Ottawa).

(3) A. De Libera, Les sources gréco-arabes de la théorie médiévale de l'analogie de l'être, dans *Les études philosophiques* 3/4 (1989), p. 321.

(4) Cl. Lafleur, avec la collaboration de J. Carrier, *Le « Guide de l'étudiant » d'un maître anonyme de la Faculté des arts de Paris au XIII^e siècle. Édition critique provisoire*

du ms. Barcelona, Arxiu de la Corona d'Aragô, Ripoll 109, fol. 134ra-158va, Québec, 1992 (Publications du Laboratoire de philosophie ancienne et médiévale de la Faculté de philosophie de l'Université Laval, I): j'utilise ici cette prépublication dont la division du document en paragraphes demeurera inchangée dans l'édition révisée à paraître chez Brepols, dans la *Continuatio mediaevalis* du *Corpus Christianorum*; Id., *Un instrument de révision destiné aux candidats à la licence de la Faculté des arts de Paris, le «De communibus artium liberalium» (vers 1250?)*, dans *Documenti e studi sulla tradizione filosofica medievale* 5, 3 (1994), pp. 129-203.

(5) Boèce, *In Categorias Aristotelis libri quatuor*, PL 64, col. 159-294. Pour les *Categoriae decem* du Pseudo-Augustin, longtemps attribuées à Augustin mais aujourd'hui éditées sous le titre de *Paraphrasis Themistiana*, voir *Categoriae vel Praedicamenta, translatio Boethii [...]* *Pseudo-Augustini Paraphrasis Themistiana*, éd. L. Minio-Paluello, Bruges-Paris, Desclée de Brouwer, 1961, pp. 133-175 (AL, I, 1-5).

(6) Pour Jean le Page, avec extraits de son texte, voir E. Franceschini, *Giovanni Pigo: le sue «Rationes super Predicamenta Aristotelis» e la loro posizione nel movimento aristotelico del secolo XIII*, dans *Sophia* 2 (1934), pp. 172-182, 329-350, 476-486. Pour une discussion de Robert Kilwardby avec une édition partielle (pp. 367-378) de ses *Notule super librum Predicamentorum*, voir P.O. Lewry, *Robert Kilwardby's Writings on the «Logica Vetus» Studied with Regard to Their Teaching and Method*, Oxford, 1978 (thèse inédite). Pierre d'Espagne (Petrus Hispanus Portugaliensis), *Tractatus Called afterwards Summule Logicales*, éd. L.M. De Rijk, Assen, Van Gorcum, 1972 (Philosophical Texts and Studies, XXII).

(7) Pour l'édition de l'ouvrage de Roger Bacon, voir A. de Libéra, *Les «Summulae dialectices» de Roger Bacon: I - II. De termino, De enuntiatione*, dans *AHDLMA* 53 (1986), pp.

139-289; Lambert d'Auxerre (= Lambert de Lagny), *Logica (Summa Lamberti)*, éd. Fr. Alessio, Firenze, La Nuova Italia Editrice, 1971; Albert Le Grand, *Liber de praedicamentis*, dans *B. Alberti Magni, Ratisbonensis episcopi, Ordinis Praedicatorum, Opera omnia*, éd. A. Borgnet, Paris, Vivès, 1890, t. I, pp. 149-304.

(8) Pour Pierre D'Auvergne, voir R. Andrews, *Petrus de Alvernia, « Quaestiones super Praedicamentis »: An Edition*, dans CIMAGL 55 (1987), pp. 3-84; Martin de Dacie, *Quaestiones super librum Praedicatorum*, dans *Martini de Dacia Opera*, éd. H. Roos, Hauniae, Gad, 1961, pp. 153-231 (Corpus Philosophorum Danicorum Medii Aevi, II); Simon de Faversham, *Quaestiones super libro Praedicatorum*, dans *Magistri Simonis Anglici sive de Faverisham Opera omnia, volumen primum: Opera logica*, t. Ior, éd. P. Mazarella, Padova, CEDAM, 1957, pp. 69-148 ; pour l'Anonyme de Madrid voir R. Andrews, *Anonymus Matritensis, « Quaestiones super librum Praedicatorum »: An Edition*, dans CIMAGL 56 (1988), pp. 117-192.

(61) Robert Kilwardby, *Notule super librum Predicatorum*, éd. Lewry, pp. 376-377. Cf. Pierre d'Espagne, *Tractatus, III*, 1, éd. De Rijk, p. 27,1. 3-4: «Differunt solo casu, idest sola cadentia que est a parte rei [...]».

(62) Roger Bacon, *Summule dialectices*, 1,2, éd. De Libera, pp. 190-191.

(63) Albert le Grand, *Liber de praedicamentis*, tract. I, cap. 4, éd. Borgnet, p. 158a: «Et quod subdicatur solo casu differentia, dicitur hic casus quaecumque inflexio nominis secundum finem nominis sive dictionis».

(64) Lambert d'Auxerre (Lambert de Lagny), *Logica*, III (*De predicamentis*), éd. Alessio, p. 64: «Differant enim solo casu, id est sola cadentia, quia unum cadit ab alio, id est derivatur, ut a grammatica grammaticus et sic de aliis». Cf. Ibid., III (*De predicamentis*), p. 66.

3. ———. 1998. "Analogy and Equivocation in Thomas Sutton O.P." In *Vestigia, Imagines, Verba. Semiotics and Logic in Medieval Theological Texts (Xiiith-Xivth Century)*. *Acts of the Xith Symposium on Medieval Logic and Semantics*. San Marino, 24-28 May 1994, edited by Marmo, Costantino, 289-303. Turnhout: Brepols.

"One of the most obvious places where theology and logic meet is in the discussion of the divine names. From the 1240s on, the standard way for theologians to handle the problem of religious language involved an appeal to the theory of analogy, (1) a theory which was worked out in the logic textbooks in the context of equivocal and univocal terms (cfr. Ashworth, "Analogy and Equivocation in Thirteenth-Century Logic. Aquinas in Context", *Mediaeval Studies* 54, 1992, pp. 94-135). The problem of religious language can be put roughly like this. Words such as 'good', 'just', and 'wise' do not seem to have exactly the same sense when used of God as they do when used of human beings. That is, they are not univocal. On the other hand, they cannot be used with a completely different sense if religious discourse is to have any point. That is, they cannot be equivocal. If they are neither univocal nor equivocal, they must be used with some related sense, that is, analogically. But what is the appropriate model for analogical usage? If the model is that of the word *sanum* (healthy), which can be applied in an extended sense to a diet on the grounds that the diet is causally related to the animal which is called healthy in the primary sense, then we have what Cajetan later called the analogy of attribution. (2) On the other hand, if the model is that of the word *principium* (principle), which is applied both to a point and to a source on the grounds that the source is related to a river in the way that a point is related to a line, we have what Cajetan later called the analogy of proportionality. The first type of analogy, the analogy of attribution, involves just one relationship whereas the second type, the analogy of

proportionality, involves a comparison between two relationships. As is well known, Thomas Aquinas appealed to the analogy of proportionality in *De veritate* q. 2, a. 11, but more usually appealed to the analogy of attribution. Cajetan, on the other hand, claimed that the analogy of proportionality was the only true analogy, and that it should be employed in metaphysics and theology.

Thomas Sutton, an Oxford Dominican who lived from about 1250 to 1315 or 1320, has attracted some attention because he employed the analogy of proportionality in his *Quaestiones ordinariae*, written in the first decade of the fourteenth century. (3) Insofar as he did so, he was described by Montagnes (1963, p. 124) as a precursor of Cajetan who moved away from Aquinas. Schneider (1977), in his introduction to the *Quaestiones* tried to modify Montagnes's judgment, by suggesting that there was no real break with Aquinas; (4) but none of those who have discussed Sutton in the literature have done other than suggest that he appealed to analogy of proportionality to resolve problems of linguistic use, whereas the analogy of attribution had to do with those relations of things that ground our language. In an early article on Sutton, Przedziecki (1959) presented Question 32 as showing that *ens* is an analogical term, but turned to Question 33's account of proportionality for an explanation of what type of analogy was involved, completely ignoring the discussion of attribution in the earlier question. (5) In a recent book, Riva (1989) noted the presence of the two types of analogy in Sutton's work, but argued that the tension between them is resolved by the distinction between words and things. (6) He claims that for Sutton proportionality has to do with terms, while attribution concerns the relations among things on which talk about proportionality is based. In this paper I intend to look at the details of Sutton's theory of analogy in relation both to the authors with whom he is debating, and to the basic logical distinctions he employed.

In the first section I shall give a brief outline of what the logicians had to say. In the second section I shall discuss the word *ens*, beginning with three views that Sutton rejected before going on to examine his own views about *ens* in metaphysics in theology. In the final section, I shall consider Sutton's discussion of the divine names proper, namely perfection words such as 'good', 'wise' and 'just'. I shall show that although Sutton appeals to proportionality in this last case, he uses the analogy of attribution in his discussion of how the word *ens* is applied to substance and accident. Moreover, he is just as much concerned with language in the one case as he is in the other. As a result his overall view is a lot more flexible than Cajetan's." (pp. 289-290)

(...)

"Despite Montagnes's description of Sutton as a precursor of Cajetan, I think that he is in many ways quite different. While holding that the analogy of proportionality is analogy in the strictest sense, he makes no attempt to apply it to metaphysical problems in general or to link it with the distinction between intrinsic and extrinsic denomination. The real importance of the distinction between the analogy of attribution and the analogy of proportion is not that one is in fact linguistically more proper than the other; nor is it that one deals with intrinsic denomination whereas the other deals with extrinsic denomination, for both involve at least some cases of intrinsic denomination. Rather, the real importance of the distinction has to do with the areas of discourse in which the two types of analogy function. The analogy of attribution works at the level of (non-theological) metaphysics and the discussion of created beings; the analogy of proportionality is necessary in theology given the doctrine that an infinite God creates beings which, while finite and infinitely distant from their creator, nonetheless participate in his being and goodness, imitating him as far as they are able." (p. 298)

(1) See, e.g., Alexander of Hales, *Summa theologica*, 4 vols, Ad Claras Aquas (Quaracchi), Collegium S. Bonaventurae, 1924-1948, I, p. 544b: “nomina [...] ut iustus, bonus et huiusmodi, non dicuntur aequivoce nec univoce, quia non penitus secundum aliam rationem nec tamen secundum eandem, sed dicuntur analogice secundum prius et posterius”. (This passage is continued in note 31.)

(2) For Cajetan, whose *De nominum analogia* was published in 1498, see Bruno Pinchard, *Métaphysique et sémantique. Autour de Cajetan*, Etude [texte] et traduction du “De nominum analogia”, Paris, Vrin, 1987.

(3) For recent references concerning Sutton’s life and works, see Alessandro D. Conti, “La composizione metafisica dell’ente finito corporeo nell’ontologia di Sutton”, *Documenti e studi sulla tradizione filosofica medievale* 2/2, 1991, pp. 317-60 (317-18, note 1). It should be noted that Sutton does not use the word *proportionalitas*, but speaks of *aequivoca secundum proportionem*, see, e.g., p. 918.247.

(4) Cf. Johannes Schneider, “Introduction”, in Thomas Sutton, *Quaestiones ordinariae*, Bayerische Akademie der Wissenschaften 1977, pp. 241*-262*, especially pp. 257*-258* and p. 261*.

(5) Przewdziecki, Thomas of Sutton’s critique on the doctrine of univocity”, in *An Etienne Gilson tribute*, ed. C. J. O’Neil, Milwaukee, Marquette University Press 1959, pp. 189-208. In this article, Schneider’s Question 32 A is referred to as Question 33 and Schneider’s Question 33 is referred to as Question 34.

4. ———. 1998. “Aquinas on Significant Utterance: Interjection, Blasphemy, Prayer.” In *Aquinas’s Moral Theory: Essays in Honor of Norman Kretzmann*, edited by MacDonald, Scott and Stump, Eleonore, 207-234. Ithaca: Cornell University Press.

“It may seem perverse to turn to Aquinas’s moral philosophy for light on his philosophy of language, but I argue that his study of human actions forced him to modify

the intellectualism prevalent in much thirteenth-century logic and grammar. This intellectualism had three components. First, it privileged the notion of language as a rational, rule-governed system which could be studied in isolation from context and speaker intention.(2) Second, it focused on propositions as the linguistic units which conveyed the information necessary for *scientia* and rejected other forms of discourse as irrelevant. Third, it described individual words as the signs of concepts and ignored utterances which express passions of one sort and another. These components, particularly the second and third, do indeed characterize Aquinas's considered approach to language as expressed particularly in his commentary on Aristotle's *De interpretatione*. Nonetheless, his recognition that human beings are animals with passions, together with his recognition that utterances are themselves a kind of action subject to moral assessment, forced him to take a different direction in other places.(3)

I proceed as follows. In sections 1 and 2, I set forth the intellectualist components of Aquinas's theory, paying particular attention to the manifestation of truth and to the senses in which conventionally significant utterances could also be said to be naturally significant. In sections 3, 4, and 5, I explore the relationships between animal noises and human utterances, paying particular attention to the role of the imagination and to interjections. In sections 6 and 7, I consider the role of human passions and human intentions in the understanding and production of conventional utterances, especially sinful ones. In sections 8 and 9, I look at two aspects of language production which can serve to mitigate sin: slips of the tongue, and linguistic incontinence, or breaking out into ill-considered words. In the last section, I turn to the situation in which we recite and appropriate the words of others, particularly in prayer. Throughout, I examine not only Aquinas's own doctrines but also those of

grammarians and logicians contemporary with him." (pp. 207-208)

(2) For discussion of this approach in the *modistae*, and for full information about grammarians who adopted an alternative approach, which she has dubbed intentionalist because of its focus on the *intentio proferentis*, see the papers by Irène Rosier cited throughout, all of which contain further references. See esp. Irène Rosier. "La distinction entre *actus exercitus* et *actus significatus* dans les sophismes grammaticaux du MS BN lat. 16618 et autres textes apparentés," in *Medieval Logic and Grammar*, ed. Stephen Read (Dordrecht: Kluwer Academic Publishers, 1992}, pp. 257-59; and her book (published after this paper was written), *La parole comme acte: Sur la grammaire et la sémantique au xiii^e siècle* (Paris: J. Vrin, 1994). Rosier's work is particularly important for its demonstration that the modistic paradigm does not apply to much thirteenth-century grammar. I would like to take this opportunity of thanking Irène Rosier for the generous way in which she has shared her as yet unpublished research with me; this essay owes much to her work.

(3) Rosier has shown that in his discussion of the sacraments Aquinas was far closer to the intentionalist grammarians than he was to the *modistae*. See Irène Rosier, "Signes et sacrements: Thomas d'Aquin et la grammaire spéculative", *Revue des sciences philosophiques et théologiques* 74 (1990): 431-32. She writes (p. 394): "Les particularités linguistiques des formules sacramentaires, et du sacrement comme signe non seulement cognitif, mais opératif, l'importance accordée à l'intention du locuteur et du récepteur, la conjonction de ces divers éléments dans un acte à chaque fois singulier, nous situent d'emblée dans la dimension 'pragmatique' du langage, développée, à la même époque, en ce milieu du XIII^e siècle, par les grammairiens 'intentionalistes.'" Both here and later (p. 433) she speaks of the encounter between grammarians and theologians, but

she refuses to speculate about whose influence was primary (pp. 432-33).

5. ———. 1998. "Antonius Rubius on Objective Being and Analogy: One of the Routes from Early Fourteenth-Century Discussions to Descartes's *Third Meditation*." In *Meetings of the Minds. The Relation between Medieval and Classical Modern European Philosophy*, edited by Brown, Stephen F., 43-62. Turnhout: Brepols.

"In this paper I shall use Rubius's tract on analogy to show how a rich medieval tradition survived into the seventeenth century and to shed some light on the problem of Descartes's sources for the notion of an idea's objective reality. I shall proceed as follows. First, I shall state the problem as it has been set out in recent secondary literature. Second, I shall trace the distinction between formal and objective concepts from the early fourteenth century to the early seventeenth century in the context of the discussion of analogical terms. Third, I shall examine the analogical use of terms as it was presented by Rubius. Fourth, I shall explain why a theory of language use and a theory of concepts came to be linked together. Finally, I shall discuss what Rubius had to say about formal and objective concepts, and I shall suggest a relationship between this account and Descartes's own attitude towards mental contents and simple natures."

6. ———. 1999. "Text-Books: A Case Study - Logic." In *The Cambridge History of the Book in Britain (Vol. 3)*, edited by Trapp, Joseph Burney and Hellinga, Lotte, 380-386. Cambridge: Cambridge University Press.

"This book covers the years 1400 to 1557. In such a long period, we would expect great changes in the logic text-books used at Oxford and Cambridge. Indeed, there were great changes, but their timing is somewhat unexpected. If one considers just books written by Englishmen and copied or printed in England, then there is hardly any change at all between 1400 and 1530, the year in which the last surviving edition of the compilation text-book known as *Libellus*

Sophistarum was printed. A period of fifteen years follows in which no surviving logic text was either written or printed, and then suddenly in 1545 we are confronted with the *Dialectica* of John Seton, a work which was to go through fourteen editions by the end of the sixteenth century, and which represents a completely different type of logic.⁽¹⁾ In what follows, I shall focus on the *fortuna* of just one type of logic text in use between 1400 and 1530, namely the treatises devoted to *obligationes*, or the rules prescribing what one was obliged to accept and reject in a certain kind of logical disputation.

It is necessary first to consider the place of logic in the curriculum and the type of instruction which was offered, then to say something about fourteenth-century logicians and the *obligationes* texts used in the fifteenth century, and finally to examine the *Libelli Sophistarum* and other early printed texts in relation to fifteenth-century manuscript collections." (p. 380)

(1) A useful chronological list of logic books printed in England before 1620 is in Schmitt 1983b [*John Case and Aristotelianism in Renaissance England*, Kingston and Montreal] pp. 225-9. For English logic during the sixteenth century: Ashworth 1985b [*Introduction* to Robert Sanderson. *Logicae artis compendium*, Bologna], especially pp. XXIII-XXXIII; 1991; Giard 1985 [La production logique de l'Angleterre au 16e siècle, *Les Études philosophiques*, 3, 303-324]; Jardine 1974 [The place of dialectic teaching in sixteenth century Cambridge, *Studies in the Renaissance*, 21, 31-62]. No attention should be paid to Howell 1956 [*Logic and rhetoric in England, 1500-1700*, Princeton] whose account of developments in logic, particularly during the medieval period, is wildly inaccurate, and this vitiates his judgements about the texts described.

7. ———. 2000. "Domingo De Soto on *Obligationes*: His Use of *Dubie Positio*." In *Medieval and Renaissance Logic in Spain. Acts of the 12th European Symposium on Medieval*

Logic and Semantics, edited by Angelelli, Ignacio and Perez-Ilzarbe, Paloma, 291-307. Hildesheim: Georg Olms. "Soto's *Opusculum obligationum* was published in 1529 as the last treatise in his *Summulae*. (1) I have chosen to discuss it in this paper both because it is one of the very last serious discussions of the medieval doctrine of *obligationes*, and because it sheds some light on the history of *dubie positio* as a type of obligational dispute. This is important, because *dubie positio* is one of the areas pertinent to medieval epistemic logic, and the material found in *obligationes* treatises has not yet been the subject of much investigation. (2) In what follows, I shall first discuss the nature of *dubie positio* and its relation to other types of obligational disputation. I shall then describe the rules which were used. Third, I shall take up a particular problem concerning apparently indubitable propositions, such as 'I exist'. Finally, I shall discuss a sophisma in which the response 'I am in doubt about it' seemed to cause problems for one of the standard obligational rules.

(1) Domingo de Soto, *Opusculum obligationum in Summulae* (Burgos, 1529), ff. cl ra-cliii vb; Domingo de Soto, *De obligationibus in Summulae* (Salamanca 1554-1555: reprinted Hildesheim, New York: Georg Olms, 1980), ff 156 ra-159 vb. The latter is a reproduction of the third edition which, as Dr. Angel d'Ors has shown, modifies the second edition in certain respects: see Angel d'Ors, "Las 'Summulae' de Domingo de Soto", *Anuario Filosófico (Universidad de Navarra)* 16 (1983), p. 212. All my references are to the 1529 edition unless otherwise specified.

(2) For a good discussion of some other sources, see Ivan Boh, *Epistemic Logic in the Later Middle Ages*, (London and New York: Routledge, 1993). See also William Heytesbury, 'The Compounded and Divided Senses' (pp. 413-434), and "The Verbs 'Know' and 'Doubt'" [chapter 2 of the *Regulae*] (pp. 435-479) in Norman Kretzmann and Eleonore Stump, trans., *Logic and the Philosophy of*

Language, vol. 1 of *The Cambridge Translations of Medieval Philosophical Texts*, (Cambridge: Cambridge University Press, 1988)."

8. ———. 2003. "L'équivocité, L'univocité Et Les Noms Propres." In *La Tradition Médiévale Des Catégories (Xiiie-Xve Siècles)*. *Actes Du Xiii Symposium Européen De Logique Et De Sémantique Médiévales (Avignon, 6-10 Juin 2000)*, edited by Biard, Joël and Rosier-Catach, Irène, 127-140. Louvain: Peeters Publishers.

"Dans ses *Quaestiones in artem veterem*, Albert de Saxe commence la section consacrée aux *Catégories* d'Aristote en posant la question « Est-ce que le même terme peut être équivoque et univoque ? » (1). Un peu plus tard, Marsile d'Inghen reprend cette question, légèrement reformulée, dans ses propres *Questiones libri predicamentorum* (2); et en 1428, Paul de Venise consacre une partie de son *Commentaire sur les Catégories* à la même question (3). De plus, on retrouve une discussion approfondie des rapports entre les équivoques et les univoques dans le *Compendium totius logice Joannis Buridani* de Jean Dorp, qui date probablement de la dernière décennie du xive siècle (4). Certes, la question posée par Albert de Saxe n'était pas nouvelle, ayant son origine dans les commentaires de Boèce et de Simplicius, mais les réponses à cette question introduisent deux thèmes nouveaux, l'univocité des noms propres, et l'équivocité des termes mentaux. Ces deux thèmes sont importants, étant donné que depuis l'Antiquité classique le nom propre est l'exemple standard d'un mot équivoque par hasard (*a casu*), et étant donné la présupposition que le langage mental est un langage clair, donc univoque.

Mon étude se divise en trois parties. En premier lieu, je donnerai un bref aperçu de la doctrine des noms propres, telle qu'on la retrouve chez les grammairiens et les logiciens. Ensuite, je ferai quelques remarques sur les définitions avec lesquelles s'ouvrent les *Catégories* d'Aristote. Finalement,

j'aborderai la question principale, celle des rapports entre les équivoques et les univoques, surtout en ce qui concerne les noms propres et les termes mentaux.

Avant d'aller plus loin, je dois préciser que je vais laisser de côté la question, pourtant très intéressante, de l'équivocité du nom propre appliqué au vivant et au mort. Je me concentrerai sur le cas que l'on trouve dans les premières sections des commentaires sur les *Catégories*, celui d'un nom propre appliqué à deux personnes différentes." (pp. 127-128)

(...)

"Conclusion.

Les discussions que nous venons d'examiner montrent comment les logiciens du XIVe et XVe siècles ont essayé de concilier les catégories du nom offertes par Aristote, c'est-à-dire les noms équivoques et les noms univoques, avec les catégories du nom offerts par Priscien, c'est-à-dire les noms propres et les noms communs. En même temps, elles montrent comment les commentateurs des *Catégories* d'Aristote ont absorbé la nouvelle épistémologie qui reconnaissait les concepts singuliers et la nouvelle sémantique qui utilisait la terminologie de la grammaire et celle de la logique pour parler de ces concepts." (p. 140)

(1) Albert de Saxe, *Quaestiones in Artem Veterem*, éd. et trad. esp. A. Munoz Garcia, Maracaibo, 1988, p. 292. Pour plus d'informations sur l'équivocité et l'univocité, voir E.J. Ashworth, « 'Nulla propositio est distinguenda' : la notion d'equivocatio chez Albert de Saxe » dans Joël Biard (éd.), *Itinéraires d'Albert de Saxe: Paris-Vienne au XIV siècle*, Paris, 1991, pp. 149-160 ; et E.J. Ashworth, « Equivocation and Analogy in Fourteenth Century Logic : Ockham, Burley and Buridan », dans Burkhard Mojsisch et Olaf Pluta (éds.), *Historia philosophiae medii aevi: Studien zur Geschichte der Philosophie des Mittelalters*, Philadelphia, Amsterdam, 1991, vol. 1, pp. 23-43.

(2) Marsile d'Inghen, *Questiones libri predicamentorum Aristotelis*, Bodleian Library, Oxford: MS Canon, misc. 381, fos 16 ra-17 ra et fo 8 rb-va.

(3) Paul de Venise, *In Praedicamenta*, Bodleian Library, Oxford: MS Canon, misc. 452, f°s 81va-83vb, et MS Canon. Lat. Class. 286, fos 68ra-70vb. Je cite le premier manuscrit dans ce qui suit.

(4) Jean Dorp, tract. III, *De predicamentis*, dans *Johannes Buridanus, Compendium totius Logicae*, Venise, 1499 ; repr. Frankfurt/Main, 1965, sign, e 5 vb - sign, e 6 ra. Pour plus d'informations sur Jean Dorp, voir E. P. Bos, « Die Rezeption der Suppositionen des Marsilius von Inghen in Paris (Johannes Dorp) und Prag (ein anonymer Sophistria-Traktat) um 1400 », dans M.J.F.M. Hoenen et P.J.J.M. Bakker (éds), *Philosophie und Theologie des ausgehenden Mittelalters. Marsilius von Inghen und das Denken seiner Zeit*, Leiden-Boston-Köln, 2000, pp. 213-230.

9. ———. 2003. "Language and Logic." In *The Cambridge Companion to Medieval Philosophy*, edited by McGrade, Arthur Stephen, 73-96. Cambridge: Cambridge University Press.

"I survey the texts used and the developments from Augustine onwards, and discuss views of the purpose and nature of language and logic, emphasizing their cognitive orientation. I examine the basic semantic notion of signification, the distinction between conventional and natural language, and the notion of mental language. I discuss extended uses of language, especially paronymy and analogy, and theories of reference, especially supposition theory. Finally, I consider various types of paradox: "There is no truth" in proofs for the existence of God, the Liar paradox, and the paradoxes of strict implication as treated in theories of inference."

10. ———. 2004. "Singular Terms and Singular Concepts: From Buridan to the Early Sixteenth Century." In *John Buridan and Beyond. Topics in the Language Sciences 1300-1700*,

edited by Ebbesen, Sten and Friedman, Russell L., 121-151. Copenhagen: C. A. Reitzel.

"This article considers medieval treatments of proper names and demonstrative phrases in relation to the question of when and how we are able to form singular concepts. The logical and grammatical background provided by the authoritative texts of Porphyry and Priscian is examined, but the main focus is on John Buridan and his successors at Paris, from John Dorp to Domingo de Soto. Buridan is linked to contemporary philosophers of language through his suggestion that, although the name 'Aristotle' is a genuine proper name only for those who have the appropriate singular concept caused by acquaintance with Aristotle, it can be properly treated as a singular term by subsequent users because of their beliefs about the original imposition of the name."

11. ———. 2004. "Singular Terms and Predication in Some Late Fifteenth and Sixteenth Century Thomistic Logicians." In *Medieval Theories on Assertive and Non-Assertive Language. Acts of the 14th European Symposium on Medieval Logic and Semantics. Rome, June 11-15, 2002*, edited by Maierù, Alfonso and Valente, Luisa, 517-536. Florence: Olschki.
12. ———. 2005. "Ockham Et La Distinction Entre Les Termes Abstraits Et Concrets." *Philosophiques* no. 32:427-434.
"Quand j'ai lu l'ouvrage magistral de Claude Panaccio (*), je me suis rendu compte que j'aurais de la difficulté à en discuter, parce que je suis d'accord avec tout ce dit l'auteur, surtout en ce qui concerne les problèmes du langage. Je trouve en particulier décisif les arguments qu'il présente contre les thèses de Paul Spade. Ce dernier a argumenté, en se basant sur trois prémisses, qu'il n'y a pas de terme connotatif simple dans le langage mental. Premièrement, chaque terme connotatif a une définition nominale qui, en principe, ne contient que des termes absolus.

Deuxièmement, un terme connotatif est synonyme de sa définition.

Troisièmement, il n'y a pas de synonymie dans le langage mental. Il s'ensuit que, dans le langage mental, un terme connotatif sera remplacé par une séquence de termes absolus qui, selon Ockham, réfèrent aux substances et qualités individuelles d'une manière directe. En opposition à Spade, Panaccio a montré qu'il est impossible d'éliminer les concepts connotatifs simples du langage mental et que les termes connotatifs simples ne sont pas synonymes de leurs définitions nominales. Il est vrai que par ses analyses du langage Ockham voulait montrer que l'on pouvait parler du monde sans multiplier les entités, mais on peut atteindre cet objectif tout en admettant une certaine complexité au niveau des concepts simples. En outre, Panaccio a établi deux thèses importantes. D'abord, Ockham ne s'intéresse pas à la construction d'un langage mental idéal mais plutôt au fonctionnement idéal de notre esprit. En deuxième lieu, l'étude de ce fonctionnement idéal ne nous donne pas toutes les solutions aux problèmes de signification parce que, pour comprendre l'acception des termes, il faut connaître les intentions des impositeurs, ceux qui ont donné leur signification primordiale aux termes oraux. Selon Panaccio, Ockham présente une théorie externaliste de la signification du langage." (p. 427)

(*) *Ockham on Concepts*, Aldershot: Ashgate, 2004.

13. ———. 2006. "Logic Teaching at the University of Prague around 1400 A. D." In *History of Universities. Vol. Xxi/1*, edited by Feingold, Mordechai, 211-221. New York: Oxford University Press.

Review of: *Logica modernorum in Prague about 1400. The Sophistria disputation 'Quoniam quatuor' (MS Cracow, Jagiellonian Library 686, ff. 1ra-79rb), with a partial reconstruction of Thomas of Cleves' Logica* - Edition with an Introduction and Appendices by Egbert P. Bos, Leiden, Brill, 2004.

"This book is largely (45-432) an edition of a *Sophistria* text that represents logic teaching at the University of Prague around 1400 A.D. While the anonymous author shows few signs of intellectual distinction, both the topics chosen for discussion and the large number of direct references to other logicians make the work a valuable source for those interested in the undergraduate curriculum of the late middle ages. The editor, E.P. Bos, has done an excellent job of presenting the Latin text in as perspicuous a fashion as possible, and has provided the reader with an analysis (8-10) of the somewhat haphazard way in which the Prague master presented his sequences of arguments. However, in order to understand the text, or to glean from it anything about university teaching, one needs a good deal more than that. While Bos does provide some basic information about the logicians referred to (11-21), he tells the reader very little about Prague or its curriculum, and his brief list (28-32) of some of the views expressed in the text sheds little light. On page 28 he writes, 'I shall discuss these views in more detail later in the introduction', but unfortunately the promised amplification is never provided. Nor is it clear why some of the views were listed. For instance, the division of singular terms into three types (29-30), including the vague individual (*individuum vagum*), such as 'this human being', is merely the standard interpretation, found in Albert the Great and many later commentators, of a remark by Porphyry in his *Isagoge*. In what follows, I shall provide some context for the *Sophistria* text, before attempting to resolve the issue of its nature and purpose." (p. 211)

14. ———. 2007. "Metaphor and the Logicians from Aristotle to Cajetan." *Vivarium* no. 45:311-327.

"In this paper I shall sketch an answer to a series of questions about the treatment of metaphor by medieval logicians. One question is linguistic: are the words "translatio" and "transumptio" synonyms of the word "metaphora"?

Three other questions concern analogy and equivocation. First, is metaphor a type of equivocation? Second, is metaphor a type of analogy and if so, what type? Is it linked with analogy in the Greek sense of a similarity between two proportions or relations, or with analogy in the new medieval sense of being said *secundum prius et posterius* because of some attribution? Third, how many acts of imposition are required for the production of analogical terms and metaphors? This last issue is particularly important, given that words are said to be used *proprie* only when used in accordance with an act of imposition, and that metaphors are normally said to be taken *improprie*. I will take up these questions in the context of three sets of texts. I will start with some remarks about the texts of Aristotle and their reception in the Middle Ages.

Secondly, I will look at *translatio* and *transumptio* in ancient grammar and rhetoric. Finally, I will look at medieval logic texts, especially commentaries on the *Sophistical Refutations*.

My study will show how ancient traditions in logic, grammar and rhetoric were interwoven and used to tackle specifically medieval problems. Aristotle played a prominent role in the story, but not primarily because of his explicit discussions of metaphor in his *Poetics* and *Rhetoric*. Stoic thinkers contributed the theory of tropes or figures of speech; and Neoplatonic commentators such as Porphyry influenced Boethius's discussion of equivocation and metaphor.

The thirteenth century theory of analogy itself grew out of the interweaving of problems in Christian theology, Aristotelian metaphysics and Aristotelian logic, but was enriched by the long Greek and Arabic tradition of analysing ambiguous terms as being said *secundum prius et posterius*. The resulting syntheses, especially in late thirteenth and early fourteenth century British logicians, show a skilful use of whatever parts of ancient traditions seemed relevant to

the particular interests and doctrines of the author in question." (pp. 311-312)

15. ———. 2008. "Developments in the Fifteenth and Sixteenth Centuries." In *Mediaeval and Renaissance Logic*, edited by Gabbay, Dov and Woods, John, 609-644. Amsterdam: Elsevier.

Handbook of the history of logic: Vol. 2.

"To understand the significance of these developments for the logician, we have to consider three questions. First, how much of the medieval logic described in the previous chapters survived? Second, insofar as medieval logic survived, were there any interesting new development in it? Third, does humanist logic offer an interesting alternative to medieval logic?

In Part One of this chapter I shall consider the first two questions in the context of a historical overview in which I trace developments in logic from the later middle ages thorough to 1606, the year in which the Jesuits of Coimbra published their great commentary on Aristotle's logical works, the *Commentarii Conimbricenses in Dialecticam Aristotelis*. I shall begin by considering the Aristotelian logical corpus, the six books of the *Organon*, and the production of commentaries on this work. I shall the examine the fate of the specifically medieval contributions to logic. Finally, I shall discuss the textbook tradition, and the ways in which textbooks changes and developed during the sixteenth century. I shall argue that the medieval tradition in logic co-existed for some time with the new humanism, that sixteenth century is dominated by Aristotelianism, and that what emerged at the end of the sixteenth century was not so much a humanist logic as a simplified Aristotelian logic.

In Part Two of this chapter, I shall ask whether the claims made about humanist logic and its novel contributions to probabilistic and informal logic have nay foundation. I shall argue that insofar as there is any principled discussion of

such matters, it is to be found among writers in the Aristotelian tradition." (p. 610)

16. ———. 2009. "Le Syllogisme Topique Au XVI^e Siècle: Nifo, Melanchthon Et Fonseca." In *Les Lieux De L'argumentation. Histoire Du Syllogisme Topique D'aristote À Leibniz*, edited by Biard, Joël and Mariani Zini, Fosca, 409-423. Turnhout: Brepols.

"Examiner l'argumentation topique, les règles de validité du syllogisme topique, les rapports entre l'analytique, la dialectique et la rhétorique soulève deux problèmes. Tout d'abord, il y a une difficulté de vocabulaire. Dans son *Introductio in dialecticam Aristotelis* de 1560, le jésuite Francisco de Toledo parle du *syllogismus dialecticus seu topicus*, mais en général les logiciens des XVe et XVI^e siècles parlaient du syllogisme dialectique et non du syllogisme topique (1). Ensuite, il y a une divergence entre d'un côté l'argumentation, le syllogisme, et les règles de validité auxquels s'intéressent les logiciens, d'un autre côté les arguments informels, les techniques de la persuasion et les stratégies non-déductives auxquels s'intéressent les rhétoriciens (2). Afin d'étudier les rapports entre ces deux groupes, et la place des arguments informels dans la logique, s'il y en a, nous devons aborder la notion de forme logique, non par le biais d'un examen du syllogisme dialectique, mais par le biais d'un examen des notions de conséquence, d'argumentation, et de syllogisme en général. Nous allons découvrir que, pour comprendre les rapports entre la logique et la rhétorique, l'enthymème est beaucoup plus important que le syllogisme dialectique.

Les auteurs de petits manuels humanistes et ramistes ne nous offrent pas de discussion approfondie et détaillée de ces notions. Seuls les aristotéliens s'en occupaient, et pour cette raison, nous allons examiner trois auteurs qui étaient certes influencés par l'humanisme, mais qui travaillaient dans un cadre aristotélien enrichi par la logique médiévale. L'italien Agostino Nifo (ca. 1470-1538) a publié

sa *Dialectica ludicra* en 1520 (3). Il connaissait très bien la logique médiévale, mais il connaissait aussi bien les commentateurs grecs, et je ferai référence à ses propres commentaires sur les *Premiers Analytiques* et sur les *Topiques* d'Aristote (4). L'allemand Philippe Melanchthon (1497-1560) a publié son premier manuel de logique, *Compendiaria dialectices ratio* en 1520, et son dernier, *Erotemata dialectices* en 1547 (5). Il manifeste l'influence de l'humanisme par ses exemples et ses simplifications. Le jésuite portugais Pedro da Fonseca (1528-1599) a publié ses *Institutiones dialecticae* en 1564 (6). Chez lui aussi l'influence humaniste est manifeste, surtout par ses références aux commentateurs grecs et son vocabulaire plus classique que médiéval.

Mon exposé se divisera en deux moments. À titre d'introduction, nous examinerons les trois notions clés de conséquence, d'argumentation, et de syllogisme. Ensuite, nous examinerons les textes de Nifo, Melanchthon et Fonseca à la lumière de ces trois notions. (7)" (pp. 409-410)

(1) Francisco de Toledo [Franciscus Toletus], *Introductio in dialecticam Aristotelis*, dans *Opera omnia philosophica I-III*, Cologne 1615-1616 ; réimpr. Hildesheim, Georg Olms, 1985, p. 74b. Dans une édition de Jean Versor [Johannes Versor], *Petrus Hispanus. Summulae logicae cum Versorii Parisiensis clarissima expositione*, Venise, 1572, réimpr. Hildesheim, New York, Georg Olms, 1981, f° 138 v, on trouve le titre "De syllogismo Topico seu probabili", mais dans le texte Versor parle du syllogisme dialectique. Voir aussi Robert Sanderson, *Logicae artis Compendium*, ed. E. J. Ashworth, Bologna, Editrice CLUEB, 1985, p. 179: "Syllogismus Topicus, qui & Dialecticus stricte, est qui ex probabilibus vel quasi probabilibus parit probabilem opinionem conclusionis". Pour deux sources médiévales, voir Gilles de Rome [Aegidius Romanus], *Super libros Posteriorum Analyticorum*, Venise, 1488; réimpr. Frankfurt, Minerva G.M.B.H., 1967, sign. a 5rb :

"sillogismus topicus [...] non est necessarius, sed est ut in pluribus"; et Guillaume d'Ockham, *Summa logicae*, ed. P. Boehner, G. Gal et S. Brown, St. Bonaventure, N.Y., St. Bonaventure University, 1974, p. 359: "Syllogismus topicus est syllogismus ex probabilibus".

(2) Pour plus de détails, voir E. Jennifer Ashworth, "Developments in the Fifteenth and Sixteenth Centuries", in D. M. Gabbay & J. Woods (eds.), *Handbook of the History of Logic 2. Mediaeval and Renaissance Logic*, Amsterdam-Boston, Elsevier, 2008, p. 609-643.

(3) Agostino Nifo [Augustinus Niphus], *Dialectica ludicra tyrunculis atque veteranis utilissima peripatheticis consona : iunioribus sophisticanribus contraria*, Venetiis, 1521.

(4) Agostino Nifo [Augustinus Niphus], *Super libros Priorum Aristotelis*, Venetiis, 1554; et Agostino Nifo [Augustinus Niphus], *Commentaria in octo libros Topicorum Aristotelis*, Parisiis, 1542.

(5) Philippe Melanchthon, *Compendiaria dialectices ratio*, dans *Opera. Corpus reformationum XX*, Brunsvigae, 1854; réimpr. New York et Frankfurt am Main, 1963; Philippe Melanchthon, *Erotemata dialectices*, dans *Opera. Corpus reformationum XIII*, Halis Saxonum, 1846; réimpr. New York et Frankfurt am Main, 1963.

(6) edro da Fonseca [Petrus Fonseca], *Instituições dialécticas. Institutionum dialecticarum libri octo*, ed. J. Ferreira Gomes, Universidade de Coimbra, 1964.

(7) Pour quelques textes, voir l'annexe. [pp. 424-430]

17. ———. 2009. "The Problem of Religious Language: What Can We Learn from Twelfth-Century Discussions?" *Paradigmi. Rivista di Critica Filosofica* no. 27:141-152. "This paper discusses a recent book by Luisa Valente, *Logique et théologie: Les écoles parisiennes entre 1150 et 1220*, in which she gives a rich account of how twelfth and early thirteenth-century Parisian theologians attempted to solve the problems of religious language by appeal to the notions of propriety and translatio. Words had a proper

signification when used in accordance with their original meaning, whereas translatio involved a semantic shift from the proper sense to a new extended sense. However, words used in this way were equivocal, and towards the end of the period theologians tried to save the univocity of at least some of the words we apply to both God and creatures. Their efforts form the background to the new thirteenth-century theory of analogy, a theory to which some contemporary philosophers of religion have returned."

18. ———. 2010. "Terminist Logic." In *The Cambridge History of Medieval Philosophy. Vol I*, edited by Pasnau, Robert and Dyke, Christina van, 146-158. Cambridge: Cambridge University Press.

"Terminist logic is a specifically medieval development.(1) It is named from its focus on terms as the basic unit of logical analysis, and so it includes both supposition theory, together with its ramifications,(2) and the treatment of syncategorematic terms. It also includes other areas of investigation not directly linked with Aristotelian texts, notably obligations, consequences, and insolubles (see Chapters 10, 13, and 14).

Logic was at the heart of the arts curriculum, for it provided the techniques of analysis and much of the vocabulary found in philosophical, scientific, and theological writing.

Moreover, it trained students for participation in the disputations that were a central feature of medieval instruction, and whose structure, with arguments for and against a thesis, followed by a resolution, is reflected in many written works. This practical application affected the way in which logic developed. While medieval thinkers had a clear idea of argumentation as involving formal structures, they were not interested in the development of formal systems, and they did not see logic as in any way akin to mathematics.

Logic involved the study of natural language, albeit a natural language (Latin) that was often regimented to make formal

points, and it had a straightforwardly cognitive orientation. The purpose of logic was to separate the true from the false by means of argument, and to lead from known premises to a previously unknown conclusion. In this process, the avoidance of error was crucial, so there was a heavy emphasis on the making of distinctions and on the detection of fallacies. The procedures involved often have the appearance of being ad hoc, and modern attempts to draw precise parallels between medieval theories as a whole and the results of contemporary symbolic logic are generally doomed to failure, even though there are many fruitful partial correlations.

The core of the logic curriculum was provided by the works of Aristotle with supplements from Boethius, Porphyry, and the anonymous author of the *Liber sex principiorum* (about the last six categories), once attributed to Gilbert of Poitiers. The *logica vetus*, or Old Logic, included Porphyry's *Isagoge*, Aristotle's *Categories* and *De interpretatione*, and the *Liber sex principiorum*. During the twelfth century the *logica nova*, or New Logic, was rediscovered. It included the rest of the *Organon*, namely Aristotle's *Topics*, *Sophistical Refutations*, *Prior Analytics* and *Posterior Analytics*.

Boethius's discussion of *Topics*, or ways of finding material for arguments, was also part of the curriculum, though in the fourteenth century his *De differentiis topicis* was largely replaced by the account of *Topics* given by Peter of Spain in his *Tractatus*. Together these works provided a basis for the study of types of predication, the analysis of simple categorical propositions and their relations of inference and equivalence, the analysis of modal propositions, categorical and modal syllogisms, fallacies, dialectical *Topics*, and scientific reasoning as captured in the demonstrative syllogism. The texts were lectured on and were the subject of detailed commentaries. Nonetheless, a need was felt for simplified introductions to the material and for the

discussion of issues that were at best only hinted at by Aristotle." (pp. 146-147).

(1) Most of the literature dealing with terminist logic is in the form of articles and book chapters. 'Two bibliographical guides are E. J. Ashworth, *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century. A Bibliography from 1836 Onwards* (Toronto: Pontifical Institute of Mediaeval Studies, 1978), and Fabienne Pironet, *The Tradition of Medieval Logic and Speculative Grammar from Anselm to the End of the Seventeenth Century. A Bibliography* (1977-1994) (Turnhout: Brepols, 1997). The classic source of material is L. M. de Rijk, *Logica Modernorum A Contribution to the History of Early Terminist Logic* (Assen: Van Gorcum, 1962-7) vol. I: *On Twelfth-Century Theories of Fallacy*, and vol. II: *The Origin and Early Development of the Theory of Supposition*. Translations of various texts are found in N. Kretzmann and E. Stump (eds.) : *Cambridge Translations of Medieval Philosophical Texts*, vol. I: *Logic and the Philosophy of Language* (Cambridge: Cambridge University Press, 1988). Useful discussions are provided by P. Osmund Lewry, "Grammar, Logic and Rhetoric 1220-1320," in J. Catto, (ed.) *The History of University of Oxford*, vol. I: *The Early Oxford Schools* (Oxford: Clarendon Press: 1984) 401-33, and by N. Kretzmann et al. (eds.) *The Cambridge History of Later Medieval Philosophy: From the Rediscovery of Aristotle to the Disintegration of Scholasticism. 1100-1600* (Cambridge: Cambridge University Press, 1982).

(2) Not all of these ramifications will be discussed below. I shall omit the discussions of non-referring terms and of relations.

19. ———. 2011. "The Scope of Logic: Soto and Fonseca on Dialectic and Informal Arguments." In *Methods and Methodologies. Aristotelian Logic East and West*, 500-

1500, edited by Cameron, Margaret and Marenbon, John, 127-147. Leiden: Brill.

"...I have chosen to examine two sixteenth-century Iberian scholastics, the Spaniard Domingo de Soto (1494-1560) and the Portuguese Petrus Fonseca (1528-1599), in order to see whether the changes in logical method brought about by the supposed influence of humanism are apparent. For Soto, I shall use the second edition of his *Summulae*, printed in 1539/40, because this was the version that was reprinted in Salamanca eight times, and that most successfully introduced Spaniards to earlier sixteenth-century Parisian teachings.(4) Soto's preface (f. ii r-v) shows that he had responded to humanism by simplifying and reorganizing the text of the first edition, and by removing many sophismata. However, he retained much medieval material including supposition, consequences, *exponibilia*, *insolubilia* and *obligationes*. For Fonseca, I shall use his popular *Institutionum dialecticarum libri octo*, which was first published in Lisbon in 1564.(5) The last of its fifty three editions appeared in Lyon in 1625. It follows Aristotle's *Organon*, taking up material from the *Categories*, *Perihermenias*, *Prior* and *Posterior Analytics*, *Topics* and *Sophistici Elenchi* in turn, but as well as many classical references, it also contains some material about *exponibilia*, consequences and supposition." (pp. 127-128)

(4) Domingo de Soto, *Aeditio Secunda Summularum*, Salamanca, 1539-1540.

Note that the foliation is often inaccurate. I am grateful to Angel d'Ors for providing me with photographs of this edition.

(5) Petrus Fonseca, *Instituições Dialécticas. Institutionum dialecticarum libri octo*, Introdução, estabelecimento do texto, tradução e notas de Joaquim Ferreira Gomes, 2 vols, Coimbra, Universidade de Coimbra, 1964.

(6) For further discussion of both textbooks, see Ashworth, *Changes in logic textbooks from 1500 to 1650: the new*

Aristotelianism, 1988, esp. 81-84.

20. ———. 2013. "Analogy and Metaphor from Thomas Aquinas to Duns Scotus and Walter Burley." In *Later Medieval Metaphysics. Ontology, Language, and Logic*, edited by Bolyard, Charles and Keele, Rondo, 223-248. Bronx, NY: Fordham University Press.

"In the history of Aristotelianism and Thomism people often speak about *analogia entis*, the analogy of being, (1) or what, following Giorgio Pini and Silvia Donati, I shall call metaphysical analogy. (2) In fact, this notion was foreign to Aristotle, and for Thomas Aquinas analogy, under that name, was semantic analogy. (3) It belonged to the theory of language, since it was regarded as a type of equivocation, the medieval name for homonymy. Metaphor too was closely related to equivocation, although, unlike analogy, it was an improper use of language, and produced by usage rather than imposition. In the second half of the thirteenth century logicians began to worry about how semantic analogy could be produced by imposition, and how analogical terms could be related to concepts. If a single term is used in different but related senses, does this come about through one original act of imposition, or through two related acts? If there are two acts, can we speak of a single term? If there is just one act, what of the concept or concepts to which that term is subordinated? Can there be a single concept which conveys related senses, and if not, how can the relationship between two concepts be captured by a single act of imposition? As a result of such worries some thinkers, especially John Duns Scotus, abandoned semantic analogy. What was called analogy was now metaphysical analogy, and, at the linguistic level, metaphor replaced semantic analogy. It is the history of these developments that I shall discuss in this essay, and in so doing, I shall show something of the interplay between logic, metaphysics, and philosophy of mind." (p. 223)

(1) For the analogy of being see Pierre Aubenque, "Sur la naissance de la doctrine pseudo-aristotélicienne de l'analogie de l'être," *Les études philosophiques* 3/4 (1989): 291-304; Alain de Libera, "Les sources gréco-arabes de la théorie médiévale de l'analogie de l'être," *Les études philosophiques* 3/4 (1989): 319-45; and E. Jennifer Ashworth, "L'analogie de l'être et les homonymes: Catégories, 1 dans le *Guide de l'étudiant*" in *L'enseignement de la philosophie au xiii^e siècle. Autour du «Guide de l'étudiant» du ms. Ripoll 109*, ed. Claude Lafleur with the collaboration of Joanne Carrier (*Studia Artistarum* 5. Turnhout, Belgium: Brepols, 1997), pp. 281-95. For a general discussion of analogy, see E. Jennifer Ashworth, *Les théories de l'analogie du X^{lle} au X^{VI}e siècle* (Paris: J. Vrin, 2008).

(2) Silvia Donati, "La discussione sull'unità del concetto di ente nella tradizione di commento della *Fisica*: commenti parigini degli anni 1270-1315 ca." in *Die Logik des Transzendentalen. Festschrift für fan A. Aertszen zum 65. Geburtstag*, ed. Martin Pickavé (*Miscellanea Mediaevalia* 30. Berlin, New York: Walter de Gruyter, 2003), pp. 60-139; and Giorgio Pini, *Scoto e l'analogia. Logica e metafisica nei commenti aristotelici* (Pisa: Scuola Normale Superiore, 2002).

(3) For discussion of Aquinas see E. Jennifer Ashworth, "Signification and Modes of Signifying in Thirteenth-Century Logic: A Preface to Aquinas on Analogy," *Medieval Philosophy and Theology* 1 (1991): 39-67; E. Jennifer Ashworth, "Analogy and Equivocation in Thirteenth-Century Logic: Aquinas in Context," *Mediaeval Studies* 54 (1992): 94-135; Joël Lonfat, "Archéologie de la notion d'analogie d'Aristote à saint Thomas d'Aquin," *Archives d'histoire doctrinale et littéraire du moyen âge* 71 (2004): 35-107; and Seung-Chan Park, *Die Rezeption der mittelalterlichen Sprachphilosophie in der Theologie des Thomas von Aquin. Mit besondere Berücksichtigung der*

Analogie (Studien und Texte zur Geistesgeschichte des Mittelalters 65. Leiden, Boston, Köln: Brill, 1999).

21. ———. 2013. "Aquinas, Scotus and Others on Naming, Knowing and the Origin of Language " In *Logic and Language in the Middle Ages. A Volume in Honour of Sten Ebbesen*, edited by Fink, Jakob Leth, Hansen, Heine and Mora-Márquez, Ana María, 257-272. Leiden: Brill.
22. ———. 2013. "Being and Analogy." In *A Companion to Walter Burley. Late Medieval Logician and Metaphysician*, edited by Conti, Alessandro, 135-165. Leiden: Brill.

"Burley's discussion of being (*ens*) and analogy is notable for his thesis that the word "being" corresponds to a single analogical concept. Moreover, he was part of a movement, begun in the later 13th century, which explicitly opposed semantic analogy, a doctrine of language, to metaphysical analogy, the doctrine that just as creatures are beings analogically through their relationship to God, the first cause, whose very essence is being, so accidents are beings analogically through their relationship to the substance, a being *per se*, on which they depend. Obviously, what is new here is not the doctrine itself, but the fact that the relations between God and creatures, substance and accident, were described as analogical. Unlike John Duns Scotus, who insisted that no single word could express a real relation between things ordered in accordance with priority and posteriority, and that no single concept could capture such a relation, Burley retained the link between semantic analogy and metaphysical analogy, for he believed that our words and our concepts can mirror the world. On the other hand, he broke the link between semantics and ontology for other terms traditionally regarded as analogical, such as "healthy", by construing these as metaphorical in their secondary senses.

In what follows I shall begin by surveying the sources in which Burley's views are expressed. I shall then consider some basic notions in the medieval theory of language,

including analogy, but also signification, imposition, and metaphor. Next I shall discuss the standard divisions of equivocation and how these related to both analogy and metaphor in Burley's writings. Finally, I will discuss how Burley deals with ens, first from the point of view of semantics, and then from the point of view of metaphysics." (p. 135).

23. ———. 2013. "Descent and Ascent from Ockham to Domingo De Soto: An Answer to Paul Spade." In *Medieval Supposition Theory Revisited. Studies in Memory of L. M. De Rijk*, edited by Bos, Egbert Peter, 385-410. Leiden: Brill. Also published as Volume 51, 1-4 (2013) of *Vivarium*. Acts of the XVIIth European Symposium for Medieval Logic and Semantics, held the University of Leiden, 2nd, 7th June. 2008.

"Paul Spade has attacked the theory of the modes of personal supposition as found in Ockham and Buridan, partly on the grounds that the details of the theory are incompatible with the equivalence between propositions and their descended forms which is implied by the appeal to suppositional descent and ascent. I trace the development of the doctrines of ascent and descent from the mid-fourteenth century to the early sixteenth century, and I investigate Domingo de Soto's elaborate account of how descent and ascent actually worked. I show that although Soto himself shared some of Spade's doubts, including those about the use of merely confused supposition, he had a way of reducing at least some propositions containing terms with such supposition to equivalent disjunctions and conjunctions of singular propositions. Moreover, he gave explicit instructions on how to avoid the supposed problem of O-propositions." (p. 385)

24. ———. 2013. "Domingo De Soto on the *Categories*: Words, Things, and Denominatives." In *Aristotle's Categories in the Byzantine, Arabic and Latin Traditions*, edited by Ebbesen, Sten, Marenbon, John and Thom, Paul, 263-284.

Copenhagen: The Royal Danish Academy of Sciences and Letters.

"Despite humanist attacks, notably by Petrus Ramus, Porphyry's *Isagoge* and Aristotle's *Categories* retained their place in university education throughout the sixteenth century and into the seventeenth century. Indeed, as late as the 1660s the logic notes in John Locke's early manuscripts are largely devoted to predication, the five predicables, and the ten categories, (1) and in his *Essay concerning human understanding* Locke found it necessary to complain about those "bred up in the Peripatetick Philosophy" who "think the Ten Names, under which are ranked the Ten Predicaments, to be exactly conformable lo the Nature of Things". (2) Original and sustained discussion of these matters is, however, harder to find. Most textbooks cover the issues only in a summary fashion, and such a leading commentator as Agostino Nifo wrote no commentary on Porphyry's *Isagoge* or on the *Categories*. Domingo de Soto is one exception. His substantial commentary on the *Categories*, combined with commentaries on Porphyry's *Isagoge* and Aristotle's *Posterior Analytics*, was published 18 times between 1543 and 1598, mainly in Salamanca, but with one edition in Louvain and five in Venice. (3)

In his commentary, Soto addresses the main questions faced by medieval and Renaissance thinkers, namely does the work deal with words or things, and why is it classified as an introduction to logic? He then takes up a number of subsidiary questions, two of which I shall discuss below. First, why does the work begin with the discussion of equivocals, univocals and denominatives? Second, are denominatives really like equivocals and univocals in relevant respects? In what follows I shall begin by sketching Soto's main conclusions about the nature and purpose of Aristotle's *Categories* as a whole. This will lead me into a discussion of predication, and what it is that we predicate. I shall then turn to the subsidiary questions about why the

work opens as it does, and about the status of denominatives." (pp. 263-264)

(...)

"Conclusion.

To conclude, what I find striking about Soto's discussion of the parts of the *Categories* that I have chosen to focus on is not only that he provides a coherent and thoughtful discussion, but that he displays the strong influence of the tradition of Oxford realism found in Walter Burley and Paul of Venice. It is easy to think of Soto as a Renaissance Thomist, but in fact, he was a well-read eclectic." (p. 280)

(1) See Ashworth 'Locke and Scholasticism', in M. Stuart (ed.), *A Companion to Locke*, Blackwell: Oxford, forthcoming [December 2015].

(2) Locke, *Essay*, III.x.14, p. 497.

(3) Lohr 1988: 431. For a general summary of Soto's position, see Bos 2000. For a useful introduction to medieval views, see Pini 200a. For Soto on equivocation, see Ashworth 1996. Bos and Ashworth give different dates for Soto's birth, but Angel d'Ors (in private correspondence) supported the view that 1494 is the correct date. I owe much to Angel d'Ors (d. 2012) for his useful comments on an earlier version of this paper.

25. ———. 2013. "Logic." In *The Cambridge History of Science. Volume 2: Medieval Science*, edited by Lindberg, David C. and Shank, Michael H., 532-547. Cambridge: Cambridge University Press.

"Medieval logic is crucial to the understanding of medieval science for several reasons.(1) At the practical level, every educated person was trained in logic, which provided not only a technical vocabulary and techniques of analysis that permeate philosophical, scientific, and theological writing but also the training necessary for participation in the disputations that were a central feature of medieval instruction. At the theoretical level, medieval logicians made several contributions. First, they discussed logic itself, its

status as a science, its relation to other sciences, and the nature of its objects.

Here it is important to note that medieval thinkers took a science (*scientia*) to be an organized body of certain knowledge that might include theology, logic, and grammar as well as mathematics and physics. Second, they discussed the nature of a demonstrative science and scientific method in general. Third, they provided a semantics that allows one to sort out the ontological commitments carried by nouns and adjectives. The discussion of connotative terms is particularly important here since it allowed logicians to analyze such terms as "motion" without postulating the existence of anything other than ordinary objects and their qualities. Fourth, they provided particular logical strategies that allow one to sort out the truth-conditions for scientific claims. Particularly important here are supposition theory, the distinction between compounded and divided senses, and the analysis of propositions containing such syncategorematic terms as "begins" and "ceases"." (pp. 532-533)

(1) For full information about medieval logic, see Catarina Dutilh Novaes, *Formalizing Medieval Logical Theories: Suppositio, Consequentiae and Obligationes* (Dordrecht: Springer, 2007); Dov M. Gabbay and John Woods, eds., *Handbook of the History of Logic 2: Mediaeval and Renaissance Logic* (Amsterdam: Elsevier/North-Holland, 2008); Klaus Jacobi, ed., *Argumentationstheorie: Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgerns* (Leiden: Brill, 1993); Norman Kretzmann, Anthony Kenny, and Jan Pinborg, eds., *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press, 1982); Norman Kretzmann and Eleonore Stump, trans., *The Cambridge Translations of Medieval Philosophical Texts, vol. 1: Logic and the Philosophy of Language* (Cambridge: Cambridge University Press, 1988); and Mikko Yrjonsuuri,

ed., *Medieval Formal Logic: Obligations, Insolubles and Consequences* (Dordrecht: Kluwer Academic Publishers, 2001).

26. ———. 2014. "Aquinas on Analogy." In *Debates in Medieval Philosophy. Essential Readings and Contemporary Responses*, edited by Hause, Jeffrey, 232-242. New York: Routledge.

"In this short chapter, I hope to demonstrate the importance of pay close attention to the historical context of the theory of analogy, and to the way in which technical terms were actually used when explicating Aquinas' theory of analogy. In addition, I intend to argue that McInerny gets Aquinas' theory wrong partly because he places too little emphasis on the fact that Aquinas was principally concerned with the names we use of God.

Introduction

Analogy is a notion with various uses. In epistemology one can speak of coming to know something new on the basis of an analogy or likeness between two things and such analogies can form the basis for analogical arguments, including the argument from design for the existence of God. In ontology, the so-called analogy of being refers to the doctrine that reality is divided horizontally into the very different realities of substances and accidents, (1) and vertically into the very different realities of God and creatures, and that these different realities are related by some kind of likeness. However, for the purposes of this discussion, we are primarily concerned with analogy as a doctrine belonging to the philosophy of language and most especially as a solution to the problem of religious language. Aquinas has been hailed through the centuries as making a particularly important contribution, and recent philosophers of religion have taken the doctrines seriously (e.g. Swinburne 1977, Alston 1993). But there are various problems, many stemming from the fact that nowhere does Aquinas give a sustained account of analogy, but rather he

employs the notion on an ad hoc basis to settle the issues under discussion in a particular place. One problem, which I shall touch on briefly below, is whether his account of analogy changed over the years. Two other problems have been discussed fairly extensively by McInerny. One is the question of whether it is a theory of language at all, or whether Aquinas was more concerned with the analogy of being; another concerns the truth of the long-held belief that Cardinal Cajetan's book on analogy, published in 1506, though written in 1498, gave an accurate account of Aquinas. McInerny has successfully argued that Aquinas was indeed concerned with analogical terms, even though his account had certain metaphysical views as its basis, and that Cajetan is not a good interpreter of Aquinas. (2) In what follows, I shall focus on another aspect of Aquinas: how his theory is embedded in specifically medieval semantics. It is here that the fourth chapter of McInerny's book (*Analogous Names*, chapter 13, this volume) offers a useful object lesson in the importance of getting such matters straight. Aquinas wrote in a specific context, and he used terminology with an established meaning that his readers would have known. It is a mistake to read a thirteenth-century author (or any other, for that matter) as if he wrote in a vacuum, and as if his views were only related to thinkers such as Boethius, Cajetan, and John of St. Thomas, who were all far removed from him in time. The only author contemporary with Aquinas cited by McInerny is Albert the Great, and the references are not always helpful." (pp. 232-233)

(1) Editor's note: Aquinas explains that, in contrast to a substance, an accident's mode of being is to exist in something else. For instance, a horse is a substance, but its size, color, are accidents because their nature is to exist in something else.

(2) While McInerny successfully dismisses Cajetan as an interpreter, he does not recognize that much of Cajetan's

discussion is directed towards some fifteenth-century authors rather than Aquinas himself.

References

William P. Alston, "Aquinas on Theological Predication: A Look Backward and a Look Forward." In *Reasoned Faith: Essays in Philosophical Theology in Honor of Norman Kretzmann*, ed. Eleonore Stump. Ithaca and London: Cornell University Press, 1993, pp. 145-178.

Ralph McInerny, *Aquinas and Analogy*, Washington, D.C.: The Catholic University of America Press, 1996.

Richard Swinburne, *The Coherence of Theism*, Oxford: Clarendon Press, 1977.

27. ———. 2015. "Medieval Theories of Signification to John Locke." In *Linguistic Content. New Essays on the History of Philosophy of Language*, edited by Cameron, Margaret and Stainton, Robert J., 156-175. New York: Oxford University Press.

"Locke wrote that "*Words... came to be made use of by Men, as the Signs of their Ideas... The use then of Words, is to be sensible Marks of Ideas; and the Ideas they stand for, are their proper and immediate Signification*" (*Essay*, 3.2.1). (1)

Behind this brief and controversial passage lies a long development of interrelated discussions of the Aristotelian semantic triangle: the discussion of spoken words as signs, both of things and of concepts; the discussion of whether the things signified are natures (whatever their ontological status) or individual existents; and the discussion of ordering: do words signify things or concepts primarily? In this chapter I hope to do three things: (i) trace the history of developments from the thirteenth to the seventeenth century; (ii) throw some light on the issue of whether the theory of signification is a theory of meaning; (iii) illuminate the immediate background to Locke on language. (2)

My treatment is partly synoptic, partly chronological. Given the long period I am dealing with, and the complicated doctrinal history involved, I shall simplify my account by

tracing just a few influential doctrines and focusing on just a few authors, though I shall make occasional references to other figures. The main path I intend to follow starts with Thomas Aquinas (1224/5-74), for, although he was not a logician, he had many things to say about language, and his views, particularly as found in his unfinished commentary on Aristotle's *Peri hermeneias*, were influential in the sixteenth and seventeenth centuries. (3) I shall then turn to the two fourteenth-century nominalists, William of Ockham (c. 1287–1347) and John Buridan (1295/1300-1358/ 61). (4) Both men were very influential at the University of Paris in the late fifteenth and early sixteenth centuries, though Thomism also had a role to play there. For my purposes, the most important product of the Parisian schools is the Dominican, Domingo de Soto (1494-1560), who, while absorbing many features of nominalist logic, is more properly described as an eclectic Thomist. He published his popular logical works after his return to Spain, where he retained a strong influence into the seventeenth century. Another important Iberian was the Portuguese Jesuit Petrus Fonseca (1528-99), whose work inspired the Conimbricenses, commentaries on Aristotle's works produced by the Jesuits at Coimbra. The volume on Aristotle's *Organon* was first published in 1606. Other significant Jesuit authors include the two Spaniards Franciscus Toletus (1533-96) and Antonius Rubius (1548-1615) and the Polish logician Martinus Smiglecius (1564-1618). The importance of these late Scholastic authors is twofold. First, they were all moderate realists in the Thomistic tradition, although they were well acquainted with nominalism and Scotism. Second, they were read throughout Europe and, in particular, were used at the University of Oxford. Descartes told Mersenne that he recalled reading the Conimbricenses, Toletus, and Rubius (AT III, 185), (5) and, when Locke was teaching at Christ Church, Oxford, he recorded in a notebook that his students

bought works by Smiglecius (Ashworth 1981: 304)." (pp. 156-157)

(1) Quotations are taken from Locke, *An Essay Concerning Human Understanding*, edited by Peter H. Nidditch, New York: Oxford University Press, 1975, but references will be given in standard format so that other editions can also be used.

(2) See Ashworth (1981, 1984, 1987) for discussion of the sixteenth- and seventeenth-century background.

(3) For a wider perspective on the earlier period, see Rosier, *La Parole comme acte: Sur la grammaire et la sémantique au XIIIe siècle*, Paris: Vrin 1994 and Rosier-Catach, *La Parole efficace: Signe, rituel, sacré*, Paris: Editions du Seuil 2004. For more on Aquinas, see Ashworth (1999).

References to Aquinas will be given in standard format, since there are many editions (and some translations) of his works.

(4) For nominalism, See Biard, *Logique et théorie du signe au XIVe siècle*, Paris: Vrin 1989, Panaccio, *Ockham on Concepts*, Aldershot and Burlington, VT: Ashgate 2004 and Klima, *John Buridan*, Oxford: Oxford University Press 2009.

(5) I give standard references to the Adam and Tannery edition (Descartes 1897-1913).

28. ———. 2015. "Richard Billingham and the Oxford *Obligationes* Texts: Restrictions on *positio*." *Vivarium* no. 53:372-390.

"The study of Oxford *Obligationes* texts in the 14th century owes much to the work of Angel d'Ors.(1) Fittingly, it is also a subject linked with Spain through the work attributed to Juan de Pastrana, the publication of the Oxford *Sophistrie* in 1503, and the presence of texts by Richard Billingham and others in Spanish libraries. (2) In this paper, I intend to focus on one aspect of a group of texts associated with the University of Oxford, namely the restrictions placed on the very first rule of the type of obligations called *positio*, and

their relation to the sophismata introduced to illustrate the very difficulties that these restrictions were intended to counter. One of my intentions here is to show what was said in a series of rather modest texts that must have been used in actual teaching.

First, however, it is necessary to say something about the *Obligationes* treatises themselves and what they were about." (p. 372)

(1) See especially Angel d'Ors, 'Sobre las *Obligationes* de Richard Lavenham', *Archives d'histoire doctrinale et littéraire du moyen âge* 58 (1991), 253-78; Angel d'Ors, 'Sortes non currit vel Sortes movetur (Roger Swyneshed, *Obligationes*, § 137-138)', *Archives d'histoire doctrinale et littéraire du moyen âge* 60 (1993), 165-72; Angel d'Ors and Manuel García-Clavel, 'Sobre las *Obligationes* de Robert Fland. *Antiqua et nova responsio*', *Revista de Filosofía* 7 (1994), 51-8. For some discussion, see E.J. Ashworth, 'Autour des *Obligationes* de Roger Swyneshed: la *nova responsio*', *Les études philosophiques* 3 (1996), 341-60.
(2) See below for details.

29. ———. 2016. "Locke and Scholasticism." In *A Companion to Locke*, edited by Stuart, Matthew, 82-99. Malden: Wiley-Blackwell.

"Introduction. Locke's public attitude to scholasticism is well known. Many are the disparaging references to the schoolmen, their reliance on disputational success rather than the search for truth, and their obscure jargon. In the *Essay Concerning Human Understanding*, he writes that "the Schoolmen" found the "very useless Skill" of disputing "a good Expedient to cover their Ignorance, with a curious and unexplicable Web of perplexed Words" (3.10.8). Yet public attitudes can be misleading. Descartes professed to be making a new start, yet historians of philosophy have become increasingly aware of how much he took for granted of what he had learned from the Jesuits at La Flèche. Moreover, philosophers often turn out to be in dialogue with

their predecessors even if they do not make this explicit. We have to ask whether the same is true of Locke. Did he enter into a secret dialogue with any scholastics? Are there features of his thought that can be explained in terms of scholastic assumptions?

In order to answer these questions, we need to look at who the schoolmen referred to by Locke were, and what he might have learned from them, particularly with respect to topics in metaphysics, logic, and language. First, however, we must consider the Oxford curriculum which provided the framework for Locke's years of study and teaching there, as there is little reason to believe that he enriched his acquaintance with the schoolmen in his later career." (p. 82)

30. ———. 2017. "Philosophy of Language: Words, Concepts, Things, and Non-Things." In *The Routledge Companion to Sixteenth-Century Philosophy*, edited by Lagerlund, Henrik and Hill, Benjamin, 350-372. New York: Routledge.

"One of the big questions raised by the philosophy of language is how our words relate to the world we live in. Some of the words we use seem to be names of the things around us: 'Socrates' seems to name an actual person, and 'smiling' seems to name something that he does. Similarly, 'dog' and 'horse' seem to name ordinary examples of types of living thing, but do they also name common natures that have a status of their own, apart from individuals? What about such words as 'blindness' and 'nonbeing,' or the names of fictional entities such as 'chimera'? What about so-called analogical words such as 'being,' which seems to encompass both substances and accidents, both God and creatures? And what about words in particular contexts, such as 'Some men are dead' or 'The meadows are smiling'? In this chapter, I shall first say something about the general background to sixteenth-century philosophies of language, and I shall then explore the views of two particular groups of philosopher on how it is that our words relate to the world, ending with a detailed examination of doctrines of analogy." (p. 350)

BRIEF ARTICLES

Two articles in *Handbook of Ontology and Metaphysics* edited by H. Burkhardt and B. Smith (Munich: Philosophia Verlag, 1991):

Joachim Jungius,

Post-Medieval Logic.

Seven articles in *The Cambridge Dictionary of Philosophy*, edited by Robert Audi (Cambridge University Press, 1995), Second edition, 1999:

Giordano Bruno,

Tommaso Campanella,

Marsilio Ficino,

Pedro da Fonseca,

Jean Gerson,

Paracelsus,

Giovanni Pico della Mirandola.

Nine articles in the *Routledge Encyclopedia of Philosophy*, (edited by Edward Craig) London & New York: Routledge 1998:

Giordano Bruno,

Language,

Renaissance Philosophy of,

Lipsius, Justus (1547-1606),

Logic, Medieval,

Logic, Renaissance,

Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim) (1493-1541),

Patrizi da Cherso, Francesco (1529-1597),

Paul of Venice (1369/72-1429),

Renaissance Philosophy.

"Logic." in *The Classical Tradition*, Anthony Grafton, edited by Glenn W. Most and Salvatore Settis, pp. 540B–543B. Cambridge, Mass., London, England: The Belknap Press of Harvard University Press, 2010.

"Q. 3, § 3: Analysis of Langton's Arguments" in Stephen Langton, *Quaestiones theologiae liber I*, edited by Riccardo Quinto & Magdalena Bieniak, pp. 217–222. Printed for the British Academy by the Oxford University Press, 2014.

Related pages

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Annotated Bibliography of Lambertus Marie de Rijk. First Part: from 1950 to 1974

INTRODUCTION

L. M. de Rijk, (Hilversum, November, 6 1924 - Maastricht June, 30 2012) was Professor of Ancient and Medieval Philosophy at the University of Leiden, and Honorary Professor at the University of Maastricht.

A complete bibliography of his writings up to 1999 is available in: Maria Kardaun and Joke Spruyt (eds.) - *The winged chariot. Collected essays on Plato and Platonism in honour of L. M. de Rijk* - Leiden, Brill, 2000. pp. XV-XXVI. I made some corrections, updated the bibliography and omitted the publications in Dutch.

"The present volume is dedicated to De Rijk on the occasion of his 65th birthday and his retirement as a professor in Ancient and Medieval philosophy at the University of Leiden. It contains fourteen of De Rijk's philosophical studies (articles) on medieval logic and semantics. Research on manuscripts and editions of texts have not been included. As the table of contents shows, the studies cover the period from Boethius (6th century) to William of Ockham (ca. 1285 - 1347) and have been ordered according to centuries.

Now some remarks on the main lines of De Rijk's interpretations of mediaeval semantics and metaphysics, as found in the studies collected here. The title of the volume, first, indicates De Rijk's interest in Mediaeval thinkers' views on reality. These views were influenced by theology (see esp. study I). However, medieval semantic views (i.e. the philosophical theories on how terms signify) were basic as the starting point in ontological speculation. Man expresses his views on reality by way of language. De Rijk's aim is to understand how the Medieval philosophers and theologians interpreted reality according to their own semantic views.

De Rijk distinguishes between the use of a name in its name-giving function as opposed to statemental predication, where a term acts as the predicate term of a proposition. The contextual position of a name (in syntax) affects the semantic value. De Rijk gives as examples of these syntactical contexts: first of all, the proposition (in its general form: subject - predicate); further on, intensional contexts (where verbs like 'to know' influence what is said in the proposition) and modal contexts (with modal terms like 'possible' etcetera). De Rijk's analysis of an intensional context can be seen most clearly in his studies on Peter Abailard (1079 - 1142) (studies II - VI). Universals or general names occur in contexts with verbs which denote an act of the mind, viz. abstraction. According to De Rijk, Abailard interprets universals as the intrinsic objects of the acts of understanding (see especially study III, p. 145). If someone conceives of the general name 'man', there is, in De Rijk's line of interpretation, an act of 'man-understanding'.

(...)

Word order is considered a 'rendez-vous' of logic and ontology (see especially study VIII). In *asinus cuiuslibet hominis currit* (which means, in an awkward literal rendering: 'everybody's ass is running') the subject term 'ass' which (in the Latin text) precedes the distributive sign 'everybody's' is not affected by it and, accordingly, refers to one particular individual which is the common property of everybody. On the other hand, in *cuiuslibet*

hominis asinus currit ('each man's ass is running'), in following the sign the term 'ass' is prevented from pursuing its primary inclination to refer to some individual and stands 'opaquely' for a multitude of individuals.

The verb *esse* ('to be') and its related forms - e.g. *ens* ('being'), as well as connected terms such as *existentia* ('existence') - are pivotal terms in medieval metaphysics, ontology and theology. The first formal object of metaphysics in the Middle Ages is either the highest spiritual substances - God and the angels (this interpretation is ascribed to the Arab Averroes) - or 'being in general' (in the interpretation given by the Arab Avicenna). In the Latin Middle Ages both views are advocated, as well as a combination. Whichever view is taken, the semantics of *esse* is crucially important (see especially studies I and V)."

From the *Preface* by Egbert P. Bos to: E. P. Bos (ed.), *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*-, Northampton: Variorum Reprints 1989.

L. M. de Rijk was one of the founders of the review *VIVARIUM. An International Journal for the Philosophy and Intellectual Life of the Middle Ages and Renaissance*.

The Editorial of the first number of Vivarium (1963):

"Issuing a new journal needs some justification. The editors of *VIVARIUM* do not intend to found a journal for mediaeval philosophy tout court. The philosophical systems of the Middle Ages can be approached from more than one point of view. They can be - and frequently are - studied in their relation to mediaeval theology. The present journal, however, will be devoted in particular to mediaeval philosophy in its relations to the whole of profane thought and learning and the vast field of the Liberal Arts.

The editors of *VIVARIUM* are of opinion that this approach of mediaeval philosophy deserves some more attention than usually is paid to it. While fully aware of the merits of the existing

journals concerned with mediaeval philosophy, they only wish to create a more appropriate forum for what might be called the profane side of the intellectual life. They hope to stimulate the achievements of an increasing number of scholars in their country and abroad, likely to have an active interest in this field of research.

Cassiodorus' monastery is more than a name. It embodies the scientific and didactic program of one of the important centres of culture 'in early Western Europe. Therefore the name VIVARIUM has been chosen for this journal.

C. J. de Vogel, L. M. de Rijk, J. Engels."

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1. Rijk, Lambertus Marie de. 1950. "Some Notes on Aristotle, *Metaphysics* a 4, 985b9." *Mnemosyne* no. 4:314-318.
"In *Metaph.* A 4, 985b4 ff. Aristotle speaks about the atomists Leucippus and Democritus. For they, he says, the void is by no means less than the full. (...) W, Jaeger (*Hermes*, 52, 1917 pp. 486 f.) is right in maintaining the reading of all the manuscripts." p. 314.
2. ——. 1951. "The Authenticity of Aristotle's *Categories*." *Mnemosyne* no. 4:129-159.
"Most scholars either deny Aristotle's authorship of the first treatise of the Organon, or else consider the problem of authorship to be insoluble. I maintain, however, that such judgements are wrong and that the treatise is of genuine Aristotelian authorship, and of considerable importance for our knowledge both of Aristotle's own development, and also that of later Platonism. I shall try to show the authenticity of the treatise in the following study, and shall divide my investigation into the following main divisions:

A. The view of the ancient commentators concerning the authenticity of *Categories* Chs. 1-9;

B. Modern criticism of the authenticity of *Categories* Chs. 1-9;

C. The authenticity of *Categories* Chs. 10-15."

[See also the following note to *Ancient and mediaeval semantics and metaphysics* (Second part) - *Vivarium*, November, 1978, p. 85: "Unlike some 30 years ago (see my papers published in *Mnemosyne* 1951), the present author has his serious doubts, now, on the authenticity of the first treatise of the *Organon*"].

3. ———. 1952. *The Place of the Categories of Being in Aristotle's Philosophy*. Assen: Van Gorcum.

Ph.D. thesis, Utrecht University.

From the Introduction: "It seems to be the fatal mistake of philology that it always failed to get rid of Kantian influences as to the question of the relation of logic and ontology. Many modern mathematical logicians have shown that the logical and the ontological aspect not only are inseparable but also that in many cases it either lacks good sense or is even impossible to distinguish them.

Accordingly, the distinction of logical and ontological truth (especially of propositional truth and term-truth), that of logical and ontological accident and that of logical and ontological categories, has not the same meaning for modern logic as it seems to have for 'traditional' logic (for instance the logic of most Schoolmen).

I hope to show in this study that the distinction of a logical and an ontological aspect (especially that of logical and ontological categories) can be applied to the Aristotelian doctrine only with the greatest reserve. A sharp distinction carried through rigorously turns out to be unsuitable when being applied to Aristotelian logic. For both aspects are, for Aristotle, not only mutually connected but even interwoven, and this in such a way that the ontological aspect seems to prevail, the logical being only an aspect emerging more or

less in Aristotle's generally ontological way of thinking." pp. 6-7.

Contents: Bibliography I-III; Introduction 1-7; Chapter I. Aristotle's doctrine of truth 8-35; Chapter II. The distinction of essential and accidental being pp. 31-43; Chapter III. Logical and ontological accident 44-52; Chapter IV. The nature of the categories in the *Metaphysics* 53-66; Chapter V. The doctrine of the categories in the first treatise of the *Organon* 67-75; Chapter VI. The use of the categories in the work of Aristotle 76-88; Appendix. The names of the categories 89-92; Index locorum 93-96.

4. Petrus, Abaelardus. 1956. *Petrus Abaelardus. Dialectica*. Assen: Van Gorcum.

First complete edition of the Parisian manuscript with an introduction; second revised edition 1970.

From the Introduction: "§ 3. The task of logic according to Abailard.

Abailard understands 'logica' or 'dialectica' as the art which aims at distinguishing valid arguments from invalid ones.

We find a clear exposition of his opinion on this matter in the prologue to the treatise *Logica Nostrorum petitioni*.

Abailard here points to the fact that logic is not a theory of thought, which teaches us how we ought to think and dispute: its only function is to distinguish valid arguments from invalid ones and to state why (*quare*) they are valid or not:

est autem logica Tullii auctoritate diligens ratio disserendi, idest discretio argumentorum per quae disseritur, idest disputatur. non enim est logica scientia utendi argumentis sive componendi ea, sed discernendi et diiudicandi veraciter de eis, quare scilicet haec valeant, illa infirma sint. (Log. Nostr. petit., 506, 24-28).

This distinction is made, as a matter of course, on rational grounds. The 'quare haec valeant, illa infirma sint' finds its answer in the presence (c.q. absence) of conclusive force (*vis inferentiae*, *vis argumenti*, *vis sermonis*). It sometimes rests

on the pure form of reasoning (ipsa complexio terminorum): in this case we speak of complexional arguments; the other case is, if the matter of the argument contributes to its conclusive force: we speak, then, of topical arguments:

argumentationes quaedam sunt locales, quaedam vero complexionales quidem sunt quae ex ipsa complexione, idest ex ipsorum terminorum dispositione, firmitudinem contrahunt; locales vero sunt quibus convenienter potest assignari locus, idest evidentia conferri ex aliquo eventu rerum vel proprietate sermonis. (Log. Nostr. petit., 508 9-15).

Since complexional and topical arguments borrow their conclusive force from respectively the arrangement of the terms (dispositio terminorum), and the state of affairs (eventus rerum) or the properties of speech (proprietas sermonis), their valuation requires some insight into the structure of proposition and into the properties of speech, the state of affairs being only secondarily the object of logic. The author elsewhere (Dial. III, 286 31-34) states that the scope of logic is to inquire into the use of speech, in the full sense of the word; inquiring into the nature of things (res) belongs to the domain of physics:

in scribenda Logica hic ordo est necessarius: cum logica sit discretio argumentorum, argumentationes vero ex propositionibus coniungantur, propositiones ex dictionibus, cum qui perfecte Logicam scribit, primum naturas simplicium sermonum, deinde compositorum necesse est investigare et tandem in argumentationibus finem Logicae consummare. (Log. Nostr. petit., 508 4-9).

..... hoc autem logicae disciplinae proprium relinquitur, ut scilicet vocum impositiones pensando, quantum unaquaque proponatur oratione sive dictione, discutiat; physicae vero proprium est inquirere utrum rei natura consentiat enuntiationi (Dial. III, 286 31-34)

Aristotle deals with the use of speech, Abailard says (Log. Nostr. petit., 508,32 -- 509,8), in his Categories, De Interpretatione and Topics, and with argumentations in his Prior and Posterior Analytics: Porphyry wrote an introduction to the first-mentioned treatise. Thus, the scheme of his own Dialectica is obvious: he first treats of the parts of speech (partes orationis) tractatus I; next the categorical propositions and syllogisms are dealt with: tractatus II; the treatment of the hypothetical propositions and syllogisms (tractatus IV) is preceded by that of the topics (tractatus III); the author ends his work with a treatise on division and definition: tractatus V." (pp. XXIII-XXV - notes omitted).

5. Garlandus, Compotista. 1959. *Garlandus Compotista. Dialectica*. Assen: Van Gorcum.

First edition of the manuscripts with an introduction on the life and works of the author and on the contents of the work. From the Introduction: " The author himself says in the preface to his work that the treatise has been meant as a first introduction to dilectics for tyroes:

Nec illos (sc. libros) scribere proposuimus introductis, sed rudibus desiderantibus pervenire ad precepta supradictorum, Boetii scilicet et Aristotilis.

It makes the impression of being a note-book, as appears from the words (III, 74, 26) *cras finiemus Periermeneias*.

The preface shows that Garland

himself subdivided the work into six Books. The first Book deals with the *praedicabilia* and *praedicamenta*; the second with *propositio*; the third with *nomen, verbum, oratio*, and the kinds of proposition; the fourth treats of the topical 'ingredients', such as *propositio, quaestio, conclusio, argumentum*, and *argumentatio* and of the *loci communes*; the fifth Book deals with categorical syllogism and the sixth with hypothetical syllogism. The expositions are illustrated by a great number of sophisms and their solutions.

Boethius' translations and commentaries of Aristotle's logical works and his logical monographies were without any doubt the direct source of the treatise. Garland explicitly says in his preface that he founds his expositions of logic on Aristotle and Boethius. (See Dial. Im 1, 2-9).

The work turns out to be an adaptation of the *logica vetus*, i.e. that part of Aristotelian logic the Latin translations of which were known before 1150 A. D. The sources of the *logica vetus* were Boethius' translations, commentaries and his monographies on logic:

(1) *In Isag. Porhyrii Commenta* (two editions)

(2) *In Categ. Arist. Libri IV* (two editions)

(3) *In Librum Arist. De Interpr.*

(4) *Introductio ad categ. syll.*

(5) *De syllogisimis categoricis*

(6) *De syllogismis hypoteticis*

(7) *De differentiis topicis*

(8) *De divisionibus*

It is a striking fact that Garland neither uses nor mention the treatise *De Divisionibus*; neither division nor definition are dealt with explicitly by him. For the rest Boethius is mentioned many times. Garland nowhere calls his own masters by their names, though he asserts, to have adopted several explanations from them."

(pp. XLV - XLVI, notes omitted).

6. Rijk, Lambertus Marie de. 1962. *Logica Modernorum. A Contribution to the History of Early Terminist Logic. Vol. 1: On the Twelfth Century Theory of Fallacy*. Assen: Van Gorcum.

From the Preface: "In this work the author tries to show how the *Logica Modernorum*, - which, as is known, exerted, from the thirteenth century onwards, such a profound influence on the development of Mediaeval Philosophy -, had its origin in the twelfth century logical and grammatical theories which arose in the Western centers of studies, especially in Paris.

The first volume deals with one of the two roots of this development: the twelfth century doctrine of fallacy; the second volume will treat of the *Logica Modernorum* in the grammatical theories of the twelfth century.

The author thought it of great importance to edit in full the main treatises on which his studies are based; they are found in the *Appendices A-E*. *Appendix F* contains three passages from twelfth century *Perihermeneias*-commentaries; in order to avoid the false suggestion that one has to do here with fragmentary remnants which have come down to us, I chose, despite its somewhat culinary sound, the term '*Frustula*' instead of the more usual '*Fragmenta*'. Some information on the manuscripts concerned is given in the course of this study; for the places, consult the *List of manuscripts used*.

As to the *ratio edendi* I refer to the preface of my edition of the *Dialectica* of Garlandus Compotista, published as part III in the same series.

The *Index nominum*, the *Index locorum* and the *Index sophismatum* aim at completeness. The *Index verborum et rerum* is not exhaustive: it only tries to give a number of words and phrases considered as important for the understanding of the conceptual and doctrinal contents of the edited treatises and to facilitate the reader's orientation in this study."

Contents: Preface 11; 1. The specific character of the *Logica Modernorum* 13; 2. The theory of fallacy in the framework of the *Logica Vetus* 24; 3. The theory of fallacy in the great logical works of Peter Abailard 49; 4. The theory of fallacy in the School of the *Parvipontani* 62; 5. The earliest mediaeval commentaries on the *Sophistici Elenchi* 82; 6. The theory of fallacy in the later glosses on the *Perihemeneias* 113; 7. Two treatises on fallacy from the latter part of the twelfth century 127; 8. On the use of the doctrine of fallacy in twelfth century theology 153; Books and articles referred to 179; List of manuscripts used 181; Appendices: A. *Glose in Arist.*

Sophisticos Elencos 187; B. *Summa Sophistorum Elencorum* 257; C. *Tractatus de dissimilitudine argumentorum* 459; D. *Fallacie Vindobonenses* 459; E. *Fallacie Parvipontane* 491; F. [Frustula Logicalia] 611; Indices: A. Index locorum 629; B. Index nominum 642; C. Index sophismatum et exemplorum 646; D. Index verborum et rerum 659-674.

7. ———. 1963. "On the Curriculum of the Arts of the Trivium at St. Gall from Ca. 850 - Ca. 1000." *Vivarium* no. 1:35-86. "From the hermitage founded about the year 613 by St. Gall, one of the companions of St. Columban, there arose at the beginning of the next century an abbey that has been one of the most famous centres of intellectual and spiritual life in Western Europe.(...)

No doubt one of the most celebrated men of the School of St. Gall was Notched Label (c. 950-2022). Many works are attributed to this master or, at least, to the masters of St. Gall who lived about the year 1000. I confine myself to the works on the Trivium: grammar, dialectics, rhetoric." p. 35 and 47.

8. ———. 1964. "On the Chronology of Boethius' Works on Logic. Part I." *Vivarium* no. 2:1-49. "The chronological order of Boethius' works appears to be a rather difficult problem. Hence, it is not surprising that the numerous attempts to establish it led the scholars to results which are neither all conclusive nor uniform. In this article I confine myself to Boethius' works on logic. Before giving my own contribution it would seem to be useful to summarize the results of preceding studies and to make some general remarks of a methodological nature.

(...)

My conclusion from this survey is that the best we can do in order to establish approximately the chronological order of Boethius' works on logic is to start a careful and detailed examination of all our data on this matter. In doing so an analysis of their contents seems to be quite indispensable,

no less than a thorough examination of doctrinal and terminological differences." pp. 1 and 4.

9. ———. 1964. "On the Chronology of Boethius' Works on Logic. Part II." *Vivarium* no. 2:125-162.

"We shall now sum up the results of our investigations. First some previous remarks. Our first table gives of nine of the works discussed the chronological interrelation, which can be established with a fair degree of certainty. The figures put after the works give the approximative date of their composition (the second one that of their edition); when printed in heavy types they are based on external data; the other ones are based on calculation.

Table 1

Boethius' birth about 480 A.D.

In Porphyrii Isagogen, editio prima about 504-505

In Syllogismis categoricis libri duo (= ? *Institutio categorica*) about 505-506

In Porphyrii Isagogen, editio secunda about 507-509

In Aristotelis Categorias (? *editio prima*) about 509-511

In Aristotelis Perhemeneias, editio prima not before 513

In Aristotelis Perhemeneias, editio secunda about 515-516

De syllogismis hypotheticis libri tres between 516 and 522

In Ciceronis Topica Commentaria before 522

De topicis differentiis libri quattuor before 523

Boethius' death 524

The rest of the works discussed cannot be inserted in this table without some qualification. (...)

We may establish the following table for the works not contained in our first table:

Table 2

Liber de divisione between 505 and 509

possible second edition of the *In Categorias* after 515-516

Translations of the *Topica* (and *Sophistici Elenchi*) and of the

Analytica Priora and *Analytica Posteriora* not after 520

Commentary on Aristotle's *Topica* before 523

the so-called *Introductio* (? = *In Priora Analytica Praedicanda*) certainly after 513; probably c. 523
Scholia on Aristotle's *Analytica Priora* first months of 523
at the latest"

pp. 159-161 (notes omitted).

10. ———. 1965. "*Enkylios Paideia*': A Study of Its Original Meaning." *Vivarium* no. 3:24-93.

"No doubt, the term *Enkylios paideia* (of which the term '*Artes liberales*' is supposed to be the Latin equivalent) refers to one of the key-concepts in European culture and education. From as early as Late Antiquity the Liberal Arts were supposed to embrace the whole circuit of (human) knowledge and therefore to afford some kind of 'encyclopedical' wisdom. The sixteenth century *Grande Encyclopédie* was strongly aware of its origin: 'ce que les Anciens appelaient encyclopédie, c'était l'ensemble des connaissances générales que tout homme instruit devait posséder avant d'aborder la vie pratique ou de se consacrer à une étude spéciale' (quoted by H. Koller in his article *Enkylios paideia* in *Glossa*, Zeitschrift für Griechische und Lateinische Sprache, 34, 1955, pp. 174-189)." p. 24

11. ———. 1966. "Some New Evidence on Twelfth Century Logic: Alberic and the School of Mont Ste Geneviève (Montani)." *Vivarium* no. 4:1-57.

"It is well known that the art of logic (*logica* or *diale(c)tica*) knew a remarkable flourishing period during the twelfth century. In the first half of the century its main centres in Paris were: the School of Notre Dame, of St. Victor, of the Petit Pont and of Mont Ste Geneviève. The present paper aims to offer some new evidence from the manuscripts on the teaching of logic as given in the School of Mont Ste Geneviève (*Montani*). Part of these sources will be published in full in the second volume of my *Logica Modernorum*. This book, to be issued probably about the middle of 1967 will discuss the doctrinal and conceptual content of the treatises mentioned here." p. 1

12. ———. 1966. "Some Notes on the Medieval Tract '*De Insolubilibus*' with an Edition of a Tract Dating from the End of the Twelfth Century." *Vivarium* no. 4:83-115.

"As is known, one of the important contributions made by the Megarian School (4th cent. B.C.) to the development of Western logic was the invention of a number of remarkable paradoxes. Among them there was the famous Liar: 'a man says that he is lying; is what he says true or false?'. Generally speaking, paradoxes of this type intend to show the oddity of making a statement say something about its own truth or falsity. So the Liar, being one of the many puzzles connected with the notions of truth and falsity, is one of the most important logical problems, since the fundamental notion of logic is validity, and this is definable in terms of truth and falsehood.

Mediaeval logicians, too, devoted their attention and ingenuity to the Liar paradox and its variants. The twelfth century revisor of the *Ars disserendi* written by Adam of the Petit Pont in 1132 mentions as a current complicated question (*illud interrogabile multiplex*) the puzzle of the man who says that he is (only) lying. (...)

To turn, now, to the Mediaeval variants of the Liar paradox, the *sophismata* dealing with them attracted special attention from about 1200, if not as early as from the middle of the twelfth century, as may appear from the revision of Adam's *Ars disserendi* mentioned above. From the thirteenth century onwards many tracts have been handed down to us in which these variants and the logical problems they involved were discussed. These tracts went under the title *De insolubilibus*.

As we are told by the authors themselves in their prologues, this title is somewhat misleading. In fact they do not deal with which cannot be solved but rather with what is difficult to solve because of certain circumstances lying in some human act or some property of the speech used. The tracts discuss certain propositions that are self-falsifying since

they contain elements which reflect on the propositions themselves of which they are parts.

The Mediaeval variant of the Liar had this basic form : '*what I am saying is false*' ('*ego dico falsum*'), provided I do not utter any proposition other than '*what I am saying is false*'. In the beginning of the fifteenth century no fewer than fifteen different (or, at least, various) attempts were known to solve the puzzle, as we are told by Paul of Venice, who in his *Logica Magna* listed them industriously. From as early as the thirteenth century we know four different solutions of this kind of *insolubile*.

The aim of this paper is to present what is probably the oldest tract *De insolubilibus* that has come down to us and to bring out some evidence for its date and its place in the development of the Mediaeval *insolubilia* - literature. For this purpose I start from an examination of two later tracts on the subject: the *De insolubilibus* of Walter Burley written about 1302, and two tracts dating from the first half of the thirteenth century, the one of which was ascribed to William of Shyreswood (d. after 1267) by Grabmann, without plausible grounds, it seems, but certainly belongs, just like the other tract, to the first half of the thirteenth century." pp. 83 and 86.

13. ———. 1967. "Some Notes on the Twelfth Century Topic of the Three (Four) Human Evils and of the Science, Virtue and Techniques as Their Remedies." *Vivarium* no. 5:8-15. "In the first of the appendices added by Hugh of St. Victor to the text of the *Didascalicon*, which was composed in Paris in the late 1120's (*), the author gives a division of the contents of Philosophy (printed by Buttimer (**)) as chapters 14 and 15 of Book VI). It opens with the contradistinction of the three evils of human nature and the three corresponding remedies:

'There are three things to be considered now: wisdom, virtue, and need. Wisdom is the understanding of things as they are. Virtue is a habit of mind, a habit which is in

harmony with reason in the way of a nature. A need is something without which we cannot live, but without which we would live more happily. These three things are as many remedies against the three evils to which human life is subject: wisdom against ignorance, virtue against vice, and need against life's weakness. In order to do away with these three evils, men have sought after those three remedies, and in order to find the three remedies, every art and every discipline was discovered.

For the sake of wisdom the theoretical arts were discovered; for the sake of virtue the practical arts were discovered; for the sake of our needs the mechanical arts were discovered. These three were first in practice, but afterwards, for the sake of eloquence, logic was discovered. Logic, though fast to be discovered, ought to be the first learned.

Four, then, are the principal sciences from which all the others descend; these are the theoretical, the practical, the mechanical, and the logical.'

(ed. Buttimer pp. 130-131).

Thus Hugh starts from ignorance (*ignorantia*), vice (*vitium*), and weakness (*infirmetas*) as the three fundamental evils to which human nature is supposed to be subject, and he opposes to them wisdom (*sapientia*), virtue (*virtus*), and need (*necessitas*) as their three remedies. The latter are said to have caused the invention of theoretical science, practical science and mechanical science or techniques. Afterwards, for the sake of eloquence, logic was invented, but in Hugh's division of sciences it is apparently not opposed to some fourth evil of human nature.

As far as we know Hugh was the first to reduce the invention of arts and sciences to certain defects of human nature. We do not know whether this reduction is an invention of his own. This much is certain: his view is frequently found in twelfth century authors both in the Victorine School and in that of Chartres." pp. 8-9.

(*) For this date, see Jerome Taylor, *The Didascalicon of Hugh of St. Victor. A mediaeval Guide to the Arts*, translated from the Latin with an introduction and notes, New York - London 1961 , p. 3.

(**) Hugonis de Sancto Victore *Didascalicon*, De studio legendi. A critical text by Brother Charles Henry Buttmer, Washington D.C. 1939.

14. ———. 1967. *Logica Modernorum. A Contribution to the History of Early Terminist Logic. Vol. 2, Part One: The Origin and Early Development of the Theory of Supposition*. Assen: Van Gorcum.

From the Preface: "In this work it will be attempted to show how the *Logica Modernorum* had its origin, long before the thirteenth century, in the logical and grammatical theories current in the Western centers of studies: Paris, Oxford and presumably a school in Northern Italy.

The first volume dealt with what was considered as one of the two roots of this development: the twelfth century theories of fallacy. The present volume discusses the other source: the development of Mediaeval grammar from an elementary discussion of (Latin) grammar to a linguistic-semantic theory of (Latin) language. It was the latter contribution that was of extreme importance for the origin of the theory of supposition, and generally speaking, of terminist logic.

The purpose of this volume is to trace the details of the origin of the theory of supposition, including appellation and copulation, and to discuss the theory of the properties of terms as found about 1200. Besides, some historical evidence will be given for the origins of the tracts dealing with the properties of syncategorematic terms and those discussing the other specific elements of the *Logica Modernorum*.

The author has thought it of some importance for further investigation in this field to edit in full the main treatises on which the present study is based. They will be found in the

second part of' this book. They have been arranged chronologically, except for the *Quaestiones Victorinae*, which are to be considered as an extra.

The *Index nominum*, the *Index locorum* and the *Index sophismatum* aim at completeness. The *Index verborum et rerum* is not exhaustive: it only tries to give a number of words and phrases considered as important for our understanding of the conceptual and doctrinal contents of the edited tracts, and to facilitate the reader's orientation in this study."

Contents: Part One: 1. Introduction, analysis of the manuscripts concerned 11; 2. On the development of mediaeval grammar 95; 3. The increasing use of special textbooks of logic in the first half of the twelfth century 126; 4. The theory of signification in twelfth century logic up to about 1140 177; 5. On the theory of signification in twelfth century grammar 221; 6. The tract on logic contained in MS. Oxford, *Digby* 174, analysis of its content, its origin and date 264; 7. *Ars Meliduna*. On the theory of terms 292; 8. *Ars Meliduna*. On the denotation of the terms 306; 9. *Ars Meliduna*. The theory of proposition 319; 10. *Ars Meliduna*. The theory of the *enuntiabile* 357; 11. Some treatises on logic dating from about 1200 391; 12. The *Dialectica Monacensis* preserved in Munich, *C.L.M.* 14, 763 408; 13. Some early Oxford tracts on logic 416; 14. The *Summe Metenses* found in Paris, *B. N. Lat.* 11, 412 449; 15. The doctrine of fallacy and the origin of the theories of supposition 491; 16. The grammatical origin and early development of the theory of Appellation (Supposition) 513; 17. The logical theory of the Properties of terms up to about 1200 555; Books and articles referred to 599; List of the manuscripts used 606; List of incipits 608-614.

15. ———. 1967. *Logica Modernorum. A Contribution to the History of Early Terminist Logic. Vol. 2, Part Two: The Origin and Early Development of the Theory of Supposition. Text and Indices*. Assen: Van Gorcum.

Edition of a number of tracts dating from c. 1130 up to c. 1220.

Contents: I. *Introductiones Montane minores* 7; II. *Abbreviatio Montana* 73; III. *Excerpta Norimbergensia* 109; IV. *Ars Emmerana* 143; V. *Ars Burana* 175; VI. *Tractatus Anagnini* 215; VII. *Tractatus de univocatione Monacensis* 333; VIII. *Introductiones Parisienses* 353; IX. *Logica "Ut dicit"* 375; X. *Logica "Cum sit nostra"* 413; XI. *Dialectica Monacensis* 453; XII. *Fallacie Londinenses* 639; XIII. *Fallacie Magistri Willelmi* 679; XIV. *Tractatus de proprietatibus sermonum* 703; XV. *Quaestiones Victorinae* 731; Indices: a. Index locorum; B. Index nominum; C. Index verborum et rerum; D. Index sophismatum et exemplorum.

16. ———. 1968. "On the Genuine Text of Peter of Spain's' *Summule Logicales*'. Part I. General Problems Concerning Possible Interpolations in the Manuscripts." *Vivarium* no. 6:1-34.

"As is known, Peter of Spain, who afterwards became Pope under the name of John XXI, wrote a textbook on logic, which was to enjoy a high renown from the end of the thirteenth up to the seventeenth century as *Summule logicales magistri Petri Hispani* (1).

Its fame appears from the noticeable number of manuscripts (more than 300) and of printed editions (about 160), the latter dating from 1474 up to 1639 (2). This number is tremendous indeed, especially for the future editor of the first critical edition of the *Summule*.

However, the printed editions are of no use for the critical reconstruction of our text. As a matter of fact they all contain quite a number of interpolations.(3) Therefore an examination of their readings can properly be dismissed. As is easily seen, the same holds good for the later manuscripts. They are most of them intended adaptations of the famous school-book by well-known masters of logic. Their very intention to emend the text (*tractatus duodecim iam emendati*) is bound to make the critical editor suspicious as

to the reliability of their text as a source for the original version.

A first attempt to clear up the situation might be made in confining our attention to the earlier manuscripts, say those dating from Peter's lifetime up to about the first decades of the fourteenth century. However, the result appears to be rather disappointing indeed. Even the late thirteenth century manuscripts betray such divergencies as to confirm the supposition of rather early interpolations in a sufficient way." p. 1.

(1) For Peter's authorship, see Joseph P. Mullally, *The Summulae logicales of Peter of Spain*, Notre Dame Indiana, 1945, pp. IX-XVIII.

(2) For a survey, see Mullally, *op. Cit.*, pp. 133-158: Bibliography of Editions of the *Summulae logicales* of Peter of Spain and the commentaries on the *Summulae logicales*.

(3) Cf. the introduction to Bochenski's edition (*Petri Hispani Summulae logicales, quas e codice manuscripto Reg. Lat. 1205 edidit M. Bochenski O. P.*, Torino, Marietti, 1947) pp. XVI-XVIII.

17. ———. 1968. "On the Genuine Text of Peter of Spain's '*Summule Logicales*'. Part II. Simon Faversham (D. 1306) as a Commentator of the Tract I-V of the *Summule*." *Vivarium* no. 6:69-101.

"Who was the author? Grabmann was of the opinion that the only logician bearing the name of *Simon* in the second part of the thirteenth century was Simon of Faversham, since master Simon of Dacia was a grammarian, known especially for his tract *Domus gramatice* (*). However, his being a grammarian does not at all exclude his possible authorship of logical works, as may appear from the case of the Modist Boetius of Dacia, who also wrote a commentary on Aristotle's *Topics*. However, our author's apparent preference for Albert the Great and Avicenna as his sources seems to point to Simon of Faversham as the author of our commentary. Unfortunately his other works on logic do not

offer any additional evidence for his authorship of the *Summule*-commentary, since the works to be considered (especially on *Perihermenias*) all have the form of selected *Questiones*. In his *Questiones super Universalia* as found in the manuscript Kassel, Landesbibliothek, 2° Philos. nr. 30-6 (ff. 1r-9r) a question is read *utrum locus sit principium generationis* (f. 3r). (I could not find it in the Milan manuscript C. 161 *Inf.* which also contains *questiones super universalia* and has the same *incipit*).” p. 72

(*) It has been edited (together with his *Questiones super 20 minoris voluminis Prisciani*) by Alfred Otto in the *Corpus Philosophorum Danicorum Medii Aevi*, III Copenhagen 1963.

18. ———. 1969. "On the Genuine Text of Peter of Spain's '*Summule Logicales*'. Part Iii. Two Redactions of a Commentary Upon the *Summule* by Robertus Anglicus." *Vivarium* no. 7:8-61.

"The question must be answered now whether the *Robertus Anglicus*, who is the author of *Tractatus quadrantis* and the commentary on John de Sacrobosco's *De sphaera* may be also the author of the two redactions of the commentary on Peter of Spain's *Summule logicales* which we found in the Vatican and Todi manuscripts. Three arguments can be adduced in favour of the identity of our author with the teacher of Montpellier.

First, the remarkable similarity of the colophon in both the Rome and Todi redaction of the *Summule* commentary with that of the *De sphaera* commentary as found in Paris, *B. N. Lot.* 7392 and Oxford, Bodleian Library, *Digby* 481. This correspondence is the more noticeable since this kind of colophon which is well-known, indeed, from works discussing *quadrivium* subjects, is very unusual in tracts on grammar or dialectics. If our surmise about the identity of our author and the teacher of Montpellier is correct, both conjectural corrections of the Vatican colophon (discussed above, p. 32) may be right, as both 1270 and 1277 fit in

pretty well with the dates mentioned in the colophons of Robert's commentary on *De sphaera* (1271 and 1272). On palaeographical grounds the year 1270 (*septuagesimo* instead of *septimo*) seems to be the more preferable. Secondly, the occurrence of several sets of medical, astronomical and meteorological notes added in the Todi manuscript by the same hand that wrote our *Summule* commentary, is a reliable clue for the scientific interest of the school where that commentary was written and used in class. Well, the first school to be considered in this regard is that of Montpellier, where one Robertus Anglicus is reported to have been a teacher in the 1270's.

Thirdly, an important hint for the place of origin of a commentary on the *Summule* is often to be found in the example its author gives in his discussion of *Exemplum* in the tract *De locis*. (...)

In conclusion, it may be said that it seems to be highly probable, indeed, the the commentary on Peter of Spain's *Summule logicales* which is extant in two redactions, was written by the same Robertus Anglicus whose *Tractatus quadrantis* and commentary on John of Sacrobosco's *De sphaera* have been preserved in some manuscripts." pp. 39-40.

19. ———. 1969. "On the Genuine Text of Peter of Spain's '*Summule Logicales*'. Part Iv. The *Lectura Tractatum* by Guillelmus Arnaldi, Master of Arts at Toulouse (1235-1244). With a Note on the Date of Lambert of Auxerre' *Summule*." *Vivarium* no. 7:120-162.

"No doubt, this *Lectura Tractatum* was written by a *Guillelmus*, or *Guillermus*, *Arnaldi* who taught the liberal arts at Toulouse. As a matter of fact I found a teacher of that name in a number of documents concerning the county of Toulouse. (...)

A number of resemblances found between the usual text of Peter of Spain's *Summule* and that of Lambert of Auxerre's treatise of the same title had frequently raised the question

of the interdependence of these texts. As is known, Konstant Michalski defended the thesis of the large dependence of Peter of Spain upon Lambert of Auxerre'. As a matter of fact Michalski had to work upon interpolated texts of both works and the textual resemblances alluded to by the Polish Mediaevalist disappear for the greater part when the authentic texts are considered. Grabmann held the inverse opinion and especially pointed to the opening words of Lambert's work: *Ut novi artium auditores plenius intelligant ea que in summulis edocentur . . .* etc. and saw an allusion to the title of Peter's *Summule logicales* in these words. (*) However, the original title of Peter's work was *Tractatus*, not *Summule*, as was frequently shown in our preceding articles. The question of whether or not Lambert was really influenced by Peter's work seems to be far more complicated. It will not be discussed here.

A different question is that of the chronologic order of Peter's and Lambert's works. Its solution is important for the problem of interdependence, even if it is not decisive, since priority of one work to the other does not imply the latter's dependence upon the former.

As to Peter's work, from the existence of a commentary on it which dates from as early as the 1240's (see our article on Guillelmus Arnaldi) the conclusion must be drawn that Peter of Spain cannot have written his *Summule logicales* (or better: *Tractatus*) after 1240. (...)

So we have the following dates for Lambert's *Summule*. The work was written at Troyes (or Pamplona), not in Paris, between 1253 and 1257 when the king was anointed and is likely to have finished his studies. It was published afterwards in Paris, when Lambert was a member of the Dominican Convent there, before he became penitentiary of the Pope." pp. 125, 160-161

(*) Martin Grabmann *Handschriftliche Forschungen und Funde zu den philosophischen Schriften des Petrus Hispanus, des späteren Papstes Johannes XXI (d.1277)* in:

Sitzungsberichte der Bayerischen Akademie der
Wissenschaft Phil.-Hist. Abt. 1936, Heft 9, pp. 41-42

20. ———. 1969. "Significatio Y Suppositio En Pedro Hispano." *Pensamiento* no. 25:225-234.

Translated in Spanish by Th. G. Sinnige.

"En este modesto articulo me propongo hablar de la teoria de la suposición de Pedro Hispano en la forma en que esta expuesta en el Tratado No. VI (*de suppositionibus*). A menudo encontramos la opinion de que la teoria terminística de la suposición en todos los casos haya tenido una base de Indole nominalista. Esta opinion está decididamente equivocada. Basta señalar a un autor como Gualterus Burlaeus para porter en claro que la teoría de la suposición podia muy bien ser interpretada en un sentido realista. Por otra parte se puede comprobar que la teoría de la suposición ya en sus orígenes iba vinculada estrechamente con la teoría de la significación. La evolución de la teoria de la suposición por consiguiente está mezclada Intimamente con las fluctuaciones que se producen en la teoría de la significacion.

En lo que signe me propongo analizar:

- 1) lo esencial de la teoría de la suposición, teoría que en su origen no era otra cosa sino una teoría sobre la interpretabilidad de un término dentro de la proposición;
- 2) el estrecho vínculo que existe entre la teoria de la suposición y la teoria de la significación. Como consecuencia de esto, a principios del siglo XIII et concepto de suposición tiende a extenderse hasta incluir también términos usados fuera del contexto de la proposición (*)" (pp. 226-227)

(*) Para una más amplia información sobre las cosas que se tratan en estas páginas, véase el segundo volumen de mi obra *Logica Modernorum*, en especial las páginas 513-598.

21. ———. 1970. "On the Genuine Text of Peter of Spain's 'Summule Logicales'. Part V. Some Anonymous Commentaries on the *Summule* Dating from the Thirteenth Century." *Vivarium* no. 8:10-55.

"Mgr. Grabmann found several commentaries on the *Summule logicales* dating from as early as the thirteenth century (*) Some of the are anonymous. This group will be discussed in this part of our study on the genuine text of Peter of Spain's famous text-book of logic." p. 10

(*) Martin Grabmann *Handschriftliche Forschungen und Funde zu den philosophischen Schriften des Petrus Hispanus, des späteren Papstes Johannes XXI (d.1277)* in: *Sitzungsberichte der Bayerischen Akademie der Wissenschaft Phil.-Hist. Abt.* 1936, Heft 9, pp. 63-70

22. ———. 1970. "On the Life of Peter of Spain, the Author of the *Tractatus*, Called Afterwards *Summule Logicales*." *Vivarium* no. 8:123-154.

"Before an attempt will be made to sketch the life of the author of the so-called *Summule*, a preliminary question of major importance should be answered: is the author identical with Peter of Spain (Peters Hispanics) who in 1276 became Pope under the name John XI?

An alternative question may be added whether, or not, the famous logician was a Black friar, as was sometimes maintained. (...)

However, other strong evidence can be put forward in support of the traditional view that Peter Hispanus who afterwards bore the tiara was the author of the *Summule*. Since Pope John XXI certainly was a secular priest, the identification implies an absolute rejection of any member of a religious Order as the author of the work. pp. 125-127 (notes omitted).

23. ———. 1970. "Die Bedeutungslehre in Der Logik Des 13. Jahrhunderts Und Ihr Gegenstück in Der Metaphysischen Spekulation." In *Methoden in Wissenschaft Und Kunst Des Mittelalters*, edited by Zimmermann, Albert, 1-22. Berlin: De Gruyter.

Miscellanea Mediaevalia, vol. 7.

Reprinted as chapter VII in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

I. Einleitung: Bedeutungslehre und Methode; II. Die Suppositionstheorie als Bedeutungslehre im 13. Jahrhundert; III: Die Bedeutungslehre in der metaphysischen Spekulation im 13. Jahrhundert.

"Ich möchte jetzt meine Ergebnisse noch einmal ganz kurz zusammenfassen. Es hat sich zuerst, wie ich hoffe, die äußerste Wichtigkeit einer Bedeutungslehre nicht nur für die Logik, sondern auch im Interesse der metaphysischen Spekulation ergeben. Es hat sich herausgestellt, daß sich die immer mehr herausgearbeitete Bedeutungslehre der Suppositionslogik als Theorie der Interpretabilität des Terminus im Grunde genommen mit genau denselben Problemen befaßte, mit denen die Metaphysiker des 13. Jahrhunderts gekämpft haben. Hier wie dort galt es wesentlich, die fundamentalen Bedingungen des Seins („esse" oder „est") in der Reflexion über die menschliche Aussage ausfindig zu machen. Hier wie dort auch entsprachen sich die unterschiedlichen Betrachtungsweisen, je nachdem man entweder die „forma universalis" oder das konkrete Individuum zum Blickpunkt und somit zum Referenzpunkt seiner Spekulation zu machen versucht hat. Man wird sich der Folgerung nicht entziehen können, daß namentlich dem 13. Jahrhundert eine folgerichtige Bedeutungslehre fehlte. Sie wurde geradezu nur gelegentlich und nebenbei angelegt. So findet man vielfach nebeneinander Elemente der Bedeutungslehren der Logiker, der Modisten und jene der metaphysischen Spekulation. Wirklich begründet wurde die Bedeutungslehre m. E. im Mittelalter nie.

Die jetzige Skizzierung aber könnte vielleicht immerhin als bescheidene Anregung dienen, die teils implizite Bedeutungslehre des 13. Jahrhunderts und besonders ihre Vorbedingungen gründlicher zu untersuchen. Das wäre eine Aufgabe, die bei weitem über das Interesse der Logikhistoriker und vielleicht sogar das historische Interesse überhaupt hinausgeht. Es war ja die

philosophische Methode selbst im Spiel, und zwar in einem weitaus erheblicheren Maße, als es den meisten Denkern des Mittelalters zum Bewußtsein kommen konnte." p. 22

24. ———. 1971. "The Development of *Suppositio Naturalis* in Medieval Logic. Part I. Natural Supposition as Non-Contextual Supposition." *Vivarium* no. 9:71-107. Reprinted as chapter IX in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*. "I had already discussed this matter [natural supposition] in the second volume of *Logica Modernorum* (Assen 1967; pp. 571-578) and in the paper *Significatio y suppositio en Pedro Hispano*.

The aim of this paper is to elaborate and, partly, correct the view of natural supposition given there by a discussion of the most representative thirteenth century authors and of some fourteenth century logicians with whom natural supposition still played a rôle, such as John Buridan and Vincent Ferrer.

The thirteenth century authors are Peter of Spain, William of Sherwood, the anonymous author of the *Tractatus de proprietatibus sermonum*, and Lambert of Auxerre. It should be remarked at the outset that there is no interdependence between these thirteenth century authors, apart from the rather vague relation effected by their standing in a common tradition of logic." pp. 71-72

25. Peter, of Spain. 1972. *Peter of Spain. Tractatus, Called Afterwards Summule Logicales*. Assen: Van Gorcum. First critical edition from the manuscripts with an introduction.

From the Introduction: "Contents of the *Tractatus*."

As to the doctrinal contents, the *Tractatus* may be divided in two main parts: one (A) discussing doctrines found in the so-called *logica antiquorum* (= *logica vetus* and *logica nova*), the other (B) those commonly dealt with in the *logica modernorum* (the tracts discussing the so-called *proprietates terminorum*):

A: *De introductionibus* (Tract I), *De predicabilibus* (Tract II), *De predicamentis* (Tract III), *De sillogismis* (Tract IV), *De locis* (Tract V), *De fallaciis* (Tract VII)

B: *De suppositionibus* (tract VI), *De relativis* (Tract VIII), *De ampliacionibus* (Tract IX), *De appellationibus* (Tract X), *De restrictionibus* (Tract XI), *De distributionibus* (Tract XII)."

(pp. LXXXVIII-LXXXIX, notes omitted)

Contents: 1. Pope John XXI (Peter of Spain) as the author of the so-called *Summule logicales* IX; 2. Life and works of Peter of Spain XXIV; 3. The *Tractatus* called afterwards *Summule logicales*. Title, order and number of the tracts. Their date XLIII; 4. Sources. 'The Byzantine thesis'. Peter's possible masters of logic LXI; 5. Contents of the *Tractatus* LXXXVIII; 6. The early diffusion of the *Tractatus*.

Commentaries and editions XCV; 7. The manuscripts used for this edition C; Books and articles referred to CXI; List of manuscripts used CXVI; Index of names CXXI.

26. Rijk, Lambertus Marie de. 1973. "The Development of *Suppositio Naturalis* in Medieval Logic. Part II. Fourteenth Century Natural Supposition as Atemporal (Omnitemporal) Supposition." *Vivarium* no. 11:43-79.

Reprinted as chapter X in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"I - Status quaestionis

From the investigations in the first part of this article the conclusion was drawn that in the thirteenth century doctrine of supposition natural (or habitual, or absolute) supposition was considered the natural capacity of a term to stand for something partaking in the essence (or: universal nature) signified by that term; accidental supposition was the term's actual being taken for something in virtue of the term's combination with some other term in either a phrase or a proposition, or of its having a special meaning in a special social context. Briefly stated : natural supposition

was decidedly non-contextual, whereas all kinds of accidental supposition were of the contextual type. Two characteristics of the thirteenth century doctrine of supposition are to be noticed

(a) accidental supposition, being contextual, does not always imply a propositional context

(b) natural supposition, being something midway significatio and suppositio (as opposed to significatio), seems to enervate the clear-cut

distinction all thirteenth century logicians made between suppositio and significatio.

ad a Thirteenth century logicians turn out to consider the proposition as just one of the possible contexts of a term, not as the only one required for a term's having supposition.

ad b The introduction of natural supposition was due to the peculiar fact that those logicians apparently held it to be indispensable to distinguish between a word's having significatio (viz. its representing some universal nature) and its capacity to stand for individuals partaking in this universal nature (c.q. the universal nature participated, taken as such), which capacity was the direct, or natural, counterpart of its having significatio. This natural capacity must be seen as a reference to a *possible* context, which supplies an adjunct to limit, or restrict, the term's original capacity (c.q. which causes its having an unrestricted exercise of its natural capacity). (...)

As is well known, when studying the problems of significatio fourteenth century logicians showed an increasing interest in the contextual approach to language. Their investigations were focussed on the *congruitas locutionis* and the *veritas propositionis* as the basic requirements (*exigentie*) for stating the actual meaning of terms. Their theories of supposition may be taken as an attempt to specify the truth conditions for (mostly affirmative) categorical propositions. Thus, the various kinds of supposition were characterized by fourteenth

century logicians by means of implications (*consequentie*)'. Consequently, they were bound to lay the most explicit stress on the *proposition* as the only possible context in which a term could have supposition.

The most obvious conclusion from the theoretical point of view would be that natural supposition, being of the non-contextual type, had to disappear in fourteenth century logic. To my mind, it certainly had - as certainly as it never should have appeared. However, it *did* occur in those days, not only in the Realist tradition but with a logician as John Buridan as well.

It is the aim of this article to discuss the reinterpretation of natural supposition and the controversies it provoked, and is still provoking up to the present days." pp. 43-44

27. ———. 1973. "A Note on Aganafat(?)'S '*Thesaurus Philosophorum*'." *Vivarium* no. 11:105-107.

"Some years ago I found in the Vatican Library (*Vat. Lat.* 4537, ff. 45ra-52ra, s. XIII) an incomplete copy of a tract on the *modus opponendi et respondendi*, the author of which calls himself *Aganafat* (or: *Aganasat*).

Further investigations have shown that this tract, called *Thesaurus philosophorum*, must have been the source of the well known *Tractatus de modo opponendi et respondendi* found in several manuscripts (Paris, *BN Lat.* 16.930, 16.617 and Montecassino 362 VV) and printed under Albert the Great's name. (See M. Grabmann, in *Sitzungsberichte der bayer. Akad. d. Wiss., Phil-Hist. Abt.* Jahrg. 1937, H. 10 (Munich 1937), 24 f.) (...)

I hope to edit the *Thesaurus philosophorum* in full next year, together with the adaptations and a study on its place in the development of the *ars obligatoria et exercitativa*. At this moment I confine myself to edit the *argumentum* and the *prologus* in order to enable students of Arab (or Hebrew?) logic to get some impression of this work and its author. I should be very pleased if some information could be given on his identity." p. 105.

28. ———. 1974. "Some Thirteenth Century Tracts on the Game of Obligation. Part I. Two Separate Tracts on '*Falsi Positio*' and '*Impossibilis Positio*'." *Vivarium* no. 12:94-123.

"In his thorough study on Sherwood's and Burley's tracts *De obligationibus*, Father Romuald Green (*) rightly describes the aim of these tracts as follows:

The purpose was to inculcate knowledge of logical rules by practice, to sharpen the pupil's mind to avoid contradiction -- the basis of any disputation ... it was a general introduction to a number of fundamental logical notions and their use in disputation'.

I give his succinct description of the general plan of the obligation:

'Briefly, the plan of an exercise *de obligationibus* is as follows. It is a disputation involving an *opponens* and a *respondens*. The *opponens* proposes a statement, which, for example, he wishes to be upheld. The *respondens* accepts the initial statement and binds himself (*se obligat*) to the wishes of the *opponens*, that is, in this case, to uphold it. This is the meaning of *obligatio* -- the *opponens* asks the *respondens* to take on the obligation, for example, of upholding a particular statement. Once the *respondens* has accepted the obligation, the *opponens* proposes a number of other statements which the *respondens* must concede or deny -- but always the *respondens* must maintain the initial statement according to the obligation accepted, and he must observe the logical rules of inference, if the various statements proposed are logically connected, at all times avoiding a contradiction. Precisely it is this last point -- contradiction -- which provides the key to the exercises in *De obligationibus*. The aim of the *opponens* is to involve the *respondens* in contradiction, and the *respondens* has to avoid it'. (op. cit. p. 18-19).

(...)

The aim of these articles will be to publish some tracts, found in Munich and in some other libraries, which seem to

date from the first half of the thirteenth century, if not, in part, from the end of the twelfth." pp. 94-96.

(*) Romuald Green O.F.M. An Introduction to the Logical Treatise De obligationibus, with critical texts of William of Sherwood (?) and Walter Burley. vol. I: Introduction; vol. II: Critical Texts of William of Sherwood (?) and Walter Burley. Unfortunately, this Louvain thesis written in 1963 has not been published yet. As to Sherwood's authorship, Green seems to be a bit over-anxious in doubting it.

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"In his description of the Oxford manuscript *Canon. misc.* 281 Coxe only mentions (*) anonymous glosses on Priscian's *De constructione* (Priscianus minor). However this manuscript contains also a tract of logic.

(...)

The treatise as a whole has the following parts (the subdivisions printed in minuscules are mine)

Prologus

De obligatione einsque speciebus

I DE POSITIONE

De positione determinata

De quibusdam regulis circa ponibile positum

Sophisma

Consimile sophisma

Idem sophisma

Aliud sophisma

Aliud sophisma
Aliud sophisma
De positione indeterminata
De indeterminate positionis duplici modo

II DE DUBITATUR

Utrum 'dubitatur' sit obligatio annon
De quibusdam regulis
Sophisma

III DE DEPOSITIONE

De eius diffinitione et regulis
De speciali depositione
Utrum non debeat esse obligatio
Sophisma."

pp. 22 and 25.

(*) H. O. Coxe - *Catalogi codicum manuscriptorum Bibliothecae Bodleianae pars tertia codices graecos et latinos canonicos complectens*, Oxford 1854, col. 646.

2. ———. 1975. "Logica Cantabrigiensis. A Fifteenth Century Cambridge Manual of Logic." *Revue Internationale de Philosophie* no. 29:297-315.
Special number in memory of Martin Grabmann.
"The manuscript 182/215 of the important manuscript collection of the Library of Gonville and Caius College at Cambridge contains a number of tracts on logic which were probably written at Cambridge as notes of lectures. Part of them are also found in other manuscripts all over Europe. It seems rather difficult to discern the exact extent of this work, since in nearly all manuscripts the number and arrangement of the tracts is different and other logical works are mixed up with those treatises which doubtless belong to the Cambridge Logic." p. 297
3. ———. 1975. "Quaestio De Ideis. Some Notes on an Important Chapter of Platonism." In *Kephalaion. Studies in Greek Philosophy and Its Continuation, Offered to Professor C. J. De Vogel*, edited by de Rijk, Lambertus Marie and Mansfeld, Jaap, 204-213. Assen: Van Gorcum.

"The opponents of Platonism as well as its adherents have to agree that there is a lot of truth in Whitehead's famous statement that the safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato (*).

I think one of the everlasting items of that tradition is what has been termed since St. Augustine the *quaestio de Ideis*. Indeed, the status (either ontic or merely mental) of the Ideas has fascinated many philosophers, especially the Christian, who could not dispense with a statement concerning the relationship of the eternal and immutable Ideas to God. In this short contribution to the dedicatory volume for our academic teacher C. J. de Vogel, I shall confine myself to roughly sketch the development of the problem of that relationship from Plato's days down to some fourteenth century Franciscan thinkers." p. 204

(*) Alfred Nort Whitehead - *Process and reality. An essay in cosmology* - Gifford lectures delivered in the University of Edinburgh during the session 1927-28. Camvrdige, 1929, p. 53.

4. ———. 1975. "The Place of Billingham's *Speculum Puerorum* in Fourteenth and Fifteenth Century Logical Tradition, with the Edition of Some Alternative Tracts." *Studia Mediewistyczne* no. 16:97-151.

"From the second half of the fourteenth century onwards the *Speculum puerorum* (or *iuvenum*) compiled by the English logician Richard Billingham was very popular, especially in Southern and Central Europe. However, this popularity does not extend to his other works. The *Speculum*, which together with works such as those of Thomas Manlevelt, William of Heytesbury and Marsilius of Inghen, was a formidable competitor of Peter of Spain's *Tractatus*, is an introduction to what from about the 1330's onwards has been one of the cardinal items, if not the most characteristic one, of fourteenth century logic, rather than a *Summule* of the type of Peter of Spain's *Tractatus*, which

contains all the topics of the *Logica antiqua* and *moderna* favoured in Peter's days. Generally speaking, fourteenth century philosophy focussed its attention on the search for certainty (*certitudo* and *evidentia*). That fourteenth century logic paid special attention to the procedures of proving a sentence, is evidenced by the numerous tracts entitled *De probationibus propositionum* or *De veritate ac falsitate propositionum* which have been handed down to us in fourteenth and fifteenth century manuscripts.

Billingham's *Speculum* is one of them." pp. 99-100 (Notes omitted).

5. ———. 1975. "La Signification De La Proposition (*Dictum Propositionis*) Chez Abélard." In *Pierre Abélard - Pierre Le Vénérable. Les Courants Philosophiques, Littéraires Et Artistiques En Occident Au Milieu Du XII Siècle*, edited by Jolivet, Jean and Louis, René, 547-555. Paris: Éditions du Centre national de la recherche scientifique.

Published also in: *Studia Mediewistyczne* 16, 1975 pp. 155-161.

Reprinted as chapter IV in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"Cette communication se borne a un bref examen de la signification de la phrase complète (*propositio*) dans la logique de Pierre Abélard.

Il paraît utile de commencer par la définition du verbe signifier (*significare*) chez ce logicien.

'signifier' dit des mots (*dictiones*) c'est produire une intellection dans l'âme de l'auditeur (*Logica ingredientibus* 307, 30 ss.), tandis que le même verbe est également appliqué à la dénotation des choses extérieures (*ibid.*); dans ce dernier sens, le verbe est synonyme de *appellare*, *nominare*, *demonstrare*, *designare*.

'signifier' dit des phrases complètes (*propositiones*) c'est produire une intellection laquelle est formée par la liaison des intellections de ses parties (*dictiones*)." p. 547

"On peut conclure que selon Abélard le *dictum* n'est pas un objet qui serait indépendant de la pensée, mais plutôt le contenu de la pensée, c'est-à-dire une *intellection objectivée*, qui correspond soit à un état de choses réel, soit à un état de choses seulement possible (*Dial. II*, 205, 28-30: *id dicimus quod id quod dicit hec propositio 'Socrates est homo', est unum de his que natura patitur esse*), soit un état de choses tout à fait impossible (*Dial. II*, 158, 7 -9: la proposition '*Socrates est lapis*' ne reflète pas une *inherentia* de Socrate et de pierre, ni '*Socrates non est lapis*' leur rémotion).

(...)

Ainsi, l'existence qu'établit la proposition en parlant, n'est pas une existence réelle, mais, pourrait-on dire, une existence *parlée*, ou plutôt, une existence *pensée* ou *logique*. Employant la distinction bien connue du XIV^e siècles (présentée notamment par Jacques d'Ascoli, Thomas d'York, Pierre Thomae):

res: 1) *extra animam* (chose extérieure); 2) *in anima*: a) subjective (= *acte* de l'intellection comme tel) b) objective (*contenu* de l'intellection).

on peut dire qu'Abélard a essayé, à sa façon, de montrer que le *dictum*, de la proposition, loin d'être une chose extérieure (*res extra animam*) est une chose qui doit son existence à l'âme ou à l'intellection (*res in anima*), mais qu'il faut en même temps bien le distinguer de l'acte de l'intellection pris comme tel (*res in anima subjective*), et reconnaître, sa propre identité dans le *contenu objectif* de l'intellection. Par là, le *dictum* du grand logicien du XII^e siècle semble être d'une nature logique par excellence." pp. 554-555. (notes omitted)

6. ——. 1975. "Review Of: Thomas Erfurt. *Grammatica Speculativa*. An Edition with a Translation and Commentary by Geoffrey L. Bursill-Hall (London, 1972)." *Linguistics* no. 157:160-164.

7. ———. 1975. "Another *Speculum Puerorum* Attributed to Richard Billingham." *Medioevo* no. 1:203-235.

"Every student of Mediaeval logic knows the tract on the truth and falsity of the propositions by the hand of Richard Billingham.

It goes under the titles *Speculum puerorum*, *Speculum iuvenum*, and also *Terminus est in quem*, after the well known *incipit* borrowed from Aristotle's *Prior Analytics* (I I, 24b16-18) *Terminus est in quem resolvitur propositio ut predicatum et de quo predicator, apposito vel diviso esse vel non esse*. In 1970 Dr. Alfonso Maierù published a very useful school edition of the work, (*) to the effect that the scholarly world has now that text at its disposition which exerted a tremendous influence in fourteenth and fifteenth century logic, especially in the universities of Eastern and Southern Europe.

The text has come down to us in two different redactions, an English and a Central European one.(**) Elsewhere (***) I tried to show that Billingham's work is the most famous specimen of quite a number of similar tracts *De veritate et falsitate propositionum*, but certainly not the oldest of them. It is the aim of this article to introduce and edit another treatise of this type, which like the well known treatise edited by Maierù goes under the title *Speculum puerorum* and is likewise attributed to Billingham. It is found in a late fourteenth century manuscript of the Archivo General de la Corona de Aragon at Barcelona, Spain, viz. Ripoll 141." p. 203

(*). A. Maierù, *Lo "Speculum puerorum sive Terminus est in quem" di Riccardo Billingham*. «Stud. Med.», 3 (1969), 297-397.

(**) See Maierù, *Introd.* 318 sqq. Maierù seems to be wrong in distinguishing a third class of manuscripts; in fact at least two of this class contain quite a different tract which also goes under the name *Terminus est in quem*. See L. M. de Rijk, *The Place of Billingham's Speculum puerorum in 14th*

and 15th Century Logical Tradition, with the edition of some alternative tracts, (1975).

(***) Study quoted in the previous note.

8. Rijk, Lambertus Marie de, and Mansfeld, Jaap, eds. 1975. *Kephalaion. Studies in Greek Philosophy and Its Continuation, Offered to Professor C. J. De Vogel*. Assen: Van Gorcum.

"This volume is offered to Professor C. J. de Vogel, who for more than twenty-five years held the chair of Ancient and Medieval (since 1968 of Ancient and Patristic) Philosophy in the University of Utrecht."

Contents: W. J. Verdenius: Heraclitus' conception of fire 1; René Schaere: Héraclite jugé par Platon 9; Jaap Mansfeld: Alcmaeon: '*Physikos*' or Physician? With some remarks on Calcidius' 'On vision' compared to Galen, Plac. Hipp. Plat. VII 26; E. de Strycker S. J.: The oracle given to Chaerephon about Socrates 39; G. J. de Vries: A general theory of literary composition in the Phaedrus 50; Pierre-Maxim Schuhl: Platon et la pureté de l'altitude 53; Enrico Berti: Logical and ontological priority among the genera of substance in Aristotle 55; Suzanne Mansion: Une passage obscur du deuxième livre de la Physique 70; G. Verbeke: Moral behaviour and tiem in Aristotle's Nicomachean Ethics 78; Olof Gigon: Phronesis und Sophia in der Nicomach. Ethik des Aristotle; B. L. Hijmans: Athenodorus on the Categories an a pun on Athenodorus 105; Heinrich Dörrie: Logos-Religion? Oder Noûs-Theologie? Die Hauptsächlichen Aspekte des kaiserzeitlichen Platonismus 115; Walter Burkert: Plotin, Plutarch un die platonisierende Interpretation von Heraklit und Empedokles 137; Theo Gerard Sinnige: Metaphysical and personal religion in Plotinus 147; A. H. Armstrong: Beauty and the discovery of divinity in the thought of Plotinus 155; Modestus van Straaten O. S. A.: On Plotinus IV, 7 [2], 8, 3 164; F. P. Hager: Proklos and Alexander von Aphrodisias über ein Problem der Lehre von der Vorsehung 171; Maria

Timpanaro-Cardini: Two questions of Greek Geometrical terminology 183; Robert Joly: Remarques sur Dion Chrysostome et le Nouveau Testament 189; Cornelia W. Wolfskeel: Christliches und Neoplatonisches im denken Augustins 195; L. M. de Rijk: *Quaestio de Ideis*. Some notes on an important chapter of Platonism 204; Hans-Rudolf Schwyzer: The Intellect in Plotinus and the archetypes of C. G. Jung 214; Bibliography of C. J. de Vogel, compiled by J. van Heel 223; Tabula gratulatoria 231.

9. Rijk, Lambertus Marie de. 1976. "Some Thirteenth Century Tracts on the Game of Obligation. Part Iii. The Tract *De Petitionibus Contrariorum*, Usually Attributed to William of Sherwood." *Vivarium* no. 14:26-49.

"William of Sherwood (born between 1200-10 died between 1266-71) (*) is commonly (*) considered the author of not only a tract *De obligationibus* but also a short tract called in the only manuscript (Paris, B. N. Lat. 16.617, f. 64v) *Petitiones contrariorum*. This small work deals with the solution of logical puzzles (sophismata) that arise from hidden contrariety in the premisses of an argumentation. The aim of this paper is to publish the shorter tract from the Paris manuscript and to investigate its attribution to Sherwood.

(*) The most extensive biography of Sherwood is found in Norman Kretzmann, William of Sherwood's Introduction to Logic translated with an introduction and notes. University of Minnesota Press, Minneapolis 1966, Introd. pp. 3-12.

(**) See Kretzmann, op. cit., p. 15.

10. ———. 1976. "On Buridan's Doctrine of Connotation." In *The Logic of John Buridan. Acts of the Third European Symposium on Medieval Logic and Semantics, Copenhagen 16-21 November 1975*, edited by Pinborg, Jan, 91-100. Copenhagen: Museum Tusculanum.
Reprinted as chapter XI in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"Mediaeval Terminist logic was concerned with the so-called properties of terms (*proprietaes terminorum*), to the extent that it not only studied the formal structures of Latin language, its logical syntax, and all kinds of specifications within this scope, but also interpreted the linguistic elements and structures. This interpretation mainly focussed on what the moderns would call semantics rather than on formal logic as such. The properties of terms (*significatio*, *appellatio*, *suppositio* and its various forms: *ampliatio*, *restrictio*, *distributio*) were investigated in their relation to the so-called *res extra animam* (extra-mental reality).

Two statements can be made. First: Who wants to detect a Mediaeval thinker's implicit ontological points of view, finds a wealth of firm evidence in his doctrine of the properties of terms. Secondly: Within the domain of these properties it is Buridan's *appellatio* that has a very interesting role because of its affinity with the modern concept of connotation. So Buridan's *appellatio* is entitled to have the attention of both the historians of Mediaeval thought and learning as of those modern logicians who do not want to seclude themselves from the historical background of modern doctrines. My approach to the matter concerned now is to compare Buridan's *appellatio* with modern connotation, more specifically to put the translation 'connotation' for Buridan's *appellatio* to the test." p. 91

11. ———. 1976. "Richard Billingham Works on Logic." *Vivarium* no. 14:121-138.

"Since Professor Alfonso Maierù published (*) his most useful work-edition (*strumento di lavoro*) of Richard Billingham's *Speculum puerorum* every student of Mediaeval logic has been acquainted with that famous work which exerted such a great influence in the fourteenth and fifteenth century logic curriculum, especially in the schools of Eastern and Southern Europe. Elsewhere (**) I have tried to show that Billingham's work is part of a certain tradition

of similar works on the truth and falsity of propositions and certainly not unique in the, genre nor at its origin.(...)

The aim of this paper is to recollect all manuscript evidence for Billingham's logical works." pp. 121 and 123.

(*)Alfonso Maierù, Lo 'Speculum puerorum sive Terminus est in quem' di Riccardo Billingham. Estratto da A Giuseppe Ermini, Centro italiano di studi sull' alto Medioevo, Spoleto 1970, 297-397. (= Studia medievalia 3, (1969), 297-397).

(**) L. M. de Rijk, The Place of Billingham's Speculum puerorum in 14th and 15th Century Logical Tradition, with the Edition of Some Alternative Tracts in: Studi Mediewistyczne 16 (1975), 99-153.

12. ———. 1977. "*Logica Oxoniensis*. An Attempt to Reconstruct a Fifteenth Century Oxford Manual of Logic." *Medioevo* no. 3:121-164.

"In a recent paper (*) I have attempted to show that the study of logic at Cambridge University during the fifteenth century led to the compilation of an own textbook. It seems rather obvious that the rival school of Oxford had also its specific textbook *in usum delphini*. However, our manuscript tradition is less clear at this point; whereas the Cambridge logic seems to be handed down as a whole, its Oxford counterpart presents itself in a rather scattered form, to the extent, indeed, that, to my knowledge at least, no manuscript contains all (presumable) parts of this work. This paper attempts to reconstruct the (supposed) Oxford textbook." p. 121

(...)

"*Conclusions*. It is quite clear from the previous investigations that about 1400 the study of logic in the Oxford schools led to a remarkable production of tracts. There seems to have existed a more or less established set of tracts on the different logical topics of those days. Far from having one specific author this «*Oxford Logic*» seems to consist of adaptations of famous fourteenth century tracts. This holds also good for other famous Oxford treatises. So is

Bradwardine's well-known tract on proportion frequently found in various anonymous adaptations in our fifteenth century manuscripts (see also some of the manuscripts analysed above). (...)

Much work is still to be done about the exact affiliations and interdependency of the tracts of the «*Oxford Logic*» and eponymous works of the 14th and 15th centuries. Again, as with the Cambridge Logic, the Southern Europe (especially Italian tradition, will turn out to be of the utmost importance. The only aim of this paper is to give a survey of the manuscript evidence. Most of the conclusions drawn can only be accepted with all proper reserves." p. 163-164.

(*) '*Logica Cantabrigiensis*' A fifteenth century manual of logic

13. ———. 1977. "On Ancient and Mediaeval Semantics and Metaphysics. Part I." *Vivarium* no. 15:81-120.

"1. *Introduction*. The aim of this study is, rather than to give a contribution to the history of semantics as such, to show (i) the interdependence of Ancient (and Mediaeval) semantic views and metaphysical doctrines, and (2) how some Mediaeval semantic points of view may be clarified when traced back to the corresponding Ancient views. As far as Antiquity is concerned, Plato, Aristotle and the Stoics as well as Neoplatonism and Peripatetics are discussed. However, it should be noticed at the outset that in many cases it is practically impossible to discern exactly what precisely in the different views found in Late Antiquity came from what School, let alone to attribute the various views to specific authors. To my mind, in his inspiring paper on the logical doctrines in the Neoplatonic and the Peripatetic schools (*) A. C. Lloyd made the correct approach to the subject matter. When discussing the question how much of the Neoplatonic views is borrowed from Stoic logicians his answer is that substantially it is nothing but the fact that the forms of Neoplatonism are sometimes conditioned by Stoic logical doctrine and terminology; what still remained under

those adventitious shapes is the intrinsic impetus and natural direction of Neoplatonism itself (Lloyd, 158)." p. 81. (*) Neoplatonic Logic and Aristotelian Logic in: *Phronesis, A Journal for Ancient Philosophy* (1) 1956, 58-72 and 146-160, henceforth quoted as Lloyd. This study should be corrected in many points, however.

2. Participation and the multiplication of the Form in Plato; 2.1. A particular's partaking of several Forms; 2.2. The Forms' capacity for mutual communion; 2.3 The Forms and their being known;

"2.4. The Forms' epistemologic function and their ontological status. The basic question of what is the extent of the World of Forms appears with Plato in two distinct shapes: (a) which are the several classes of things belonging to the Ideal World? and (b) where Forms are found? As a matter of fact the two questions are clearly related. The former is concerned whenever is asked about the transcendent nature of organic and even anorganic (both honorable and undignified) things as well as mathematical and moral entities (**). In last analysis this form of the question has much to do with the hierarchic order of the transcendent world. However, it is first the second question that should come under review now; it is concerned with the status of the Forms. Next, the former question as confined to the Hierarchy of Being will be discussed in the second part of this section." pp. 96-97.

(**) The classical passages are found in the *Phaedo*, *Republic*, *Parmenides*, *Timeus*, and the *Seventh letter*, 342 A.D.

2.4.1. The different status of the Platonic Form; 2.4.2. The hierarchic arrangement of the Forms; 2.5. The threefold status of the Forms as found with Plato; 2.5.1 The Form taken in its transcendent status; 2.5.2. The Form taken in its immanent status; 2.5.3. The Form taken in its mental status.

14. ———. 1978. "On Ancient and Mediaeval Semantics and Metaphysics. Part II. The Multiplication of Being in Aristotle's *Categories*." *Vivarium* no. 16:81-117.
- "3. *The multiplication of being in Aristotle's Categories*.
- 3.1. *Introduction*. One of the results of the preceding section may be that Lloyd (1956, p. 59) seems to be wrong in asserting that in Plato's view the rôle of the universal is played by the Idea exclusively, and that only by the time of the Middle Academy, that is, for the Platonists of the first two centuries A.D., the performers of this rôle have been multiplied. As a matter of fact the distinction between Plato and his followers of the Middle Academy on this score would seem to be a different one. The ontological problems of participation were felt as early as in the Platonic dialogues (see our section 2), as well as the logical ones concerning predication (which will be discussed in a later section). Well, the Platonists of the first two centuries A.D., introduced explicitly a threefold distinction I of the Platonic Form or rather of its status which was (only) implied with Plato. I think, Lloyd is hardly more fortunate in ascribing (ibid.) this introduction chiefly to the influence of Aristotelian logic on Platonic interpretation. It is true, in stating the basic distinction between *en hypokeimenôî* and *kath' hypokeimenou* Aristotle tried to face the same cluster of fundamental problems which induced later Platonists to the distinction of the Forms as taken before or after the *methexis* (cf. Simplicius, In Arist. Categ., 79, 12ff.).
- However, Plato's disciple, Aristotle (the most unfaithful one, in a sense, as must be acknowledged) was as deeply engaged on the same problems as were his condisciples and the Master himself in his most mature period. It is certainly not Aristotle who played the rôle of a catalyst and was the first to provoke the multiplication of the Platonic Form in order to solve problems which were not recognized before in the Platonic circle. On the contrary, Plato himself had saddled his pupils with a basic and most intricate problem, that of

the nature of participation and logical predication. It was certainly not left quite unsolved in the later dialogues, but did still not have a perspicuous solution which could be accepted in the School as a scholastic one. So any of his serious followers, (who were teachers in the School, at the same time) was bound to contrive, at least, a scholastic device to answer the intricate question. To my view, Aristotle's solution should be discussed in this framework. For that matter, Aristotle stands wholly on ground prepared by his master to the extent that his works on physic and cosmology, too, are essentially discussions held within the Academy (Cp. Werner Jaeger, Aristotle. Fundamentals of the history of his development, Oxford 1949, 308)." pp. 81-82

3.2. Aristotle's classification of being as given in the Categories; 3.2.1. The common view: categories = predicates; 3.2.2. The things said 'aneu symplokés'; 3.2.3. The doctrine of substance given in the Categories; 3.2.4. The ontological character of the classification; 3.2.5. Some obscurities of the classification; 3.2.6. The different status of the 'things' meant; 3.2.6.1 The first item of the classification; 3.2.6.2. The second item of the classification; 3.2.6.3. The third item of the classification; 3.2.6.4. The ontological status of the 'things' meant in the items (2) and (3); 3.2.6.5. The fourth item of classification; 3.2.7. The relation between the different 'things'; 3.3. Categories and predicables; 3.3.1. The opposition of category and predicable; 3.3.2. The impact of the opposition; 3.3.3. The obscure position of the differentia; 3.3.4. Conclusion..

15. ———. 1979. "Facts and Events. The Historian Task." *Vivarium* no. 17:1-42.

"English translation (by Jop Spiekermann) subsidiezed by the University of Leyden of part of my introductory book on Medieval Philosophy (*Middeleeuwse wijsbegeerte*. Traditie en vernieuwing. Assen 1977) being part of Chapter II (On

the philosophical presuppositions of historical periodization)." p. 1

"Summary. Basically, a historian's conception of history is to be judged by the status he assigns to *historical fact*. We on our part have defined *fact* as the mental entity to which direct reference is made by a descriptive statement accepted as true (1.2-1.4). Next, we have tried to throw further light on this conception, not least by enlisting the aid of linguistics (1.5-1.7).

History -- as distinct from what others have termed 'history in an objective sense' -- has been defined as '*histoire connaissance*', whose central concerns it is to render insightful what we have called the vis-à-vis (XYZ), sometimes indicated by the, to me repellent, term '*histoire réalité*' (2.2).

Further reflection on what ultimately constitutes *fact* has led us to adopt, in line with others, an extension of Kuhn's paradigm concept: paradigms is whatever is constitutive of *any* external world experience, regardless of what this experience may be; it is of a compelling nature.

When the historian, intent on getting a grip on his vis-à-vis (XYZ), delineates and structures it, any such structuring operation is, from the perspective of the vis-à-vis, arbitrary and intrusive. On the historian's part, however, it is of a compelling, paradigmatic nature (3.1). This lends piquancy to such phrases as 'Historical truth dictates the observation that...', since it is not any 'past reality' which dictates to us. Rather, it is our own, indeed historical (!) paradigmatically determined experience of our vis-à-vis which, without dictating anything, compels us.

But a paradigm *can* be reversed, thereby giving rise to a different, eventually perhaps completely different, mode of experiencing the vis-à-vis (3.2-3.3)

The historian-the medievalist no less than his fellow-historians-is confronted with this matter on two counts. In his probing quest he himself is tied clown to the

contemporary paradigm. Though he is unable to discern the outlines of the paradigm he is caught up in which must indeed, by definition, be postulated-yet his realization that his mode of experiencing the vis-à-vis determines his scientific activities and that both are shaped by the prevailing paradigm, should restrain him from entertaining unwarranted ideas about 'objectivity'. Equally, he must take into account that his documentary sources, in turn, are paradigmatically determined. For anyone writing at any moment in the past it was possible to be 'objective' only in the sense that he honestly recorded what *he* saw." pp. 41-42.

16. ———. 1980. *Die Mittelalterlichen Traktate De Modo Opponendi Et Respondendi: Einleitung Und Ausgabe Der Einschlägigen Texte*. Münster: Aschendorff.
Inhalt.

EINLEITUNG

1. Eine jüdisch-arabische (?) Vorlage des bekannten pseudo-albertischen Traktats *De modo opponendi et respondendi* 1;
2. Der *Thesaurus philosophorum* des 'Aganafat' 11;
3. Die Albert dem Grossen fälschlicherweise zugeschriebene Überarbeitung des *Thesaurus philosophorum* 26;
4. Eine weitere Bearbeitung des *Thesaurus* aus der Feder eines Magisters Gentilis aus dem 14. Jahrhundert 35;
5. Eine selbständigere Überarbeitung des *Thesaurus* in einem Erlanger Kodex. Weitere Spuren des Genres 43;
6. Die Technik und Methode der drei edierten Traktate. Der vermutliche Umfang der Originalfassung des *Thesaurus* 54;
7. Die Stellung des *Thesaurus* c.s. im mittelalterlichen Lehrbetrieb 68;
8. Zur Ausgabe. Beschreibung der Handschriften. Die *Ratio edendi* 84.

DIE TEXTE

1. Die *Thesaurus Philosophorum* des Aganafat 106;
2. Die Prager version des *Thesaurus philosophorum* 159;
3. Pseudo-Alberti Magni *De modo opponendi et respondendi* 193;
4. Gentilis de Monte Ste Marie in Georgio *De arte et modo disputandi* 287-379.

17. ———. 1980. "On Ancient and Mediaeval Semantics and Metaphysics. Part Iii. The Categories as Classes of Names." *Vivarium* no. 18:1-62.

"4. *The Categories as class of names; 4.1. Status quaestionis.* The previous sections contain several hints to the close interrelation between three major issues in Plato's doctrine, viz. the question about the true nature of the Forms and those about participation and predication. Indeed, for the founder of the theory of the Forms, predication was bound to become a problem. Forms are immutable and indivisible; yet other Ideas have to participate in them; they are unique, by themselves and subsistent; yet, when saying '*John is man*' (or *white*), '*Peter is man*' (or *white*), should there be one perfect, eternal, immutable *etc.* Form of MAN (or WHITE) in the one and another in the other? Or, as I have put it above [1977: 85]: if John, Peter, and William are wise, does this mere fact mean that there must be something which they are all related to *in exactly the same manner*, namely WISDOM itself? And if '*John is wise*', '*Peter is wise*', and '*William is wise*' are all true statements, what exactly is the meaning of the predicate name '*wise*'? The former question is concerned with participation, the latter with predication. Well, that the crux of the latter problem is not the separate existence of the Forms (*chôrismos*) clearly appears from the fact that also the author of the *Categories*, who had entirely abandoned all kind of *chôrismos*, could apparently not get rid of a similar problem: if the categories really are classes of 'things there are' (1 a 20) (i.e. 'real' substances, 'real' natures, and 'real' properties), rather than concepts (i.e. logical attributes), what kind of 'thing' is *meant by* a term *qua* 'category'? So for Aristotle the semantic problem still remained. His distinction between *en hypokeimenôi* and *kath' hypokeimenou* could only hide the original problem. It is often said that these phrases refer to different domains, the metaphysical and the logical one, respectively. We have

already found some good reasons to qualify this opposition (see [1978], 84; 88). It seems to be useful now to collect all kind of information from Aristotle's writings, not only the *Categories*, about the proper meaning of the categories.

This will be the aim of our sections 4.2-4.7." pp. 1-2

4.2. *On some modern interpretations of 'kata symplokên';*

4.3. *Aristotle's use of the categories;* "For this section see also my Utrecht dissertation, *The place of the Categories of Being in Aristotle's philosophy*, Assen 1952 pp. 76-88. I

have to correct or to adjust my former views on several

points."; 4.31. *The categories as a classification of reality;*

4. 32. *The categories as a classification of sentence*

predicates; 4.33. *The categories as a classification of*

'copulative being'; 4.4. *How did Aristotle arrive at his list*

of categories?; 4.5. *Are the categories the 'highest*

predicates?; 4.6. *The categories taken as names in*

Metaph. Z 1-6 and Anal. Post. I 4; 4.7. *An attempt at a*

reinterpretation of Categories, chs. 1-5; 4.8. *Aristotle's view*

on relatives; 4.9. *Conclusion.*

18. ———. 1980. "The Semantical Impact of Abailard's Solution of the Problem of Universals." In *Petrus Abaelardus (1079-1142). Person, Werk Und Wirkung*, edited by Thomas, Rudolf, Jolivet, Jean, Luscombe, David and de Rijk, Lambertus Marie, 139-151. Trier: Paulinus-Verlag. Reprinted as chapter III in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

"It is most unfortunate that as late as in the second edition of his *Theory of Universals* Richard Aaron has based his rather unfavourable view on Peter Abailard's contribution to the solution of the problem of universals on the older work of our famous logician only, viz. the *Logica Ingredientibus*. As is known, the French Master's most mature solution is found in the *Logica Nostrorum petitioni* (LNP) (*).

In this work (LNP 522, 10 ff.) Abailard attributes the commonness of common nouns neither to extramental things nor to words (voces), rather he states that it is

significant word (*sermo*), that is either singular or universal. He finds much support in Aristotle's definition of the universal: 'a universal is that which is by its nature predicated of a number of things.' (**) Abailard lays much stress on the nature of the formation of *sermones*, which to his mind is a human establishment (*hominum institutio*), unlike the formation of extramental things and that of words taken as articulated sounds, which are creations of nature. His solution is entirely focused on his explicit distinction between the material identity of *vox* and *sermo* as opposed to their formal diversity ('non-identity'). There is, he says, a clear formal distinction between 'being predicable of many,' or: 'predicability' and 'that which is predicable of many'. It is predicability that must belong to a *vox* for it to be a universal; just being something that is predicable of many is not enough.

Well, Abailard makes every effort to explain the formal difference between *vox* (word, i. e. articulated sound) and *sermo* (significant word), which should be put beside their material identity. The distinction is so important to him that we need not wonder that throughout the whole discussion Abailard makes use of his best weapon, his incomparable skill in the field of linguistic (or rather: semantic) analysis."

(*) Richard I. Aron, *The theory of Universals*, Oxford, 1967 (2nd ed.), p. 13.(...)

(**) *De interpretatione* 7, 17a 39-40.

19. ———. 1980. "Peter Abälard (1079-1142), Meister Und Opfer Des Scharfsinns." In *Petrus Abaelardus, 1079-1142. Person, Werk Und Wirkung*, edited by Thomas, Rudolf, 125-138. Trier: Paulinus-Verlag.

Conference at the Trierer Theologischen Fakultät in Trier (18 April 1979).

Reprinted as chapter II in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"Kehren wir zum Abschluss nochmals zu Abälards eigenen Worten zurück: „Von der ganzen Philosophie sagte mir die

Logik am meisten zu: für ihre Waffen gab ich die Ritterwaffen dahin." Ihrer Stimme ist er tatsächlich gefolgt, nicht nur als Theoretiker der Logik, sondern auch durch Anwendung seiner subtilen Logik auf sonstige Wissensgebiete. Aber der Einfluss seiner logischen Natur lässt sich auch des weiteren spüren: Sein ganzes Leben wurde von seinem Scharfsinn geprägt: wusste er doch auch die Schwächen seiner Gegner erbarmungslos zu analysieren. Sein Schüler Berengar von Poitiers schrieb nach der Verurteilung seines Lehrers (durch die Synode von Sens im Jahre 1140) eine Verteidigungsschrift, die u. a. Abälards Glaubensbekenntnis (*Confessio fidei*) enthält (= *Epist.* 17). Nun denn, die *Confessio fidei* gleicht keineswegs Augustins *Retractatio*, scheint doch Abälard vielmehr versucht zu sein, abermals recht zu behalten. Was er beiseite zu schaffen wünscht, sind nicht etwa eigene Irrtümer, sondern Missverständnisse seitens anderer, worunter ihm wohl das Wichtigste war, dass die Leute seinen aufrichtigen Glauben angezweifelt hatten. Seine Stärke, die Logik, hat ihn bei vielen verhasst gemacht, indem man sie dem christlichen Glauben gegenüberstellte." p. 138.

20. ———. 1980. *Each Man's Ass Is Not Everybody's Ass*. On an Important Item in 13th Century Semantics. In *Historiographica Linguistica* Studies in medieval linguistic thought. Dedicated to Geoffrey L. Bursill-Hall on the occasion of his sixtieth birthday on May 15, 1980. Reprinted as chapter VIII in: *Through Language to Reality*. Studies in Medieval Semantics and Metaphysics. "After the discussion of the well-known sophism "*Cuiuslibet hominis asinus currit*" William of Sherwood rejects an alternate analysis in the following words: "*quod sic vel sic iudicetur non est ex parte sermonis sed ex parte nostra tantum*" (...)
The aim of this paper, written in honour of a meritorious scholar in the history of medieval linguistic thought,

Geoffrey Bursill-Hall, is, first, to discuss Sherwood's treatment of the sophism (and especially clarify his concluding sentence); then, to put the question into its proper historical context, viz. the medieval discussion of the logico-semantic impact of the structure of discourse (i. e., the effect of word order on the meaning of a given sentence)." p. 23

(...)

"3. *The semantic impact of the discussion.*

Kilwardby's formulation of the condemned position is well-suited to clarify the semantic impact of the whole discussion. It seems to be focused on the question of whether, or not, nouns (names), by their own nature (*secundum propriam inventionem*) refer to existent things alone. As is known the affirmative answer is energetically defended by Roger Bacon (Braakhuis 1977). However, Roger's position is certainly not an isolate one. Not only a William of Sherwood came very close to it (Braakhuis 1977), but, generally speaking, many medieval logicians adhere to the view that a noun's primary inclination is to refer to particular, demonstrable individuals and that class-designation and connotation is just a secondary function of names. To take our sophism. In 'asinus cuiuslibet hominis currit' the subject term 'asinus' *preceding* the distributive sign 'cuiuslibet' is not affected by it and, accordingly, refers to one particular individual.

On the other hand, in 'cuiuslibet hominis asinus currit', in *following* the sign the term 'asinus' is prevented from pursuing its primary inclination and cannot help being confused over (*confundi*) a multitude of individuals. Elsewhere (De Rijk 1980a, 1980b) I have tried to show that as early as from Abelard's days medieval logicians developed semantic views to the effect that, in fact, they endowed names with, at least, two levels: (a) a name in its own nature refers to an existent thing alone, and (b) when occurring in a syntactic formation (*constructio*), especially

when joined to a verb of a tense other than the present, a name is reduced to a confused level on which it designates realization of a certain nature (form), including that in the past or future, or even a possible one.

Later discussions of our sophism (e.g., the controversy between Paul of Venice and Peter of Mantua on the issue (as found in the former's *Logica magna*, Treatise Two make clear that our sophism should be put into the general semantic framework of the period. Medieval word-order problems, indeed, were often considered very important since word-order was viewed as the rendez-vous of grammar and ontology." p. 230.

Braakuhuis 1977 = *The views of William of Sherwood on some semantical topics and their relation to those of Roger Bacon* in *Vivarium* 15: (1977) pp. 111-142

De Rijk 1980a = The semantical impact of Abailard's solution of the Problem of Universals

De Rijk 1980b = Abailard's semantic views in the light of later developments

21. ———. 1981. "On Ancient and Mediaeval Semantics and Metaphysics. Part Iv. Plato's Semantics in His Critical Period (First Part)." *Vivarium* no. 19:1-46.

"5. *Plato's semantics in his critical period; 5.1.*

Introduction. In concluding the previous section I argued (1980: nr. 4.9, p. 62) that Aristotle's *Categories* may be viewed as dealing with the several ways in which an individual man can be named without destroying his concrete unity. A well-known passage of Plato's *Sophist* (251 A 8ff.) was referred to in which Plato deals with the puzzle of one man with many names. It is true, Plato labels the puzzle as just 'a magnificent entertainment for the young and the late-learners' (251 B), and is more interested in the related question of how 'things' like Rest and Change (presently called *Kinds*) can also have several attributes (attributive names) and the general problem of attribution as implying the 'Communion' of Kinds'. But it is obvious at

the same time that in this shape too the puzzle is mainly concerned with the notions of naming, asserting and predication. So Plato's *Sophist* unavoidably has to be part of our discussion.

A further argument for taking the *Sophist* into consideration may be found in Ammonios' commentary to Aristotle's *De interpretatione*. He remarks (*ad 17 a 26ff.: Comm. in Aristot. graeca IV 5*, p. 83, 8-13, ed. Busse) that the analysis of the *apophantikos logos* as given by Aristotle is to be found scattered all over Plato's *Sophist* (261 Cff.) right after that master's excellent expositions about Non-being mixed with Being (*peri tou synkekramenou tōi onti me ontos*). For that matter, on more than one item of Aristotle's *Categories* and *De interpretatione* the Ancient commentators refer to related questions and discussions in Plato's later dialogues, especially the *Sophist*. I hope to show in sections (5) and (6) that the views found in the *Categories* and *De interpretatione* are most profitably compared with what Plato argues in the related discussions of the *Sophist*." p. 1.

5.2. On the main theme of Plato's *Sophist*; 5.3. Plato's preliminary attempt to search 'the *Sophist*' (216A-231E); 5.4. The semantic character of the procedure; 5.5. On current views about 'what is' and 'what is not'; 5.5.1. Introductory: on the genus of image-making; 5.5.2. What should be understood by the phrase 'what is not'? (237B-242B); 5.5.2.1. On the notion of 'what absolutely is not'; 5.5.2.2. On the association of 'what is not' with likeness and falsehood; 5.5.3. Pluralists and Monists about 'what is'; 5.5.3.2. On 'what is' as taken by the Monists; 5.5.4. Materialists and Idealists about 'what is'; 5.5.4.1. The Materialists (245E-247E); 5.5.4.2 The Idealists (248A-249D); 5.5.4.3. Does 'what is in change' include Forms?; 5.6. The general problem of name-giving (249D-256D); 5.6.1. 'Being' as a (formally) separate and (materially) all-embracing Form.

22. ———. 1981. "On Ancient and Mediaeval Semantics and Metaphysics. Part V. Plato's Semantics in His Critical Period (Second Part)." *Vivarium* no. 19:81-125.

5. Plato's semantics in his critical period (Continuation);

5.6.2. The problem of giving several names and the Communion of Kinds; 5.6.2.1. On the 'trivial' question of 'one individual -- many names'; 5.6.2.2. Giving several names and the Communion of Kinds;

"5.6.3. Dialectic and the Communion of Forms

In order to clarify the Communion of Kinds an analogy is drawn between the vowels which 'form a sort of bond running through the whole system (253 A 4-5) and certain Forms that are 'running through all' (253 C 1). Just as without the help of vowels it is impossible for one of the other letters to fit in with any other (A 5-6), similarly it is the special Forms that make possible Communion and are responsible for Division (C 2-3). It seems to be useful to have a look at the impact of this analogy." p. 95

5.6.3.1. The precise impact of the vowel-analogy; 5.6.3.2. The proper task of Dialectic; 5.6.3.3. The description of the dialectician's practice; 5.6.4. On the Communion of Forms as occurring in particulars; 5.6.5. The question of 'what is not' reduced into a problem of name-giving; 5.6.6. Four antinomies concerning the Five Kinds raised and solved (254D-255E); 5.6.6.1. The first round: on the relations of Being, Rest and Change; 5.6.6.2. The second round: on the relations of Change, Rest, Same and Other; 5.6.6.3. The third round: 'What is' and 'the Same' disentangled; 5.6.6.4. The fourth round: 'What is' and 'the Other' disentangled; 5.6.6.5. On the different uses of kath' hauto; 5.6.6.6. 'What is' and 'the Other' disentangled. Continuation; 5.6.6.6. 'What is' and 'Other' disentangled. Continuation.

23. ———. 1981. "Die Wirkung Der Neuplatonischen Semantik Auf Das Mittelalterliche Denken Über Das Sein." In *Sprache Und Erkenntnis Im Mittelalter. Akten Des 6. Internationalen Kongresses Für Mittelalterliche*

Philosophie Der Société Internationale Pour L'étude De La Philosophie Médiévale, 29. August-3. September 1977 Im Bonn, edited by Beckmann, Jan P., 19-35. Berlin: De Gruyter.

Reprinted as chapter V in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"Das Thema dieser Plenarsitzung, SPRACHE UND LOGIK, könnte man als ein rein logisches, bzw. rein linguistisches Problem auffassen. Der Titel dieses Vortrags jedoch genügt, um deutlich zu machen, dass dies nicht meine Absicht ist; uns interessiert zur Stunde das Bedeutungsproblem als philosophische Frage. Ich halte es für nicht ganz unwichtig zu bemerken, dass es sich für mich dabei nicht um eine durch diesen Philosophiekongreß bedingte Wahl handelt, sondern um eine prinzipielle Auffassung, und zwar, dass überhaupt das Bedeutungsproblem nur als ein semantisches aufgefasst werden sollte. Wer aber Semantik sagt, kann die Fragen der Ontologie und Metaphysik nicht ausser acht lassen.

Diejenigen unter uns, die auf dem Gebiet der Logik eher Amateure als Liebhaber sind, dürfen sich aber nicht darüber freuen, dass jetzt das Verhältnis *Sprache* und *Metaphysik* unmittelbar, ich möchte sagen, geradlinig, zu Wort gebracht werden wird. Es bleibt ja immer, zur Vermeidung eines Kurzschlusses, der Umweg über die Logik wesentlich, da sonst eine rein evokative, mehr andeutende als deutende Bewältigung der metaphysischen Fragen in den Vordergrund treten würde.

Ich möchte von einem logischen Spezialfall der Seinsdeutung ausgehen. Zuerst wird er in seinen logisch-semantischen Kontext gestellt; danach wird der Doppelcharakter des Verbums „*est*“ näher analysiert, wobei die generelle Frage der Namensbezeichnung sich als das eigentliche Problem entpuppt, und zum Abschluss wird sich dies besonders auf die Relation Aktualität und Faktizität verlegen." p. 19

24. ———, ed. 1981. *Anonymi Auctoris Franciscani Logica Ad Rudium*. Nijmegen: Ingenium Publishers.
Edited from the MS. Vat. lat. 946 with a short introduction, notes and indices

25. ———. 1981. "Boèce Logicien Et Philosophe: Ses Positions Sémantiques Et Sa Métaphysique De L'être." In *Atti Del Congresso Internazionale Di Studi Boeziani (Pavia, 5-8 Ottobre 1980)*, edited by Obertello, Luca, 141-156. Genova: Accademia Ligure di scienze e lettere.

"Le grand historien Etienne Gilson a bien remarqué que c'est à propos du problème du Bien que la pensée de Boèce fut la plus personnelle et la plus féconde. Avec Platon et Saint Augustin, il identifie dans son opuscule *Quomodo substantiae* l'être au Bien (comme le Mal au non-être). Il est évident que dans l'opinion de Boèce la doctrine de l'être obtient une importance décisive comme base de la théorie du Bien. Aussi la solution du problème du Bien et du Mal fut esquissé dans sa métaphysique de l'être.

L'identification de l'être et du Bien implique que pour tout ce qui est, c'est une seule et même chose *d'être* et *d'être bon*. Mais si les choses sont *substantiellement* bonnes, en quoi diffèrent-elles du Bien en soi, qui est Dieu? Dans cette question la problématique du *Sophiste* de Platon a dû revivre. On sait que dans ce dialogue Platon a essayé de résoudre le problème fondamental de l'être des choses périssables par une analyse vraiment pénétrante des notions de «Même» (*tauton*) et «Autre» (*heteron*).

Il me semble que Boèce fait une chose comparable. Il n'est pas étonnant qu'il commence (dans *De hebdomadibus* = *Quomodo substantiae* etc.; voir l'édition de Stewart-Rand) ses exposés approfondis sur la notion de l'être par l'axiome qui a dû provoquer tant de commentaires pendant le moyen âge: *diversum est esse et quod quod est* (II 28-30: «il y a diversité entr "être" et "ce qui est"»). Cette formule, qui est valable pour tout être composé concerne la différence ontologique entre l'élément constitutif, ou la forme, de tout

être composé d'un côté, et la chose elle-même, ou le tout établi par cette forme, de l'autre. Le tout doit son être à l'élément constitutif qui est la forme substantielle, sans laquelle il n'est pas du tout. Cependant la question sur son essence ne peut pas être résolue en désignant cette forme. (...)

Il semble être utile de prendre au sérieux la suggestion des commentateurs médiévaux et d'entreprendre la réponse à notre question du point de vue sémantique. Je propose de discuter d'abord (1) la notion de *qualitas* chez Boèce (2), ensuite son modèle sémantique (3), et ses idées sur le rôle (logico-sémantique) du nom et du verbe (4-5); enfin la signification exacte de sa notion de l'être (*esse*) sera discutée (6) et éclaircie en mettant en lumière le but et la méthode du traité *Quomodo substantiae* (7)." pp. 141-142 (Notes omitted).

26. ——. 1981. "La Lexicographie Du Latin Médiéval Et L'histoire De La Logique." In *La Lexicographie Du Latin Médiéval Et Ses Rapports Avec Les Recherches Actuelles Sur La Civilisation Du Moyen Âge.*, 289-293.

Colloque international, Paris 18-21 October 1978.

"J'arrive à la conclusion de cette courte intervention.

Comme le fait remarquer Olga Weijers dans sa contribution, il faut que les divers lemmes montrent bien quelles sont les distinctions principales des divers sens d'un mot, quelles sont les nuances, quelles sont les différentes expressions dans lesquelles le mot est utilisé dans le cadre d'une même signification; bref, il faut établir le tableau sémasiologique de façon détaillée et structurée. Cette chose ne peut se faire qu'en se fondant sur une interprétation des textes assez élaborée. Cette interprétation exige l'assistance de spécialistes de divers domaines, surtout en ce qui concerne tous ceux qui, dès la période médiévale, étaient de nature assez particulière et parfois tellement ésotérique que les contemporains des auteurs médiévaux qui n'appartenaient pas au petit cercle des initiés, ne comprenaient, pas plus que

la plupart d'entre nous, cette terminologie spécialisée. Un de ces domaines était celui de la logique terministe et de la sémantique à partir du XIII^e siècle. Dans cette période bien des mots-clé ont été forgés, qui devaient être d'une grande importance pour la terminologie philosophique jusqu' à nos jours. Dans cet ordre d' idées il est essentiel que le lexique du latin médiéval ne manque pas à sa tâche." p. 292

27. ———. 1981. "Abailard's Semantic Views in the Light of Later Developments." In *English Logic and Semantics: From the End of the Twelfth Century to the Time of Ockham and Burleigh*, edited by Braakhuis, Henk A.G., Kneepkens, Corneli Henri and de Rijk, Lambertus Marie, 1-58. Nijmegen: Ingenium Publishers.

Acts of the 4th European Symposium on Mediaeval Logic and Semantics, Leiden-Nijmegen 23-27 April 1979.

Reprinted as chapter VI in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

"1. Semantics in Abailard's solution of the problem of universals. Abailard's attempt at solving the problem of universals may be characterized as a remarkable achievement in the field of semantics. The procedure of this solution found in his mature work, the *Glosses on Porphyry* (*) can be divided into two stages: first, the extensive discussion of the formal distinction between *vox* and *sermo*, the the semantic analysis of the intensional act of intellection." p. 1

(*) *Logica nostrorum petitioni*, ed. Geyer (Münster 1933), pp. 505-533 (henceforth quoted as L.N.P.)

"Finally, I will briefly sum up some of the important items of Mediaeval semantics which may be fitted into the framework of what I have labeled the 'semantic stratification of appellative names'.

First. There is the distinction of *esse actuate* and *esse habituate* as adhered to by many 13th century authors but energetically rejected by Roger Bacon, whereas William of

Sherwood turns out to stand somewhere half-way between Roger and the majority. The point at issue is the significative force of an appellative noun. Whereas others commonly accepted a name's referring to an *esse habituale* (that is, being common to present, preterite and future being and even to what actually is and what actually is not), Roger most strictly held that even in such metaphysical propositions as '*omnis homo de necessitate est animal*' the subject term can only refer to actually existing things (therefore they are all false on Roger's view). William, though admitting the distinction between *esse actuale* and *esse habituale*, regarded such propositions as equivocal. This reminds us of William's view that a name's meaning is determined by the language - users rather than by speech itself (*Synecat.*, 52, 25 - 26). The pivotal point of this controversy seems to be the different application of our *F.R.* On Roger's view, for instance, the determination '*de necessitate*' in propositions such as '*omnis homo de necessitate est animal*' is unable to strip an appellative noun of its primary function, of signifying only existing things, whereas his opponents are apparently of the opinion that that phrase compels the noun to withdraw to its second semantic level of designating just an *esse habituale*, with the result that the proposition is true.

Secondly, the problems concerning verbs expressing a mental attitude may be looked at from the same point of view. To quote Abailard (L.N.P. 531, 9 - 13; cfr. also above, pp. 4 - 5): When it is said: "I want a hood (*desidero cappam*); well, every hood is *this* or *that* hood", yet it does not follow that I want *this* or *that* hood. If, however, one would say as follows: "I want a hood; well, every one who wants a hood is wanting this or that hood; (therefore I am wanting *this* or *that* hood) ", then, indeed, the argument would go on correctly.

However, the assumption would be false, then. This much is certain, Abailard rejects that in '*I want a hood*' and '*every*

hood is this hood or that hood' the term '*hood*' has the same signification. As a matter of fact the term '*hood*' in the former proposition, unlike that in the latter proposition, does not designate a hood actually existing, (except in case, I have some particular hood in mind, of course). So we have to conclude that the verb '*desidero*' governing the object '*cappam*' precludes us from taking it for an actually existing hood and compels us to understand it in the second-level-meaning of '*a concrete, particular, hood*', whether or not actually existing." pp. 50-51.

No doubt, it is Abailard who initiated many developments in Mediaeval semantics. So I have considered it useful to draw the attention to the achievements of this great master in the field of logic, since 'the logic before Ockham' cannot be properly understood unless Abailard is recognized as the man who stood, in many respects, at the cradle of fourteenth century logic." p. 52.

28. Rijk, Lambertus Marie de, and Weijers, Olga. 1981. *Répertoire Des Commentaires Latins Du Moyen Âge Sur Aristote Conservés Dans Les Bibliothèques Publiques Aux Pays-Bas*. Amsterdam: North Holland Publishing Company. Avant-propos.

"Il y a quelques années, la Société Internationale pour l'Étude de la Philosophie Médiévale (S.I.E.P.M.) decida d'entreprendre un projet visant à cataloguer et à décrire tous les manuscrits contenant des commentaires latins du moyen âge sur les oeuvres (authentiques ou pseudépigraphes) d'Aristote, y compris, en ce qui concerne la logique, les commentaires sur l' *Isagoge* de Porphyre et sur les *Opuscles* de Boèce. Dans le présent volume nous avons voulu, conformément au projet, décrire les manuscrits qui se trouvent aux Pays-Bas.

Notons en passant que le manuscrit Utrecht, Universiteitsbibliotheek 695, qui contient selon le catalogue des questions sur le *De Anima* d'Aristote, est un recueil de textes médicaux et que le passage en question (f. 79r-90" a)

est en fait un ouvrage de médecine. Il ne sera donc pas décrit dans ce volume.

Les descriptions codicologiques sont toutes de la main du second cosignataire. Le premier soussigné, en faisant l'analyse du contenu des manuscrits, a bénéficié du concours de dr. É.P. Bos (Leyde) qui a notamment mis à sa disposition ses analyses circonstanciées des mss. Cuyck, La Haye Meermannno-Westreenianum 10 A 8 et 9 et Utrecht 825.

L. M. de Rijk, Olga Weijers"

29. Rijk, Lambertus Marie de. 1982. "Semantics in Richard Billingham and Johannes Venator." In *English Logic in Italy in the 14th and 15th Centuries*, edited by Maierù, Alfonso, 167-183.

Acts of the 5th European Symposium, Rome, 10-14 November 1980.

Reprinted as chapter XII in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*.

"I shall try to elucidate in this paper some remarkable developments of the theory of meaning found in Venator's comments upon Billingham" p. 168.

"I shall try to give a general framework of fourteenth century semantic views.

A specimen of a model of Mediaeval semantics.

It should be noticed first that any model designed in order to elucidate the peculiarities of Mediaeval semantic views should start from the well-established fact that Mediaeval logic was substantially dialogic: any statement is considered (or supposed to be) actually occurring in a disputation." p. 178

30. ———. 1982. "On Ancient and Mediaeval Semantics and Metaphysics. Part Vi. Plato's Semantics in His Critical Period (Third Part)." *Vivarium* no. 20:97-127.

5.6.7. How the diverse Kinds have communion with one another; 5.7. The reinstatement of 'What is not' (256d-259D); 5.7.1. Forms being and Forms not being; 5.7.2. The

not-being of 'What is'; 5.7.3. The being of what is not'; 5.7.4. Are there Forms corresponding to negative expressions?; 5.7.5. The Parmenidean dogma refuted. Summary;

"5. 8 Conclusion. From our analysis of *Soph.*, 216 A-259 D it may be concluded that Plato did certainly not abandon his theory of Forms. We may try to answer, now, the main questions scholarship is so sharply divided about (see Guthrie [*A History of Greek Philosophy*] V, 143ff.). They are, in Guthrie's formulation: (1) does Plato mean to attribute Change to the Forms themselves, or simply to enlarge the realm of Being to include life and intelligence which are not Forms?, and (2) is he going even further in dissent from the friends of Forms and admitting what they called Becoming --changing and perishable objects of the physical world -- as part of the realm of True Being? The first question should be answered in the negative. Indeed, Plato is defending a certain Communion of Forms, but this regards their *immanent* status and, accordingly, the physical world primarily, rather than the 'Forms themselves' (or: 'in their exalted status' as Guthrie has it, p. 159). As to the second question, to Guthrie's mind Plato's language makes it almost if not quite insoluble. I think that if one pays Plato's expositions the patient attention he asks for 'at 259 C-D and follows his analysis stage by stage, the exact sense and the precise respect in which he makes his statements (cf. 259 D 1-2: *ekeinêi kai kat' ekeino ho physi*) about Being and Not-being, Sameness and Otherness, and so on will appear. It will be easily seen, then, that there is no recantation at all in Plato's development. He still maintains, as he will maintain in his later works (e.g. *Philebus*, 14 D ff.) the Transcendent Forms as what in the last analysis are the only True Being. But Plato succeeds in giving a fuller sense to the old notions of 'sharing' and 'presence in' without detracting the 'paradigm' function of the Forms in any respect. Matter, Change and Becoming is given a better position in the Theory of Forms in that their immanent

status has been brought into the focus of Plato's interest. From his *Parmenides* onwards Plato has been searching for the solution of his metaphysical problems and has actually found it in the *Sophist* in a new view of participation. Forms in their exalted status are just a too eminent cause for the existence of the world of Becoming. But their being *shared in*, i.e. their immanent status, make them so to speak 'operable' and yet preserve their dignity of being paradeigmatic standards. What makes something to be a horse is, no doubt, the Transcendent Form, HORSENESS, but it only can *partake of* that Form and possess it as an immanent form. So the Highness of the Form and the unworthy matter can come together as matter 'informed', that is, affected by an immanent form.

Plato never was unfaithful to his original view about Forms as the only True Being. In our dialogue, too, he brings the eminence of True Being (taken, of course, as a Transcendent Form) into relief by saying (254 A) that the true philosopher, through his devotion to the Form, 'What is' ('Being'), dwells in the brightness of the divine, and the task of Dialectic, accordingly, is described from that very perspective (see Part (5), 96ff.). Focussing on the immanence of the Forms does not detract anything from their 'exalted status', since immanent forms are nothing else but the Transcendent Forms as partaken of by particulars. (...)

In his critical period Plato never ceased to believe in the Transcendent World. The important development occurring there consists in his taking more seriously than before their presence *in* matter and their activities as *immanent* forms. In the *Sophist* he uses all his ingenuity to show that a correct understanding of the Forms may safeguard us from all extremist views on being and not-being and zealous exaggerations of the Friends of Forms as well." pp. 125-127.

31. ———. 1982. *Some 14th Century Tracts on the Probationes Terminorum* (Martin of Alnwick O.F.M., Richard

Billingham, Edward Upton and Others). Nijmegen: Ingenium Publishers.

An edition of four current textbooks, with an introduction and indexes

32. ———. 1982. "The Origins of the Properties of Terms." In *The Cambridge History of Later Medieval Philosophy. From the Rediscovery of Aristotle to the Disintegration of Scholasticism*, edited by Kretzmann, Norman, Kenny, Anthony Patrick, Pinborg, Jan and Stump, Eleonore, 161-173. Cambridge: Cambridge University Press.
- "Beginning as early as the eleventh century, the relationship between thought and language was a focal point of medieval thought. This does not amount to saying that the basic nature of that relationship was being studied; rather it was accepted without discussion, as it had been in antiquity. Thought was considered to be linguistically constrained by its very nature; thought and language were taken to be related both to each other and to reality in their elements and their structure. In the final analysis, language, thought, and reality were considered to be of the same logical coherence. Language was taken to be not only an instrument of thought, expression, and communication by also in itself an important source of information regarding the nature of reality. In medieval thought, logico-semantics and metaphysical points of view are, as a result of their perceived interdependence, entirely interwoven." p. 161.

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"Two camps of scholars interpreting Parmenides' poem have recently been distinguished and labeled as the Majority and the Minority. The former holds that, unlike the Alêtheia part, the Doxa part presents an altogether untrue account of things that properly speaking have no real existence.

According to the Minority, however, the Doxa was put forward as possessing some kind or degree of cognitive validity. I shall try to show that both these two positions are ambiguous and accordingly fail in giving a clear insight into what Parmenides intends to tell us. They both seem to need correction to the extent that Parmenides does distinguish the Alêtheia route from the Doxa *route(s)*, but there is nothing in the text to tell us that he makes a distinction

between two separate domains. one true and the other untrue. As any genuine philosopher he was concerned about the sensible world, *our* world and it was *that* which he wanted to truly understand." pp. 29-30

(...)

One cannot deny that Heraclitus faced the primitive approach of the physicists in a radical way. So Parmenides in defending another steady inner nature ('Be-ing') sees in him his most dangerous rival. No wonder that his offences against Heraclitus are the most bitter. And indeed he tries to bring Heraclitus into the company of those who, two-headed as they are, are not able to make the great decision. Subsequent thinkers had to take into account Parmenides' doctrine and in fact could not help digesting its rigidity. Plato was the first to take the big decision so seriously that he left the idea of one world as approached by mortals along two different Routes and settled on the assumption of two separate worlds, one of Unshakable Being, the other of Unreliable Becoming. Aristotle, for his part, thought it possible to dispose of Plato's *chorismos* and find the inner nature of things right in themselves. No doubt it is Parmenides, cited by Fr. Owens as 'one of the truly great philosophic geniuses in the history of Western thought,' (*) who was the catalyst of all subsequent metaphysics" p. 53 J. Owens, *A history of ancient western philosophy* (New York 1959) p. 76

2. ———. 1985. "Walther Burley's Tract *De Exclusivis*. An Edition." *Vivarium* no. 23:23-54.

"Some years ago the late Jan Pinborg drew our attention to Burley's early work on propositions which contains some syncategorematic terms effecting an exclusion ('*tantum*', '*solus*'; '*only*'). (...)

The treatise is found in only three manuscripts, and one of these contains only its beginning. It belongs to the oldest group of logical writings which may be assigned to this famous English logician whose great renown is mainly due

to his sagacious tract *De puritate artis logicae*. The earlier corpus comprises six tracts which in fact form a course of logic in general use in those days:

(1) *De suppositionibus*, recently edited by Brown (Stephen F. Brown, *Walter Burleigh's Treatise De suppositionibus and Its Influence on William of Ockham*, in: *Franciscan Studies*, 32 (1972), 15-64)

(2) *De exclusivis*, which will be edited here

(3) *De exceptivis*, which will be edited in the next issue of this journal

(4) *De consequentiis*, edited by Green-Pedersen (Niels Jorgen Green Pedersen, *Walther Burley's "De consequentiis". An Edition*, in: *Franciscan Studies*, 40 (1980), 102-66)

(5) *De insolubilibus*, edited by Roure (M. L. Roure, *La problématique des propositions insolubles au XIIIe siècle et au début du XIVe, suivie de l'édition des traités de W. Shyreswood, W. Burleigh et Th. Bradwardine*, in: *Archives d'histoire doctrinale et littéraire du moyen âge*, 45 (1970), 205-84)

(6) *De obligationibus*, not edited so far. For the MSS tradition, see J. Weisheipl, *Repertorium Mertonense*, in: *Mediaeval Studies*, 31 (1969), [174-224], 196." pp. 23-24.

3. ———. 1985. "Martin M. Tweedale on Abailard. Some Criticisms of a Fascinating Venture." *Vivarium* no. 23:81-97.

See also: "Reply to Professor de Rijk's 'Martin M. Tweedale on Abailard: some criticisms of a fascinating venture' by Martin M. Tweedale in: *Vivarium* (25), 1987 pp. 3-22 and the postscript by L.M. de Rijk. id. p. 23.

"Some years ago Martin M. Tweedale wrote a book on a quite fascinating subject: *Abailard on Universals* (North Holland Publishing Company, Amsterdam, New York, Oxford, 1976). (...)

Mr. Tweedale's study is bound to give any of his readers the firm impression that, as logician, Peter Abailard has

accomplished a tremendous achievement. Unfortunately, however, Tweedale, (...) is on the wrong track in claiming-throughout his study-that the modern interpreter has to 'ferret' Abailard's answers out of 'rather obscure passages' (p. 7), and that he is inconsistent (p. X and *passim*).

Tweedale has failed to appreciate Abailard's lucidity and clear language. He has missed the point several times and more than once this is due to his defective knowledge of Latin. However, let me not move too hurriedly to my conclusion.

In writing this book, the author had two main objectives in mind, as we learn from the *Preface*. First, 'to present in a form easily accessible to professional philosophers, theologians and historians those scattered portions of Abailard's logical writings which seem to record a very original scrutiny of the foundations of logic and in particular the problem of universals'. Secondly, 'to interpret the texts in a way that would connect them with the ancient tradition and also make them intelligible to contemporary philosophers.' So chapters I and II try to give an insight into the classical and post-classical background. The core of the essay is to be found in Chapters III-V; Chapter VI contains a comparison between Abailard and Frege.

Without doubt, the author has succeeded in enlarging the modern scholar's acquaintance with, and admiration of, Abailard as a logician and early Medieval philosopher and theologian. Even someone who has had only a glimpse of the contents of this rich essay, cannot help experiencing a kind of thrill on realising that he is meeting in Peter Abailard a remarkable and original thinker.

However, to write a successful book something more is needed. To my mind the author was heavily hampered in realising the two objectives he had set himself, as a result of his poor knowledge of (both classical and Medieval) Latin grammar and syntax. Sometimes his judgment of Abailard's achievements is incorrect, for no other reason than his

inability to correctly read Abailard's concise language." 81-82

4. ———. 1985. *La Philosophie Au Moyen Âge*. Leiden: E. J. Brill.

Translation from Dutch by Pierre Swiggers of:
Middeleeuwse wijsbegeerte. Traditie en vernieuwing,
Assen, 1981

"Le présent ouvrage rassemble un nombre de cours préparatoires, tous consacrés à la philosophie médiévale. L'auteur y insiste sur le problème du caractère spécifique de cette philosophie. Il cherche à préciser son propre point de vue, e.a. par la mise-en-cause des problèmes posés par la philosophie de l'histoire. Son classement de la philosophie au Moyen Age part de la même trame. Le chapitre IV traite de la méthode scolastique et fournit des renseignements sur les points de départ des penseurs médiévaux dans le domaine des différentes disciplines.

Dans le chapitre sur la croyance et la connaissance au Moyen Age l'auteur commence par donner un exposé général du problème et ensuite il trace son évolution au moyen des preuves de l'existence de Dieu, d'Anselme (11e s.) jusqu'à Guillaume d'Ockham (14e s.). Une analyse de l'ontologie de Thomas d'Aquin donne lieu à l'auteur d'étudier la confrontation des pensées néoplatonicienne et aristotélicienne de l'époque. Le chapitre sur la logique et la sémantique médiévales permet au lecteur de s'initier à la relation entre la sémantique et le point de vue philosophique d'un auteur du Moyen Age.

Le dernier chapitre traite de la différence profonde entre le criticisme médiéval et le scepticisme de penseurs comme Montaigne. L'auteur montre que Descartes a été profondément influencé par la pensée médiévale en ce qui concerne sa victoire du scepticisme."

TABLE DES MATIÈRES. *Avant-propos de l'édition française* XI; 1. Le Moyen Age: période 'typiquement médiévale'? 1; 2. Périodisation, critique des sciences et

philosophie de l'histoire 25; 3. La division de la philosophie médiévale 65; 4. La méthode scolastique 82; 5. Croire et savoir: les arguments pour l'existence de dieu d'Anselme à Occam 106; 6. La métaphysique de l'être chez saint Thomas d'Aquin (1) 142; 7. La métaphysique de l'être chez saint Thomas d'Aquin (2) 164; 8. Lasupposition naturelle: une pierre de touche pour les points de vue philosophiques 183; 9. Scepticisme antique et criticisme médiéval 204; Notes 219; Index 235.

5. ———. 1986. *Pedro Hispano. Tractatus Llamado Después Summule Logicales*. Ciudad de México: Instituto de Investigaciones Filosóficas, UNAM.

Spanish translation by Mauricio Beuchot of: *Tractatus*, called afterwards *Summule logicales*.

6. ———. 1986. "Walther Burley's *De Exceptivis*. An Edition." *Vivarium* no. 24:22-49.

"Here is the edition of Walther Burley's early tract on the so-called 'exceptive propositions.' For some information on it, see the *Introduction* preceding my edition of Burley's *De exclusivis*, in this journal, vol. 23 (1985), pp. 23-54.

Contents

Chapters

1-3 *Introductio*

4 *Regula 1a*: omnis propositio in parte vera et in parte falsa potest verificari per exceptionem

5-15 *Dubitatio*

16 *Regula 2a*: exceptiva est preiacenti instantia

17-23 *Instantiae*

24 *Regula 3a*: si tot excipiuntur quot supponuntur, exceptiva est impropria

25-34 *Instantiae*

35-69 DE SUPPOSITIONE IN EXCEPTIVA

36-40 *De suppositione subiecti*

41-61 *De suppositione partis extracapte*

42-45 *De prima opinione*

46-54 *De secunda opinione*

55-62 *De tertia opinione*

63-69 *De suppositione predicati*

70-84 DE HABITUDINE INTER EXCEPTIVAM ET
EXCLUSIVAM

70-77 *An omnis exclusiva inferat exceptivam et econverso*

78-82 *An exceptiva inferatur ex negativa exponente
exclusive*

83-84 *An exceptiva inferatur ex affirmativa exponente
exclusive*

85-91 UTRUM EXCEPTIVA POSSIT ESSE FALSA,
UTRAQUE EXPONENTE EXISTENTE VERA

92-99 AN POST EXCEPTIONEM FIAT DISTRIBUTIO

100-109 QUID DETERMINET PREPOSITIO CUM SUO
CASUALI" p. 22

7. ——. 1986. *Plato's Sophist. A Philosophical Commentary*.
Amsterdam: North-Holland.

Contents. Preface 9; Preliminary: Plato's *Sophist* to be reconsidered? 11; Introduction 13; Chapter 1. The dispute about interpreting Plato 22; Chapter 2. The evolution of the doctrine of *Eidos* 30; Reconsidering Plato's *Sophist* 69; Chapter 3. The dialogue's main theme and procedure 71; Chapter 4. On current views about 'what is not' 82; Chapter 5. On current views about 'what is' 93; Chapter 6. Plato's novel metaphysical position 103; Chapter 7. The variety of names and the communion of kinds 110; Chapter 8. An important digression on dialectic 126; Chapter 9. The communion of kinds; Chapter 10. How the five kinds combine 159; Chapter 11. The reinstatement of 'what is not' (256d-259d) 164; Chapter 12. On philosophic and sophistic discourse 186; The framework: semantics and philosophy in Plato; Chapter 13. Plato's semantics in the *Cratylus* 217; Chapter 14. Naming and representing 254; Chapter 15. Language and knowing 277; Chapter 16. Semantics and metaphysics 327; Bibliography 355; Index of passages quoted or referred to 365; Index of proper names 377; Index of terms and topics 383-394.

From the Preface: "The way in which Plato announces (*Sophist*, 249c-d) his novel metaphysics has been puzzling modern scholars for a long time: 'What is and the All consist of what is changeless *and* what is in change, both together'. Did Plato really introduce Change into the Transcendent World and thus abandon his theory of Unchangeable Forms?

Many of Plato's commentators have claimed that the use of modern techniques of logico-semantical analysis can be a valuable aid in unravelling this problem and other difficulties Plato raised and attempted to solve. However, not all modern distinctions and tools can be applied without reservation; for many of these are entirely alien to Plato's thought. Interpreters of Plato must also resist the temptation of applying methods as disjointing the dialogue and selecting specific passages only, in their eagerness to prove that Plato was explicitly interested in (their own favourite) problems of 'identity and predication' (not to mention such oddities as the 'self-predication of Forms'), or the distinctions between different senses (or applications) of 'is'.

The present author has tried to understand Plato by a close reading of the complete dialogue and to relate the doctrinal outcome of the *Sophist* to Plato's general development. Close reading Plato involves following him in his own logico-semantical approach to the metaphysical problems, an approach which shows his deep interest in the manifold ways to 'name' (or to 'introduce into the universe of discourse') 'what is' (or the 'things there are').

The reader may be sure that my indebtedness to other authors on this subject is far greater than it may appear from my text. Also many of those who have gone in quite different directions than mine have been of great importance to me in sharpening my own views and formulations. Two authors should be mentioned *nominatim*: Gerold Prauss and the late Richard Bluck; two

scholars, whose invaluable works deserve far more attention than they have received so far.

I owe my translations of the Greek to predecessors. Where I have not followed them, my rendering is no doubt often painfully (and perhaps barbariously) literal: I do not wish to incur the suspicion of trying to improve Plato by modernising him."

8. ———. 1986. "Peter Abelard's Semantics and His Doctrine of Being." *Vivarium* no. 24:85-127.

"6. *Conclusion*. Upon surveying Abelard's investigations about sentencehood it may be stated that it certainly developed gradually and, as a result, so to speak, of our author's continuously scrutinizing the recalcitrant problems concerning the ways in which, in our linguistic behaviour, we deal with the vital problem of being.

First, Abelard makes us recognize the peculiar nature of the substantive verb 'to be' ('esse'), peculiar indeed, since it is the only verb that is capable of conjoining but, at the same time, when serving, thus, as a device for predication, conveys, due to its proper invention, the notion of 'substantialness' ('essentia'). As was said before (above, p. 109), Abelard's entire discussion of the problem is ostensibly concerned with mastering the antagonism between coupling and predication. First, he considers the vicissitudes the predicate noun cannot escape undergoing as the very result of this antagonism and finds a remedy in splitting up the different strata present in nouns such as 'album' ('the *or* a white thing'). In this endeavour, the chimaera and the like (the 'non-existents') turn out to be a real spoil-sports.

In the *Dialectica*, then, Abelard maintains, a a whole, his previous position (which is found in two parts of the *Logica Ingredientibus*, viz. the *Perihermeneias* commentary and the one on Boethius *De topicis differentiis*), but sets on to refine it in that he gives the *coupling* of 'substantialness' a predominant position over and against the *predication* of a

(substantial or accidental) form. However, he aptly combines this move (quite unavoidably, it may seem) with a subtle emptying of the notion of 'essentia' ('substantialness'), with the result that, from now on, 'est' ('is') has developed into a mere container (meaning 'undetermined substantialness') for a 're-al' ('thing-like') content (or sememe) conveyed by a predicate noun (which also may be a participle of an ordinary verb). An additional result is that, on this interpretation, the existential import seems to come from the predicate noun, so that our chimaera is no longer a spoil-sport. Finally, the empty-container view of the copula is completed by Abelard's suggestion to take the 'is' *plus* the predicate noun as merely one linguistic construct.

(...)

However this may be, Abelard's achievements in semantics are astonishingly great and even remain unparalleled for centuries." pp. 123-124 and 125.

1. Preliminary: *Significatio* in Abelard; 2. *Nomen, verbum, oratio*; 3. On the predicative-copulative function of the verb; 4. The noun and verb in Abelard. A survey; 5.

Sentencehood: connection and predication; 5.1. Some preliminary remarks on naming and predication; 5.2.

Predication as a semantic problem: linguistics vs semantics

5.3. On dating the logical works of Abelard; 5.4. Abelard's

tackling of the problem of Predication in *Glossae super*

Periermeneias; 5.5. The present interpretation confirmed by

Super Topica Glossae; 5.5. The discussion of predication in

the *Dialectica*; 6. Conclusion.

Note: This paper is meant as a continuation to the series 'On ancient and mediaeval semantics and metaphysics'

published in this Journal [Vivarium] from 1977-82. For

bibliographical reasons the original title has been dropped

and the studies will be continued under separate titles.

9. ———. 1986. "Abelard and Moral Philosophy." *Medioevo* no. 12:1-27.

"When speaking of ethics in this connection, we are not referring to a 'doctrine on human behaviour'; rather it is to be understood as the philosophical (or theological) pursuit concerning the justification of such a theory. Beforehand it must be said that Abelard's *Ethica seu Scito te ipsum* can be regarded as a theological work in being part of the curriculum presented in theological training. The central question this work deals with can be expressed as follows: what are the exact standards by which human behaviour is judged good or evil?

One should not ask whether Abelard's *Ethics* is a theological or philosophical work, for that is not the point. As we have already mentioned, ethics was part of theological enquiry and teaching. This answer is not a final one, however. For Abelard's conception of theology was such that philosophy, as an ultimate *rational* justification, was certainly admitted to theology, but, moreover, it even implied that philosophy was an essential constituent of fundamental theological enquiry. We must examine his *Ethics* in detail in order to see how Abelard in fact discusses the issue." p. 1

10. ———. 1987. "The Anatomy of the Proposition. *Logos* and *Pragma* in Plato and Aristotle." In *Logos and Pragma. Essays on the Philosophy of Language in Honour of Professor Gabriel Nuchelmans*, edited by de Rijk, Lambertus Marie and Braakhuis, Henk A.G., 27-61. Nijmegen: Ingenium Publishers.

"Introductory

This study is written in honour of a scholar who, among many other things, has laid the solid basis for the study of what may be considered the kernel of the semantics of the statement-making utterance, viz. the definition of the bearers of truth and falsity.

In the first section I present a survey of Plato's semantics of the statement-making expression and a number of key notions involved. Next, I explore Aristotle's views of the matter, starting with a discussion of Aristotle's notion of

pragma including that of being *qua* truth and not-being *qua* falsehood. In search for the nature of Aristotle's *logos*, I discuss this notion as it occurs on the *onomazein* level as well as the way in which it acts on the *legein* level. Next, I investigate the important notions of *synthesis* and *dihaeresis* and the role of *einai* as a monadic functor and *qua* syncategorematic container of categorial being. Finally, I attempt to present a characterization of Aristotle's statement-making utterance.

(...) p. 27

"Epilogue

We may summarize what we have found as follows:

1 For Plato,

1.1 a *logos* is a composite expression consisting of a name (*onoma*) and an attribute (*rhêma*) which as such is not yet a statement-making utterance

1.2 a *logos* represents a state of affairs (*pragma*), i.e. an actual combination of some participata (*dynameis*) in the outside world

1.3 a *logos eirêmenos* is a statement-making utterance; it asserts that the *pragma* represented by the *logos* is actually the case.

2 For Aristotle,

2.1 a *logos* is a composite expression consisting of an *onoma* and a *rhêma* which represents both a notional and an ontological state of affairs. It may be characterized as a 'statable complex'

2.2 a *pragma* is a state of affairs either *ontologically*: state of affairs being part of the outside world or *semantically*: state of affairs conceived of and expressed by a *logos*

2.3 a *logos apophantikos* ('statement-making utterance') is a *logos* actually stated (either asserted or denied)

2.4 a *logos* may as such be used either on the *onomazein* level or on the *legein* level (qua *logos apophantikos*).

Similarly, *phasis* (*kataphasis*, *apophasis*) may be used on either of these levels

2.5 *synthesis* is either *synthesis*₁, = the act of uniting an onoma and a rhêma into a logos (on the *onomazein* level) or *synthesis*₂ = the assertion of such a union accomplished in a *logos apophantikos*, (on the *legein* level), while *dihairesis* is always the denial of such a union (on the *legein* level)

2.6 the *esti* forming part of a *logos apophantikos* is not a copula, properly speaking. Rather, it is a sign of (it consignifies, to speak with *De interp.* 3,16b24-5) *synthesis*₂. The onoma and rhêma are already united to make up a logos ('statable complex') by *synthesis*, and, then, the *esti* rather than acting as a dyadic copulative functor, is merely a monadic sign of the 'statable complex' being actually stated

2.7 The propositional structure found in the *logos apophantikos* may be described as follows:

linguistically: a logos expressing categorial being (i.e. syncategorematic being implemented by one or more of the ten categories of being) is stated (either affirmatively or negatively) by means of the monadic functor 'be' or 'not be'
semantically: the pragma represented by the logos is said to be (or not to be, respectively) part of the outside world (or: 'be (not) the case')." pp. 53-54 (notes omitted).

11. ———. 1987. "Logic and Ontology in Ockham. Some Notes on His View of the Categories of Being and the Nature of Its Basic Principles." In *Ockham and Ockhamists. Acts of the Symposium Organized by the Dutch Society for Medieval Philosophy Medium Aevum on the Occasion of Its 10th Anniversary (Leiden, 10-12 September 1986)*, edited by Bos, Egbert Peter and Krop, Henri, 25-40. Nijmegen: Ingenium Publishers.

Reprinted as chapter XIII in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

"*Conclusion*. There is no single reason, I think, to ascribe to Ockham any feelings of hostility towards metaphysics on this account. God created 'true and real being', but He created it in shaping 'what is truly and really being', individual beings, that is. As created, it is radically

changeable and contingent as well. Uncreated, unchangeable being is not to be created, not even as some mysterious constituent present in creatural being. Human beings are not entitled to sublimate their (indispensable) conceptual tools (e.g. universal terms) so that they represent unchangeable ontic standards. Whenever we are inclined to do so, Ockham's razor comes in, not however, to make us say that the metaphysical domain is void. Rather logic (and human thought in general) should make us recognize our own limitations, and refrain from speaking about the unspeakable when, and inasmuch as, our linguistic tools are bound to lead us astray. The same applies to Ockham's view of proofs of God's existence. He only admits the proof of God as first preserver of these actual things in this actual world and rejects all atemporal proofs. However, his faith is unshakeable and not involved in any philosophical thinking either. Likewise it is Ockham's ontology (doctrine of being) which is modest, the *onta* 'beings') are as abundant as they are. For that matter, Ockham let them really be (*ontôs einai* Plato would say). Well, in order to let them *be*, human thinking should be prudent in cautiously managing its homemade conceptual apparatus." pp. 38-39

12. ——. 1987. "Gilbert De Poitiers. Ses Vues Sémantiques Et Métaphysiques." In *Gilbert De Poitiers Et Ses Contemporains: Aux Origines De La Logica Modernorum. Actes Du Septième Symposium Européen D'histoire De La Logique Et De La Sémantique Médiévales. Centre D'études Supérieures De Civilisation Médiévale De Poitiers, Poitiers, 17-22 Juin 1985*, edited by Libera, Alain de and Jolivet, Jean, 147-171. Napoli: Bibliopolis.

"La contribution à notre Symposium que je vous propose maintenant a pour but de n'envisager l'oeuvre théologique du fameux maître chartrain qu'au profit de notre connaissance de sa pensée philosophique. A l'intérieur de cette entreprise, on portera un intérêt spécial à

l'interférence des vues sémantiques et métaphysiques chez Gilbert.

Prenons notre point de départ dans son commentaire sur le *De hebdomadibus* de Boèce. On va voir que l'étude de cette oeuvre nous fera entrer dans le coeur même de la problématique." p. 147

(...)

" Je suis d'avis que la finesse des expositions théologiques et philosophiques que nous offre le Porrétain nous échappe, à moins qu'elles ne soient replacées dans leur contexte sémantique. C'est bien dans le domaine de la sémantique que Gilbert est digne du vif intérêt de l'historien de la logique médiévale. Non pas seulement parce que ses expositions sont bien imprégnées de la pensée logico-grammaticale de son temps; cela n'a rien d'étonnant étant donné qu'il s'agit d'un savant de son envergure. Mais ce qui est d'un plus grand intérêt pour nous, ce sont les contributions que Gilbert a lui-même faites à l'évolution de la pensée sémantique au douzième siècle.

L'étude des oeuvres théologiques de Gilbert nous permet d'avancer les deux thèses suivantes:

(1) C'est par l'étude sémantique qu'est favorisée au plus haut point notre compréhension des pensées théologiques et philosophiques du Porrétain; je considère comme essentielles la manière et la mesure dont Gilbert a habillé, pour ainsi dire, sa pensée théologique et philosophique du vêtement de ses pensées grammatico-logicales.

(2) En expliquant les difficultés assez pénibles dans les *opuscula sacra* de Boèce, Gilbert a formulé ses propres vues sémantiques. Celles-ci, aussi empreintes de la tradition platonicienne qu'elles soient, ne témoignent pourtant pas moins d'une profondeur vraiment originale." p. 171

13. ——. 1987. "War Ockham Ein Antimetaphysiker? Eine Semantische Betrachtung." In *Philosophie Im Mittelalter. Entwicklungslinien Und Paradigmen. Wolfgang Kluxen Zum 65. Geburtstag*, edited by Beckmann, Jan P.,

Honnefelder, Ludger and Wieland, Georg, 313-328.
Hamburg: F. Meiner.

Reprinted as chapter XIV in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

"IV. Schlußbetrachtung. Ockham anerkennt ohne Einschränkung den transzendenten Bezirk, d. h. das Metaphysische oder Übersinnliche als Bezirk; in diesem Sinne ist er also gewiß kein Antimetaphysiker. Aber verwirft er denn die Metaphysik als Wissenschaft, oder höhlt er sie zumindest aus? Zuerst muß anerkannt werden, daß Ockham im Prinzip der Metaphysik das Weisungsrecht über die Seienden (d. h., für Ockham, die individuellen Seienden) keineswegs abspricht. Zugleich kann nicht geleugnet werden, daß bei ihm der Metaphysik eine auffallend bescheidene Stelle zukommt. Wie läßt sich das unter Berücksichtigung von Ockhams unzweifelbarer Ehrfurcht vor dem Übersinnlichen erklären?

Der Schlüssel zur Lösung dieser Frage liegt nicht bloß in Ockhams Ontologie des individuellen Seins, sondern auch in seinen anthropologischen Auffassungen. Der Mensch ist nach ihm in seinen Denken und Sprechen nicht imstande, das Erhabene wesentlich zu durchforschen. Dessen soll sich der Mensch fort während eingedenk sein. Dies ist für Ockham in zwei deutliche Strategien übersetzbar:

a) nicht jedem *modus significandi* oder *loquendi* entspricht ein *modus essendi* in der Wirklichkeit

b) viele maßgebende Aussagen, sowohl sakrale wie profane, soll man nicht *de virtute sermonis* (dazu reicht unser Sprechen zuwenig aus), sondern der Absicht des Redners oder Schriftstellers entsprechend deuten." pp. 326-327 (Notes omitted).

14. Rijk, Lambertus Marie de, and Braakhuis, Henk A.G., eds. 1987. *Logos and Pragma. Essays on the Philosophy of Language in Honour of Professor Gabriel Nuchelmans*. Nijmegen: Ingenium Publishers.

Table of contents: Introduction XI; List of Professor Nuchelmans' publications 1950-1987 XI-XVII; W. E. Abraham: The strategy of Plato's philosophy of language 1; L. M. de Rijk: The anatomy of proposition: Logos and Pragma in Plato and Aristotle 27; N. Kretzmann: Boethius and the truth about tomorrow's sea battle 63; H. A. G. Braakhuis: The view of Peter of Spain on propositional composition 99; E. P. Bos: The theory of the proposition according to John Duns Scotus' two commentaries on Aristotle's *Perihermeneias* 121; E. Stump: Consequences in Ockham's *Summa Logicae* and their relation to syllogism, topics and insolubles 141; K. H. Tachau: Wodeham, Crathorn and Holcot: the development of the *Complexes significabile* 161; E. J. Ashworth: Jacobus Naveros (fl. ca. 1533) on the question: 'Do spoken words signify concepts or things?' 189; E. M. Barth: Contradictions and symmetry in the logical Interregnum. An essay in empirical logic 215; E. Morscher: Propositions and all that: ontological and epistemological reflections 241; M. F. Fresco: Über das Verhältnis von Sprache, Denken und Welt. Ontologische Fragen unter besondere Berücksichtigung der Philosophie von J. A. der Mouw 259; Bibliography 281; Index of passages quoted or referred to 299; Index of names 311; Index of concepts and terms 317.

15. Rijk, Lambertus Marie de. 1988. "De Quelques Difficultés De Nature Linguistique Dans Le Vocabulaire De Gilbert De La Porrée." In *Actes Du Colloque Terminologie De La Vie Intellectuelle Au Moyen Âge*, edited by Weijers, Olga, 19-25. Turnhout: Brepols.

Colloque at Leyde/La Haye, 20-21 September 1985.

"On sait que, comme ceux de l'Antiquité, les philosophes du moyen âge ont fait aussi leur propre vocabulaire technique. Le but de cette courte communication est de mettre en lumière quelques difficultés spéciales du vocabulaire philosophique et théologique de Gilbert de Poitiers, auteur bien connu de la première moitié du XIIe siècle.

D'abord, il faut remarquer que ces difficultés ressortent de l'usage très personnel et très original que fait Gilbert des termes courants de la langue philosophique du XII^e siècle. Il va de soi que ces difficultés sont délicates une fois de plus pour les philologues, en général pour les non-initiés en ce qui concerne l'histoire de la philosophie, parce que la confusion terminologique se présente déjà dans le domaine philosophique lui-même.

Aussi va-t-on commencer par quelques termes connus, c'est-à-dire les termes *substantia*, *subsistentia* et *subsistens* et, dans ce contexte, la différence entre *esse* et *esse aliquid*. On va essayer de placer la terminologie dans le contexte des vues philosophiques de Gilbert, en particulier de la doctrine porrétaïne sur le statut ontique de la chose concrète." p. 19.

16. ——. 1988. "Categorization' as a Key Notion in Ancient and Medieval Semantics." *Vivarium* no. 26:1-18.

"The aim of this paper is to argue for a twofold thesis: (a) for Aristotle the verb '*katêgorein*' does not as such stand for statemental predication, let alone of the well-known 'S is P' type, and (b) 'non-statemental predication' or 'categorization' plays an important role in Ancient and Medieval philosophical procedure.

1. *Katêgorein and katêgoria in Aristotle*

Aristotle was the first to use the word 'category' (*katêgoria*) as a technical term in logic and philosophy. It is commonly taken to mean 'highest predicate' and explained in terms of statement-making. From the logical point of view categories are thus considered 'potential predicates'.(*)

(...)

1.3 *Name giving ('categorization') as the key tool in the search for 'true substance'*

What Aristotle actually intends in his metaphysical discussions in the central books of his *Metaphysics* (Z-Th) is to discover the proper candidate for the name 'ousia'.

According to Aristotle, the primary kind of 'being' or 'being as such' (*to on hêi on*) can only be found in 'being-ness'

(*ousia*; see esp. *Metaph.* 1028b2). Unlike Plato, however, Aristotle is sure to find 'being as such' in the domain of things belonging to the everyday world. Aristotle's most pressing problem is to grasp the things' proper nature *qua* beings. In the search for an answer name-giving plays a decisive role: the solution to the problem consists in finding the most appropriate ('essential') name so as to bring everyday being into the discourse in such a way that precisely its 'beingness' is focussed upon.
(...)

2. *The use of 'praedicare' in Boethius*

The Greek phrase *katêgorein ti kata tinos* is usually rendered in Latin as *praedicare aliquid de aliquo*. The Latin formula primarily means 'to say something of something else' (more precisely 'of somebody'). Of course, the most common meaning of the Latin phrase is 'to predicate something of something else in making a statement of the form S = P'. However, the verb *praedicare*, just as its Greek counterpart *katêgorein*, is used more than once merely in the sense of 'naming' or 'designating by means of a certain name', regardless of the syntactic role that name performs in a statement. In such cases *praedicare* stands for the act of calling up something under a certain name (designation), a procedure that we have labelled 'categorization'. (...)

Boethius' use of *praedicare* is quite in line with what is found in other authors. Along with the familiar use of the verb for statemental predication, Boethius also frequently uses *praedicare* in the sense of 'naming' or 'designating something under a certain name' whereby the use of the designating word in predicate position is, sometimes even explicitly, ruled out." pp. 1, 4, 9-10.

(*) See L. M. de Rijk, *The Categories as Classes of Names (= On Ancient and Medieval Semantics 3)*, in: *Vivarium*, 18 (1980), 1-62, esp. 4-7

17. ———, ed. 1988. *Some Earlier Parisian Tracts on Distinctiones Sophismatum*. Nijmegen: Ingenium

Publishers.

Edited with introduction and indexes.

Content: I. Tractatus Vaticanus De multiplicatibus circa orationes accidentibus -- II. Tractatus Florianus De solutionibus sophismatum -- III. Tractatus Vaticanus De communibus distinctionibus.

18. ——. 1988. "Semantics and Metaphysics in Gilbert of Poitiers. A Chapter of Twelfth Century Platonism. Part I." *Vivarium* no. 26:73-112.

"1 *The Ontic Constituents of Natural Bodies*

There is one distinction that is of paramount importance in order for us to understand Gilbert's ontology, viz. the Boethian contradistinction of *id quod* and *id quo*. We have to start with this pair of key notions.

1.1 *Preliminary: 'id quod' and 'id quo'*

According to Gilbert, our world consists of a number of individual 'things'. This world and its inhabitants appear to have the following characteristics:

(a) each and every 'thing' is in fact to be considered as one self-contained entity, (a 'subsistens') whose identity and ontological unity are due to the singularity of what is proper to it (*sue proprietatis singularitas*; *Eut.* 30, 88; *Trin.* 144, 58-62),

(b) however, every 'subsistent' (henceforth my rendering of Latin 'subsistens') itself consists of a plurality of forms; in addition, there are 'circumstantial features' (rather than 'forms' properly speaking) that determine its actual state or condition ('status'); *Trin.* 137, 55; cf. Nielsen(*), 56-8 and below, our nrs 1.2 and 1.72.

In fact, Gilbert's ontology is one continuous attempt to establish two basic relationships, one between a natural thing and its Creator and the other between the thing's diverse actual constituents, which while being totally different from each other grant it its intrinsic unity at the same time.

(...)

1.9 Summary

Each inhabitant of our world Gilbert calls (following Boethius) an *id quod est* or *subsistens*. Its main constituents are the *subsistentiae* (or the subsistent's *id quo* which is sometimes taken collectively to stand for *ea quibus*) and these are accompanied by the 'accidents', quantity and quality. The subsistent owes its status (or transitory condition) to a collection of inferior members of the Aristotelian class of accidents, which to Gilbert's mind are rather 'accessories' or 'attachments from without' (*extrinsecus affixa*).

The term 'substantia' is used both to stand for substance and substantial form (*subsistentia*), i.e., that by which something is subsistent (or 'is a substance').

The collection of *subsistentiae* (substantial forms) or the *forma totius* is called *natura*. However, 'natura' is also used to stand for either just one *subsistentia* or all the forms found in a *subsistens* even including its 'accidental' forms (quantity and quality). The inclusion of all kinds of accidents (including those inferior ones that make up a thing's *status*) is seldom found in the intension of the word 'natura'.

One of the key notions featuring in Gilbert's ontology is *esse aliquid*. 'To be a-something' has a threefold import. First, it means 'to be only *some* thing', and to miss perfection.

Second, it has the positive sense of 'being *a something*', i.e. 'being determinate and well-delineated', not indefinite, not formless that is. Third, 'to be a something' implies concreteness, corporeality and singularity." pp. 74, 111-112 (*) Lauge Olaf Nielsen, *Theology and Philosophy in the Twelfth Century*. A study of Gilbert Porreta's thinking and the theological expositions of the doctrine of the Incarnation during the period 1130-1180, Leiden 1982.

19. ———. 1988. "On Boethius' Notion of Being. A Chapter of Boethian Semantics." In *Meaning and Inference in Medieval Philosophy. Studies in Memory of Jan Pinborg*,

edited by Kretzmann, Norman, 1-29. Dordrecht: Kluwer Academic Publishers.

Reprinted as chapter I in: *Through Language to Reality. Studies in Medieval Semantics and Metaphysics.*

"From Parmenides onwards, ancient and medieval thought had a special liking for metaphysical speculation. No doubt, speculative thought was most influentially outlined by Plato and Aristotle. However, what the Christian thinkers achieved in metaphysics was definitely more than just applying and adapting what was handed down to them. No student of medieval speculative thought can help being struck by the peculiar fact that whenever fundamental progress was made, it was theological problems which initiated the development. This applies to St Augustine and Boethius, and to the great medieval masters as well (such as Anselm, Thomas Aquinas, Duns Scotus). Their speculation was, time and again, focused on how the notion of being and the whole range of our linguistic tools can be applied to God's Nature (Being).

It is no wonder, then, that an inquiry into Boethius's notion of being should be concerned, first and foremost, with his theological treatises, especially *De hebdomadibus*.

(...)

My final section aims at showing how Boethius's notion of being is clearly articulated in accordance with his semantic distinctions. This is most clearly seen in the main argument of *De hebdomadibus* where they may be actually seen at work.

As is well known, the proper aim of *De hebdomadibus* is to point out the formal difference between *esse* and *esse bonum*, or in Boethius's words: 'the manner in which substances *are good* in virtue of their *being*, while not yet being substantially good' (38.2-4). Its method consists in a careful application of certain formal distinctions, viz.:

(a) The distinction between an object 'when taken as a subsistent whole and *id quod est* = the constitutive element

which causes the object's actually' being; it is made in Axiom II and used in Axiom IV.

(b) The distinction (closely related to the preceding one) obtaining between the constitutive element effecting the object's actual being (*forma essendi*, or *ipsum esse*) and the object's actuality as such (*id quod est* or *ipsum est*); it is made in Axioms VII and VIII.

(c) The distinction between *esse* as 'pure being' (= *nihil aliud praeter se habens admixtum*), which belongs to any form, whether substantial or incidental, and *id quod est* admitting of some admixture (lit. 'something besides what it is itself'); it is made in Axiom IV and in fact implies the distinction between *esse simpliciter* and *esse aliquid*.

(d) The distinction between 'just being some thing', *tantum esse aliquid*, and 'being something *qua* mode of being'. It is made in Axiom V and used in Axiom VI and is in fact concerned with a further distinction made within the notion of *id quod est*. It points out the differences between the effect caused by some form as constitutive of being *some* thing and that caused by the main constituent (*forma essendi*) which causes an object's *being simpliciter*.

(e) The distinction between two different modes of participation, one effecting an object's *being subsistent*, the other its being *some* thing, where the 'some thing' (*aliquid*) refers to some (non-subsistent) quality such as 'being white', 'being wise', 'being good', etc.

The application of these distinctions enables Boethius to present a solution to the main problem: although the objects (*ea quae sunt*, plural of *id quod est*) *are* (*are good*) through their own constitutive element, *being* (*being good*), nevertheless they are not identical with their constitutive element nor (*a fortiori*) with the IPSUM ESSE (BONUM ESSE) of which their constituent is only a participation." pp. 1 and 22-23.

20. ——. 1989. "Semantics and Metaphysics in Gilbert of Poitiers. A Chapter of Twelfth Century Platonism. Part II."

Vivarium no. 27:1-35.

"Gilbert's View of Transcendent Reality.

Gilbert's world consists of quite a lot of singular subsistent objects which owe their being and 'being-a-something' to a collection of forms, both subsistent and accidental. Well, God has created this world after what in the Platonic tradition was called the 'exemplary Forms'. For Gilbert, creation and concretion are two complementary notions which play an important role in his ontology. Creation is the reception of a total form or collection of subsistentiae; it is also called generation. As a natural process it amounts to 'beginning to be-of-acertain-kind'.

(...)

POSTSCRIPT. In his short study on Gilbert of Poitiers (in *A History of Twelfth-Century Western Philosophy*, ed. Peter Dronke, Cambridge 1988, 328-52) John Marenbon rightly argues that when presenting an account of Gilbert's thought one should not separate his philosophy from his theology. However, I fully disagree with his suggestion (p. 351) that as a metaphysician Gilbert proves to have been a thinker whose 'treatment is inadequate and confused'. On the contrary, when dealing with really intricate theological problems Gilbert of Poitiers, like many other Medieval thinkers (e.g. Thomas Aquinas), develops his (NeoPlatonic) metaphysics as a 'clear-minded and subtle writer', and so there seems to be no reason at all to oppose Gilbert against people like Aquinas, Scotus, Ockham and others. They were all real philosophers, albeit in a theological context, which *as such* confronted them with a series of genuinely philosophical issues. In fact, why should any historian of philosophy approach only Gilbert of Poitiers 'as a thinker who tackled a set of changeless (*sic!*) metaphysical problems-identical (*sic!*) to those which faced, for instance, Plato and Aristotle, or Kant and Hegel'?" pp. 1, 34-35.

21. ——. 1989. *Through Language to Reality. Studies in Medieval Semantics and Metaphysics*. Northampton:

Variorum Reprints.

The volume is dedicated to L. M. De Rijk on the occasion of his 65th birthday.

Contents

Preface IX-XI; SIXTH CENTURY: I. On Boethius's notion of Being. A chapter of Boethian semantics; TWELFTH CENTURY: Peter Abälard (1079-1142): Meister und Opfer des Scharfsinns; III. The semantical impact of Abailard's solution of the problem of universals; IV. La signification de la proposition (*dictum propositionis*) chez Abélard; V. Die Wirkung der neuplatonischen Semantik auf das mittelalterliche Denken über das Sein; VI: Abailard's semantics views in the light of later developments; THIRTEENTH CENTURY: VII. Die Bedeutungslehre der Logik im 13. Jahrhundert und ihr Gegenstück in der metaphysischen Spekulation; VIII. Each man's ass is not everybody's ass. On an important item in 13th-century semantics; IX. The development of *Suppositio naturalis* in mediaeval logic, I. Natural suppositiojn as non-contextual supposition; FOURTEENTH CENTURY: X. The development of *Suppositio naturalis* in mediaeval logic, II. 14th-century natural supposition as atemporal (omnitemporal) supposition; XI: On Buridan's doctrine of connotation; XII. Semantics in Richard Billingham and Johannes Venator; XIII. Logic and ontology in Ockham. Some notes on his view of the categories of Being and the nature of its basic principles; XIV. War Ockham ein Antimetaphysicker? Eine semantische Betrachtung; Indexes. 1. Manuscripts; 2. Anonymous tract; 3. Ancient and medieval names; 4. Modern names; 5. Subjects and terms. (This volume contains XII + 322 pages).

22. ———. 1989. "Ist Logos Satz? Zu Heideggers Auffassung Von Platons Stellung 'Am Anfänge Der Metaphysik'." In *Heideggers These Vom Ende Der Philosophie. Verhandlungen Des Leidener Heidegger-Symposiums*

- (April 1984), edited by Fresco, Marcel, Van Dijk, Rob and Vijgeboom, Peter, 22-32. Bonn: Bouvier Verlag.
23. ———. 1989. "Einiges Zu Den Hintergünden Der Scotistischen Beweistheorie: Die Schlüsselrolle Des Sein-Könnens (*Esse Possibile*).²³" In *Die Kölner Universität Im Mittelalter. Geistige Wurzeln Und Soziale Wirklichkeit*, edited by Zimmermann, Albert, 176-191. Berlin: Walter de Gruyter.
24. Peter, of Spain. 1990. *Language in Dispute: An English Translation by Francis P. Dinneen of Peter of Spain's Tractatus Called Afterwards Summulae Logicales*. Amsterdam, Philadelphia: J. Benjamins.
On the basis of the critical edition established by L. M. De Rijk
25. Rijk, Lambertus Marie de. 1990. "Ockham's Theory of Demonstration: His Use of Aristotle's *Kath' Holou* and *Kath' Hauto* Requirements." In *Die Gegenwart Ockhams*, edited by Vossenkuhl, Wilhelm and Schönberger, Rolf, 232-240. Weinheim: VCH-Verlagsgesellschaft.
"Far from being a sceptic William of Ockham made every effort to corroborate the basis of philosophical and theological thought by purifying it of all sorts of untenable presuppositions. His main contribution to fourteenth century philosophical and theological development lies in systematically rethinking scholastic doctrines, and especially their assumptions, on the firm basis of his own favourite leading principles: the strictly individual nature of all that really is and the radical contingency of all creatural being.
These two principles also play a major part in Ockham's way of dealing with the Aristotelian theory of demonstration. The present paper aims at investigating Ockham's doctrine of demonstrative proof, focusing on the way in which he felt forced to adapt or rephrase the special requirements Aristotle had laid down for propositions to enter into syllogistic proof, especially strict proof (the so-called '*demonstratio potissima*'). Our main argument will concern

Aristotle's rather peculiar '*kath holou*' requirement and Ockham's appliance of the '*kath hautou*' (Latin: 'per se') notion which is also involved in framing correct premisses for demonstrative proofs. A few preliminary remarks will be made about the essentials of Aristotle's theory of demonstration." p. 232

(...)

"Conclusions.

To sum up our findings: Ockham's adaptations and manipulations of Aristotle's requirements for genuine demonstrative propositions are as many demands imposed by his own metaphysical views. He comments on Aristotle, always starting from his own favourite views. Though Aristotle is the Master, Ockham is the one to say what the Master meant, or what he should have meant. On the other hand, his introducing the '*per se strictissimo modo*' rather seems to be a matter of technicality. Whereas in *Posterior Analytics* Aristotle deals with the scientific procedure of *apodeixis* in general, in which the apodeictic syllogism is merely a vehicle for correctly framing an *apodeixis*, the Medievals, and Ockham in particular, were apt to reduce Aristotle's theory of demonstrative proof to a theory of demonstrative syllogism. That is why the '*demonstratio potissima*' (including its specific demands) so heavily influenced Ockham's theory of demonstration." p. 239

26. ———. 1990. "Specific Tools Concerning Logical Education." In *Méthodes Et Instruments Du Travail Intellectuel Au Moyen Âge*, edited by Weijers, Olga, 62-81. Turnhout: Brepols.

"Unlike in our days logical doctrine was very influential in the Middle Ages. Logic was indeed considered then the vehicle par excellence both in matters of teaching and scientific inquiry in any field of knowledge. When embarking upon a discussion of the specific terminology concerning logical education, some preliminary remarks seem to be indispensable.

The reader should be warned, first. Logical theory taken as such, which comprises a great mass of specifically logical terms (such as 'praedicamentum', 'predicable', 'syllogism', 'fallacy', 'supposition', 'appellation', 'ampliation', 'distribution', 'syncategorema', and so on) is out of scope now; those terms and their like will be mentioned only in passing, inasfar namely as they occur in educational practice.

Another remark better starts from the well-known Medieval distinction between *logica docens* and *logica utens*, the former of which being logical doctrine as developed, expounded and taught for its own sake, whereas the latter is rather logic practically applied in any sort of logical analysis or argumentation. To be sure, *logica utens* does not merely coincide with the more or less explicit occurrence of logical argumentation in whatever context. Even *qua logica utens* the art of logic displayed a high degree of technicality. In other words: medieval *logica utens* rather than being practical argumentation as loosely accomplished by somebody who exhibited a remarkable natural ability for logical reasoning consisted in the performance of somebody being really well-versed in all those logical techniques he had been taught in his youth in class room. So, whoever is interested in specific terms of logical teaching and learning should surely not leave exhibitions of *logica utens* out of consideration (*).

Our third remark which is in the line of the previous one, concerns the remarkably wide scope of *logica utens*. Of course, *logica docens* played a very important part in Medieval education, as may be also gathered from its predominant position in Medieval curricula. However, according to a good Peripatetic tradition, logic was taken to serve as the organon or instrument of all other branches of learning and science, which means that logic, and logic alone, provided other disciplines with the correct art of thinking and reasoning. Thus logic proves to have been

effectually present, for example, in theological disputation, a fact that every student of Medieval theology is fully aware of. But it had an equally prevailing position in other fields of learning, too, such as Natural science ("Physics"), Ethics and even Political philosophy.

A final preliminary remark aims at elucidating the large scope of Medieval logic from still another point of view, viz. the close relationship between scientific inquiry and exposition as well as scientific education in the Middle Ages. That is to say that scientific inquiry and exposition as well as education and learning were controlled by the same didactics of exposition and argumentation. Indeed, nearly all Medieval writings that contain scholarly investigations in any field of learning whatsoever display didactic approaches which are quite similar to those used by works mainly intended for instruction, no matter for the benefit of beginners or advanced people." pp. 62-63

(*) For the contradistinction of *dialectica docens* and *dialectica utens* both of them especially concerned with the use of logical topics (*loci*), see Eleonore Stump, *Topics: their development and absorption into consequences* in *The Cambridge History of Later Medieval Philosophy*, 1982, p. 281, n. 41.

27. ———. 1990. "The Posterior Analytics in the Latin West." In *Knowledge and the Sciences in Medieval Philosophy. Proceedings of the Eight International Congress of Medieval Philosophy (Siepm), Helsinki, 24-29 August 1987*, edited by Asztalos, Monika, Murdoch, John Emery and Niiniluoto, Ilkka, 104-127. Helsinki: Acta Philosophica Fennica.

Volume I.

"It is common knowledge that Aristotle had the conviction that all reality was to be found within our world of sensible experience and that Plato's assumption of another, Transcendent World of Perfect Being was merely 'empty talk and poetic metaphor' (*Metaph.* A9, 991a20). Indeed,

Aristotle took Plato's Forms to be quite useless for explaining the possibility of true knowledge about our world. However, like his master, Plato, Aristotle stuck to the Parmenidean conviction about the real existence of unchanging formal principles of being. As is well-known, his formal principles are *in* things as their immanent dynamic natures (*eidê*).

For Aristotle, true knowledge concerns the essential natures immanent in things (see e.g. *Metaph.*, 991a12-3; 999a24-9; 1018b36; 1032b1 ff. et alibi). To be sure, all being is individual being and so Aristotle is compelled to answer the quite intriguing question: if the proper object of true knowledge is universal nature and everything real is a particular, how, then, are we able to gain genuine knowledge about the things in their own right? In his *Posterior Analytics* Aristotle explains what he understands by truly knowing things. Well, quite in line with his philosophical stand, Aristotle claims that all scientific knowledge is concerned with discerning a universal nature as *immanent in* a particular. In I 2, 72a75-7 e.g., it is explicitly said that the elements of the deduction are such and such *in concreto* (cf. 73a29-31). For Aristotle, demonstration in fact concerns some *phenomenal state of affairs* of which the investigation aims to clarify the essential structures." p. 102

(...)

"Aristotle's description of induction and its role in the scientific process fits in remarkably well with what he has earlier remarked about the process of proper categorization. Referring to the well-known battle simile - how a general retreat comes to an end after one man makes a stand, and then another *etc.*, the author argues that 'as soon as one of the undifferentiated percepts makes a stand, there is a primitive universal in the mind ... until the highest genera have been reached' (II 19, 100a14-b4).

The faculty, or rather cognitive attitude, by which we become familiar with the first principles is the *Nous* or intellectual apprehension. Well, just as the *Nous* precedes all principles (such as axioms etc.), in the same way scientific knowledge covers the whole domain of states of affairs (*pragmata*), Aristotle concludes (100b16-17).

Let us try, now, in the next sections, to discover the Medievals' doctrinal reception of the *Posterior Analytics* by discussing their views of some themes characteristic of Aristotle's scientific method. It would be useful, to that end, to single out the following items: the Medievals' discussion of the well-known four questions, their views of the three requirements for 'hunting essential attributes', their (different) views of necessity, and, finally, the Medieval conceptions of induction and our knowledge of the First Principles." p. 110

28. ——. 1990. "Un Tournant Important Dans L'usage Du Mot 'Idea' Chez Henri De Gand." In *Idea. Vi Colloquio Internazionale Del Lessico Internazionale Europeo. Roma, 5-7 Gennaio 1989*, edited by Fattori, Marta and Bianchi, Massimo Luigi, 89-98. Roma: Edizioni dell'Ateneo.

"1. *Introduction*. On sait que le terme 'idée' était un mot-clé dans la métaphysique de Platon. Les exposés importants de ce matin ont rendu entièrement superflu de rappeler le rôle du mot *idea* chez Platon ainsi que dans la tradition platonicienne et dans la patristique.

Les communications que nous venons d'écouter cet après-midi nous ont fait comprendre l'importance du mot latin *idea*, ou plutôt la valeur de la notion d'idée, dont le mot *idea* n'était que l'un des véhicules à côté de *forma*, *species*, *notio*, *conceptus*, *intentio*, etc.

Il n'est pas nécessaire d'être spécialiste de l'histoire de la philosophie médiévale pour bien savoir que, quelle que soit la dette des auteurs médiévaux envers des sources antiques, et quel que fût le respect qu'ils ont ressenti envers toute autorité -- les sources ne les ont cependant jamais empêchés

de suivre leur propre voie au fur et à mesure que cela s'imposait dans l'intérêt de leur réflexions philosophiques. C'est pourquoi l'étude de l'usage des termes philosophiques et leur développement au cours du moyen-âge n'est pas seulement d'intérêt linguistique. Au contraire, l'analyse de ce développement est tout à fait indispensable pour bien comprendre les doctrines philosophiques elles-mêmes de la période médiévale.

Je me propose dans cette communication de mettre en relief le tournant important qu'a subi l'usage du mot latin *idea* chez certains auteurs de la seconde moitié du 13^e siècle, usage, bien entendu, qui s'est prolongé au 14^e siècle. La figure centrale sera celle du philosophe flamand Henri de Gand (mort en 1293).

Comme je viens de vous suggérer, ce tournant est significatif d'un développement doctrinal chez ces auteurs. Aussi ce développement doctrinal s'impose comme le cadre adapté aux exigences d'un exposé sémantique à propos de l'usage du mot *idea*, disons après saint Thomas d'Aquin (mort en 1277)." p. 89

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Annotated Bibliography of Lambertus Marie de Rijk. Fourth Part: from 1991 to 2012

BIBLIOGRAPHY

1. Rijk, Lambertus Marie de. 1991. "Two Short Questions on Proclean Metaphysics in Paris B. N. Lat. 16.096." *Vivarium* no. 29:1-12.

" The collectaneous manuscript Paris, B.N. lat. 16.096 (formerly belonging to the codices Sorbonnenses) contains (ff. 172va-177vb, which part dates, it seems, from the second half of the 13th century) some anonymous questions referred to by the catalogue (*) as Quaestiones super librum Posteriorum. This description, however, is incorrect as these questions have no bearing whatsoever on the doctrine of Aristotle's Posterior Analytics. Actually, they are two short metaphysical questions (called expositiones by the author) on the key notions of 'beingness' and 'oneness' respectively, followed by a longer, incomplete treatise on the nature of the components of a definition (or rather a diffinitum).
(...)

Only two of the five questions announced in the beginning of this third treatise are preserved. One of them deals with the problem of whether the definition consisting of genus and differentia requires a real composition of the

components of the diffinitum, the other examines whether immaterial substances are composite in some respects. Unlike the first two tracts, the third does not show any influence of Neoplatonic doctrine.

To my knowledge, the expositions on Ens and Unum have only come down to us in the Paris manuscript. They are interesting in that the author makes a successful effort to penetrate some of the basic views of Proclean metaphysics." pp. 1-2 (notes omitted)

(*) L. Delisle, *Inventaire des manuscrits latins de la Sorbonne, conservés à la Bibliothèque Impériale sous les nos. 15.176-16.718 du fonds latin*, in: *Bibliothèque de l'École des chartes*, 31 (1870), 135 ff.

2. Peter, of Spain. 1992. *Peter of Spain. Syncategoreumata*. Leiden: Brill.

First critical edition with an introduction, critical apparatus, indexes and an English translation by Joke Spruyt.

Peter of Spain (ca 1205-77) who, in 1276, became Pope under the name of John XXI, was the author of an impressive number of scholarly works, inter alia the *Tractatus* (a textbook of logic, widely known afterwards under the title *Summule logicales*) and the *Syncategoreumata*. The latter work, which deals with syncategorematic terms, is here critically edited for the first time, together with an English translation.

Peter's authorship of the *Syncategoreumata* is beyond all doubt: it is confirmed again and again by nearly all our manuscripts. As to the date and place of origin of the *Syncategoreumata*: they were surely written after the *Tractatus* (which were written not later than the 1230's, see my Introduction to the edition of this work, p. LV-LVII). There is no reason at all to assume a connection between the *Syncategoreumata* and Peter's stay at the University of Paris, which he left in 1229, before the composition of the *Tractatus*. Clearly, Paris does not play any role in the early diffusion of the *Syncategoreumata*. It seems highly

probable, therefore, that the Syncategoreumata were written by Peter in the same region where he wrote the Tractatus, i.e. Northern Spain or Southern France. The work's most likely date is between 1235-1245 (cf. my Introduction to the Tractatus, pp. XXXIV-LXI). From Peter's use of *lectio* (see X, cap. 8) it may be concluded that the Syncategoreumata were meant as a piece of school-teaching.

Content of the English translation: Introduction 39; Chapter 1. On composition 45; Chapter 2. On negation 73; Chapter 3. On exclusive words 105; Chapter 4. On exceptive words; Chapter 5. On consecutive words 197; Chapter 6. On the verbs 'begins' and 'ceases' 249; Chapter 7. On the words 'necessarily' (*necessario*) and 'contingently' (*contingenter*) 283; Chapter 8. On conjunctions 307; Chapter 9. On 'Quanto', 'Quam' and 'Quicquid'; Chapter 10. On answers 425; Critical apparatus 434; Index locorum 572; Index rerum notabilium 574; Index sophismatum 613.

3. Rijk, Lambertus Marie de. 1992. "Causation and Participation in Proclus. The Pivotal Role of Scope Distinction." In *On Proclus and His Influence in Medieval Philosophy*, edited by Meijer, Pieter Ane and Bos, Egbert Peter, 1-34. Leiden: Brill.
 1. Status questionis; 2. Causation and participation in Plato;
 3. Procession and participation in Plotinus and Jamblichus;
 4. Proclus' refined metaphysics; 4.1 Preliminary; 4.2 The Proclean universe from the viewpoint of causation; 4.3 The Proclean universe from the viewpoint of participation; 5. The meaning of *amethekton* and *metekomenon* in Proclus; 5.1 *Méthexis* c.a. in the *Elementatio*; 5.2 *Méthexis* c.a. in the *Platonic Theology*; The basic role of the *metexomenon* for continuity and reversion; Scope distinction in Neoplatonic doctrine and procedure; 7.1 Two famous cases of scope distinction in Proclus; 7.2 Scope distinction deliberately applied and recommended; 7.3 The philosophical impact of scope distinction in Neoplatonism.

"The present paper aims to investigate in some more detail the transcendence-immanence antinomy. First an outline of its historical background will be presented from Plato onward through Plotinus and Jamblichus up to Proclus. Next I shall discuss Proclus' doctrine on these matters in the larger perspective of his philosophy, and focus on the intriguing notion of *amethekton*. Finally a few remarks will be added on the important role of what we might call 'scope distinction' in Proclus' doctrines and dialectical arguments." p. 2.

4. ——. 1992. "John Buridan on Universals." *Revue de Métaphysique et de Morale* no. 97:35-59.

"It is common knowledge that Plato strongly believed that, in order to explain the nature of whatever is (either things or states of affairs, including Man and his environment), the assumption of Transcendent Universal Forms is indispensable. In his view, these universal Forms are the ontic causes of each and every sublunary entity, which all owe their being to their sharing in these Forms. Consequently, everyone who is in want of firm knowledge (*episteme*) about the things of the outside world is bound to direct his attention to the transcendent domain of the universal Forms'.

However, Plato was the first to recognise, and seriously deal with, the objections that can be raised to this doctrine. These objections mainly concern the status (and the dignity, however modest) of our transient world and, above all, the possibility to obtain, true knowledge of this world as *it stands*, in its ever-changing nature, that is." p. 35 (...)

"To be sure, the Medievals all rejected the Platonic Ideas taken as separate substances and they adhered to the Aristotelian common sense principle that only individuals have independent existence. Nevertheless, they were still under the spell of the status of «universal being» as the indispensable basis of true knowledge.

Marylin McCord Adams has analysed some early fourteenth century solutions to the problem of universals (Scotus, Ockham, Burley and Harclay) (*). In McCord's article Buridan's view of the matter is left out of consideration. Quite understandably so, since Buridan's solution to the problem differs considerably from the sophisticated arguments given by his contemporaries. Buridan seeks for a solution in analysing the several ways of human understanding. In directing his attention to the propositional attitude involved in the cognitive procedure Buridan is remarkably close to the ingenious solution Peter Abelard had come up with two centuries earlier. In the next sections I shall give an outline of Abelard's treatment of the question of universals followed by an analysis of Buridan's discussion of the matter (as found in his commentary on the *Metaphysics* and elsewhere)." p. 37

(...)

"We may conclude, then, that two bright logicians of the Parisian tradition have come up with quite an ingenious solution to the problem of universals. Both of them started out from the firm conviction that nothing exists but particulars. Nevertheless, they apparently were not satisfied with purely extensional solutions as brought forward by Oxford logicians such as Heytesbury and Ockham. Maybe extensionalists are out to show how people *ought* to think. Abelard and Buridan, however, were especially interested in the various ways of conceiving we *actually* use in daily life, in our attempts to conceptually deal with the outside world."

p. 59

(*) "Universals in the early Fourteenth century" in *Cambridge History of Later Medieval Philosophy, from the rediscovery of Aristotle to the desintegration of Scholasticism 1100-1600* pp. 411-439.

5. ———. 1992. "Peter Abelard (1079-1142)." In *Philosophy of Language/Sprachphilosophie/La Philosophie Du Langage. Eine Internationales Handbuch Zeitgenössischer*

Forschung, edited by Dascal, Marcelo, Gerhardus, Dietfried, Lorenz, KUuno and Meggle, Georg, 290-296. Berlin: Walter de Gruyter.

First volume

6. ———. 1993. "Der Streit Über Das *Medium Demonstrationis*: Die Frucht Eines Misverständnisses?" In *Argumentationstheorie. Scholastische Forschungen Zu Den Logischen Und Semantischen Regeln Korrekten Folgerns*, edited by Jacobi, Klaus, 451-463. Leiden: Brill.
"In der alten Ausgabe des Kommentars zu den *Zweiten Analytiken* von Aegidius Romanus' findet sich nach dem Kommentar eine kurze Abhandlung aus der Feder des Augustiner-Eremiten Augustinus de Biella. Sie wurde zur Verteidigung der Auffassung des Aegidius über das *medium demonstrationis* geschrieben. Aegidius hatte gelehrt, daß bei einer *demonstratio potissima* (also bei der aristotelischen Apodeixis im strengsten Sinne) das *medium* sich aus der Definition des Attributs (*passio*) ergebe, und nicht, wie die *communis opinio* lautete, aus der Definition des Subjekts. Wie üblich, fängt Biella damit an, Argumente gegen die Auffassung Aegidius' anzuführen, um dieselben anschließend zu widerlegen. Biella hat aber augenscheinlich den Text von Aegidius nicht zur Hand gehabt, denn er fährt fort, *dominus* Aegidius sei wohl dieser Auffassung über (las *rmedium demonstrationis* gewesen, "wie ich von den *doctores ordinis* (*Tatrum heremitarum* gehört habe" (oder: "wie ich es deren Schriften entnommen habe")." p.451
7. ———. 1993. "La Supposizione Naturale: Una Pietra Di Paragone Per I Punti Di Vista Filosofici." In *Logica E Linguaggio Nel Medioevo*, edited by Fedriga, Riccardo and Poggioni, Sara, 185-220. Milano: LED, Edizioni universitarie di lettere, economia, diritto.
Italian translation of: "La philosophie au moyen âge" chapter 8, pp. 184-203
8. ———. 1993. "On Buridan's View of Accidental Being." In *John Buridan: A Master of Arts. Some Aspects of His Philosophy. Acts of the Second Symposium Organized by*

the Dutch Society for Medieval Philosophy Medium Aevum on the Occasion of Its 15th Anniversary.

Leiden-Amsterdam (Vrije Universiteit), 20-21 June, 1991., edited by Bos, Egbert Peter and Krop, Henri, 41-51.

Nijmegen: Ingenium Publishers.

"One of the most striking characteristics of late medieval metaphysics is the upgrading of 'accidental being'. The strict opposition between '*esse per se*' and '*esse per accidens*', which had been of paramount importance ever since Aristotle, has lost its relevance in the ontological discussions of the fourteenth century. The status of 'accidental being' came rather close to that of 'substantial being'. In the views of philosophers such as Ockham and Buridan (not to mention thinkers like Crathorn) the nature of 'accidental being' (or rather 'quantitative and qualitative being') can no longer be properly defined in terms of ontological dependency upon substance. In other words, '*per se* subsistence' is assigned not only to substance but to 'accidental being' as well.

In the present contribution I will illustrate this development by discussing some of Buridan's expositions in his *Questiones* commentary on Aristotle's *Metaphysics* (IV, q. 6 and VII, q. 3-4)." p. 41

9. ———. 1993. "Works by Gerald Ot (*Gerardus Odonis*) on Logic, Metaphysics and Natural Philosophy Rediscovered in Madrid, Bibl. Nac. 4229." *Archives d'Histoire Doctrinale et Littéraire du Moyen Âge* no. 60:173-193; 378.

"Some twenty years ago I discovered in the Biblioteca Nacional in Madrid a very interesting manuscript with works (all of them anonymous, to be sure) on logic, metaphysics and natural philosophy. In fact, my discovery turned out to be a rediscovery, for the manuscript contained a note written by the famous historian of Franciscan philosophy and theology, Father Ephrem Longpré OFM, which said that, with the exception of the writings occurring

from fol. 204r onwards, all tracts found in this codex are by a Franciscan master, Gerardus Odonis. (...)

Gerard Odon OFM (who as Patriarch of Antiochia died in 1349 of the plague, at Catania, Sicily, where he was gifted with the benefices of a wealthy church) is especially known as the much troubled successor of the deposed Michael of Cesena as Master General of the Franciscan Order and a close adherent of Pope John XXII in the debate on the beatific vision." p. 173

"The Ms Madrid, Bibl. Nac. 4229 appears to be of the utmost importance for our knowledge of Gerard Odon's doctrine on several subjects in the fields of logic, metaphysics and natural philosophy. To establish his authorship of all the works as occurring in the present Ms with certainty requires more research. The results of the present investigations can be summarised in the following survey:

I LOGIC:

1.1 *Quid est subiectum in logica* (69va-74rb)

1.2 *De sillogismis* (1ra-19va)

1.3 *De tribus dubiis circa naturam dictionum exclusivarum et suppositionis simpliciter simplicis* (37rb-43ra)

1.4 *De principiis scientiarum* (45ra-69va)

II METAPHYSICS:

2.1 *De intentionibus* (incomplete; 74va-122vb)

2.2 *De esse et essentia* (125ra-132vb)

2.3 *De principiis nature* (156ra-174vb, together with 19va-28vb)

2.4 *De natura universalis* (incomplete; 204ra-207vb)

III NATURAL PHILOSOPHY:

3.1 *De augmento forme* (132vb-150rb)

3.2 *De intensione et remissione formarum* (175ra-179ra)

3.3 *De continuo* (179rb-186vb)

3.4 *De loco* (187ra-192va)

3.5 *De tempore* (192vb-199va)

3.6 *De motu* (199vb-203vb)" p. 193

10. ———. 1994. "John Buridan on Man's Capability of Grasping the Truth." In *Scientia Et Ars Im Hoch- Und Spätmittelalter*, edited by Craemer-Rügenberg, Ingrid and Speer, Andreas, 282-303. Berlin, New York: Walter de Gruyter.

Miscellanea Mediaevalia, vol. 22/1.

"As is well-known, two subjects are distinctive of the fourteenth century theory of cognition, namely '*certitudo*' and '*evidentia*'. It is true, thirteenth century philosophers, such as Thomas Aquinas, were also concerned with certitude and evidentness as indispensable requisites for 'true knowledge' ('*scientia*'). However, until the end of the thirteenth century certitude and evidentness were not prominent in the discussions about the cognitive procedure nor were they treated as separate matters, requiring separate attention. In Thomas Aquinas for example, the conviction that man is really capable of grasping the truth with certainty is really constitutive of his philosophical (and theological) thought and praxis (*), or to speak with J. A. Aertsen, of 'Thomas' way of thought'.(**) This, however, does not alter the fact that in Aquinas' philosophy '*certitudo*' is not highlighted as such, and the specific role of '*evidentia*' is even virtually ignored.

Buridan's theory of cognition, on the contrary, clearly focusses on the ingredients '*certitudo*' and '*evidentia*', and, within this framework, on the notion of '*assensus*'. In the present paper I aim to elucidate the role of this key notion of John Buridan's theory of cognition."

(*) See the excellent paper by Gerard Verbeke, "Certitude et incertitude de la recherche philosophique selon saint Thomas d'Aquin", in: *Rivista di Filosofia neo-scolastica* 66 (1974), 740-57.

(**) Jan Aertsen, *Nature and Creature. Thomas Aquinas' Way of Thought*. Studien und Texte zur Geistesgeschichte des Mittelalters herausgegeben von Albert Zimmermann, Band XXI, Leiden etc. 1988, passim.

11. ———. 1994. *Nicholas of Autrecourt. His Correspondence with Master Giles and Bernard of Arezzo*. Leiden: Brill.
A critical edition from the two Parisian manuscripts with an introduction, English translation, explanatory notes and indexes.

Contents: Acknowledgements IX; Introduction 1; 1.

Nicholas of Autrecourt. Life and works 1; 2. Nicholas' correspondence with Bernard and Giles 5; 3. The extant letters. Their tradition and structure 24; 4. Principles of the present edition and translation 37; Conspectus siglorum 45; Text and translation 46; Explanatory notes 113; Appendices 139; Indices 209; Bibliography 238.

"The present edition is based on the two Mss hitherto known, Paris, *BN lat.* 16408 (A) and 16409 (B). They are far from being perfect as they derive from exemplars that were themselves not quite reliable witnesses of the letters.

However, they provide sufficient support for constituting a critical edition.

(...)

A translation is provided in order to make the letters accessible to all those who are not well-acquainted with Latin grammar and idiom. For that matter, Nicholas writes in a fairly clear and occasionally vivid Latin, but he is not a talented stylist. At times, he is not very particular about contaminated constructions. I have tried to smooth away some of these solecisms." pp 37-38.

12. ———. 1994. "A Special Use of *Ratio* in 13th and 14th Century Metaphysics." In *Ratio. Vii Colloquio Del Lessico Intellettuale Europeo. Roma, 9-11 Gennaio 1992*, edited by Fattori, Marta and Bianchi, Massimo Luigi, 197-218. Firenze: L. S. Olschki.

"In the opening lines of the fifth tract of his *Summulae* Peter of Spain deals with six different meanings of the terminus technicus 'ratio'. (a)

Three of them are relevant to the present discussion:

'Ratio' is used in more than one way. In one way it is the same as definition or description, as in «univocal things are those which have a name in common and whose 'ratio substantie' corresponding to that name is the same» (b) [...]. In another way 'ratio' is the same as the form imposed on matter (*forma materie*), e.g. in a knife iron is the matter and the arrangement imposed on the iron is the form. In yet another way 'ratio' is the same as a common essence that is predicable of many things, e.g. the essence of a genus, a species or a differentia. [...].

The aim of the present paper is to elucidate the important role of the term 'ratio' in metaphysical discussions from the thirteenth century onwards. The three above mentioned senses all refer to (what belongs to) a thing's essential nature. The first sense, however, is the one that comes most close to the subject matter of our discussion. (c) The opening lines of Aristotle's *Categoriae*, which are referred to by Peter may serve as the starting point of our investigation." p. 197

(...)

"7. Conclusion.

We may summarise the foregoing observations as follows:

(1) As early as in Boethius (Aristotle) *ratio* (Greek 'logos') was used to stand for one specific (ontic or logical) characteristic that a thing has in common with other things, notwithstanding the dissimilarity of their respective 'complete natures'. Thus 'man' and 'cow' have the *ratio animalis* in common and a white wall and a white statue have whiteness in common.

(2) *Ratio* may also be used to refer to a thing's 'complete nature' as distinct from either the nature of other things (e.g. the *ratio hominis* vs the *ratio lapidis*) or from the thing's individuality (*ratio singularitatis*).

(3) Distinguishing several *rationes* in one and the same thing is a procedure which is typical of man's intellectual capability. This procedure forms the backbone of many

philosophical and theological arguments concerning God and the entities occurring in the outside world.

(4) Possible translations of *ratio* as used in the special sense discussed in this paper are:

- *logically*: 'logical aspect', 'logical characteristic'; 'concept', 'notion' (bearing on some aspect characteristic or feature); 'meaning', 'descriptive account', 'definition'.

- *ontologically*: 'ontic aspect', 'characteristic', 'feature' (including formal ones)." p. 218

(a) Peter of Spain, *Tractatus* called afterwards *Summule logicales*. First Critical Edition from the Manuscripts with an Introduction by L. M. de Rijk, Assen, 1972, p. 55, 4-14. Cf. the English translation in *The Cambridge Translations of Medieval Philosophical Texts*, Vol. I: *Logic and the Philosophy of Language*, edited by Norman Kretzmann and Eleonore Stump, Cambridge etc., 1988, p. 226.

(b) ARISTOTLE, *Categoriae*, 1, 1 a 8-9.

(c) For that matter, the distinction between the three senses as given by Peter of Spain is not entirely clear-cut: they are, at least partially, overlapping.

13. John, Buridan. 1995. *Johannes Buridanus Summulae De Praedicabilibus*. Nijmegen: Ingenium Publishers. Introduction, critical edition and indexes by L.M. De Rijk. "The present edition contains the second tract [of Buridan's *Summulae*], *De praedicabilibus*, which deals with the five 'predicables', introduced by the Neoplatonist commentator of Aristotle, Porphyry (c. 233-c. 304 A.D.) in his introductory book (*Isagoge*) to the Stagirite's *Categories*, viz. 'genus', 'species', 'differentia', 'proprium', and 'accidens'. From as early as the eleventh century, medieval authors commented upon Boethius' (480-524) translation of, and commentary upon, this work. Buridan's discussion of the predicables is mainly based on the corresponding tract of Peter of Spain's manual. His comments are preceded by the complete text of the lemma from Peter to be discussed. It should be no surprise that

Buridan's quotations should go back to an adapted version of Peter's text. (...)

Buridan's work consists of elementary exegesis as well as extensive objections and *dubitaciones* in which specific questions are dealt with, mostly in an original fashion." pp. XVII and XXI.

14. Rijk, Lambertus Marie de. 1995. "Teaching and Inquiry in 13th and 14th Century Logic and Metaphysics." In *Vocabulary of Teaching and Research between Middle Ages and Renaissance. Proceedings of the Colloquium London, Warburg Institute, 11-12 March 1994*, edited by Weijers, Olga, 83-95. Turnhout: Brepols.
15. ———. 1995. "Ockham as the Commentator of *His* Aristotle. His Treatment of *Posterior Analytics*." In *Aristotelica Et Lulliana: Magistro Doctissimo Charles H. Lohr Septuagesimum Annum Feliciter Agenti Dedicata*, edited by Domínguez Reboiras, Fernando, Imbach, Ruedi, Pindl, Theodor and Walter, Peter, 77-127. The Hague: Martinus Nijhoff.
 1. Introduction; 2. Preliminary: Aristotle on demonstrative or epistemonical proof; 2.1 On the three requirements '*kata pantos*', '*kath' hauto*', '*kath' holou*', 2.2 On the notion of necessity; 2.3 On the four types of questions. On 'Middle' and 'Definiens'; 2.3.1 Subject and attribute. The Middle; 2.3.2. On definition and the four question-types; 2.3.3 The role of definitions in epistemonical proof; 2.3.4 Recipes for the discovery of definitions; 2.4 The '*kath' holou*' requirement revisited; 2.5 Particulars and the proper objects of Aristotle's epistemonical proof; 3. Ockham as a Commentator of *Posterior Analytics*; 3.1 Ockham's treatment of the four basic question-types; 3.2 Ockham's view of the '*kath' holou*' requirement; 3.3 The impact of Ockham's ontology upon his theory of demonstration; 3.3.1 Ockham's problem concerning the First Subject; 3.3.2 Ockham's introduction of 'Non-First Subject'; 3.3.3 '*Demonstratio particularis*' in Ockham; 3.3.4 Ockham's

view of necessity; 3.5 '*Dici per se*' and '*propositio per se vera*' in Ockham; 3.5.1 Two kinds of '*per se*' assignment; 3.5.2 The '*propositio per se (vera)*' in Ockham; 3.5.3 The strict and strictest senses of '*per se*'; 4. Conclusion.

"The present paper aims to clarify the attitude towards Aristotle adopted by one of the leading lights of fourteenth century philosophical and theological thought, William of Ockham, by investigating (a) how in some of the vital subjects of Aristotelian doctrine, the Venerable Inceptor understood and interpreted the Master, (b) how and why on specific occasions, he deliberately took the liberty to stray from Aristotle's teachings. It goes without saying that in such an undertaking, one has to confine oneself to certain doctrinal themes the choice of which might seem quite arbitrary. The present author has picked out the Aristotelian doctrine of demonstrative proof as interpreted by Ockham." p. 78

16. ———. 1995. "Ockham's Horror of the Universal. An Assessment of His View of Individuality." *Mediaevalia. Textos e Estudos* no. 7-8:473-497. Quodlibetaria: miscellanea studiorum in honorem prof. J. M. da Cruz Pontes anno iubilationis suae, Conimbrigae MCMXCV

17. ———. 1996. "The Key Role of the Latin Language in Medieval Philosophical Thought." In *Media Latinitas. A Collection of Essays to Mark the Occasion of the Retirement of L. J. Engels*, edited by Nip, R.I.A., 129-145. Turnhout: Brepols.

"Everyone embarking on the theme 'Medieval Latin and Philosophy' should realise that this theme involves more than just a juxtaposition of two separate items which are quite interesting in themselves. On the contrary, Medieval Latin and philosophy had a great mutual impact and thus were most closely related. To put it differently, in Medieval philosophical teaching and inquiry linguistic analysis was

considered by the Medievals themselves really indispensable. (*)

Like the Ancients, the Medieval thinkers firmly believed that, ultimately, the outside world is not-chaotic. In their view it has a 'logical' or intelligible structure, which, as such, is accessible to the human mind, insofar as the latter has the same 'logical' structure'. In other words, in the view of the Medievals there is an isomorphic relationship between the realms of thought and of being. (**)

(...)

The Medievals have largely expanded the logico-semantical approach they had inherited from the Ancients, especially in their so-called 'logica modernorum', which has its root in the logico-grammatical discussions found as early as in the eleventh century.

Coming now to the proper subject of my contribution I should like to discuss three extremely important themes that featured in Medieval philosophy, viz. [1] the 'Object-Thought' issue, [2] the problem of the Universals, and [3] the metaphysics of 'Accidental Being'. Our discussion will focus on the linguistic aspects of the solutions to each one of these problems. Three things in particular will be considered: [a] the semantical development of a terminology which was already common usage (e.g. 'idea', 'ratio'), [b] the introduction of new philosophical tools (e.g. 'suppositio', 'appellatio', 'connotatio'), and [c] the role of (artificial) word-order. I shall argue that for the Medievals, the Latin language was not only the vehicle of philosophical thought, but also an inspiring source of pioneering philosophical insight." pp. 129-130.

(*) For a broader discussion see L.M. de Rijk, 'Teaching and Inquiry in 13th-14th Century Logic and Metaphysics'

(**) In this connection the word 'logical' should be associated with the Greek 'logos', rather than the discipline of logic.

18. ———. 1996. "On Aristotle's Semantics in *De Interpretatione* 1-4." In *Polyhistor. Studies in the History and Historiography of Ancient Philosophy Presented to Jaap Mansfeld on His Sixtieth Birthday*, edited by Algra, Keimpe, Van der Horst, Pieter and Runia, David, 115-134. Leiden: Brill.
- "By and large, in *De interpretatione* Aristotle is concerned with our capability to speak about all that presents itself to our mind. From chapter 4 onwards, he deals with the statement-making expressions (affirmation and negation), which are the main tools for conveying our thoughts about things. This discussion is prepared (chapters 1-3) by some important observations concerning the basic elements of such expressions, viz. *onoma* and *rhema*. The present contribution contains some comments on Aristotle's view of the proper nature of statement-making as put forward in *De interpretatione*. First, I would like to highlight Aristotle's, what Sir David Ross has called 'frankly 'representative' view of knowledge' by discussing the terms *onoma* and *pragma*. Next, I will discuss what is meant by a term's 'time-connotation', and finally I will examine the semantics of *onoma*, *rhema* and *logos*." p. 115
19. ———. 1996. "Burley's So-Called *Tractatus Primus*, with an Edition of the Additional Quaestio '*Utrum Contradictio Sit Maxima Oppositio*'." *Vivarium* no. 34:161-191.
- "The extensive list of works by Walter Burley contains a collection of some eagerly disputed questions concerning natural philosophy, which in most of the manuscript catalogues goes under the blank title *Tractatus primus*. (...) In the shorter version of his *Expositio super librum Sex principiorum*, written after he had left Paris in 1327, he deals with the position concerning the specific sameness of whiteness and blackness he had argued for in the fourth *quaestio*, and refers to his '*primus tractatus de formis accidentalibus*' (...)

This reference seems to imply that the title '*De formis accidentalibus*' covers both the *Tractatus primus* and the *Tractatus secundus*, which was afterwards called '*De intensione et remissione formarum*.' I think it would be better to call the first treatise '*De formis accidentalibus, pars prima*,' with the subtitle '*De quattuor conclusionibus circa formas accidentales*'. The second treatise, then, which contains a discussion of a closely related subject matter, should go under the title '*De formis accidentalibus, pars secunda*,' with the subtitle '*De causa intrinseca susceptionis magis et minus*'. Later on, its current title became *De intensione et remissione formarum*." pp. 161-162

20. Giraldus, Odonis. 1997. *Giraldus Odonis O.F.M. Opera Philosophica. Vol I. Logica*. Leiden: Brill.

Contents: Acknowledgments IX; Introduction 1; List of manuscripts 63; Bibliography 65; TEXT 69; Argumentum 71; Liber Primus: De sillogismis 85; Annexum I: De natura oppositionis contradictorie 186; Liber secundus: De suppositionibus 231; Annexum II: De tribus dubiis 293; Liber tertius: De principiis scientiarum 325; Annexum III: De primo subiecto in logica 467; Index locorum 493; Index nominum 498; Index verborum et rerum notabilium 500-543.

From the Introduction: "It may be useful to say something about the general nature of Girald's *Logica*, Libri I-III, which now appear in print for the first time as a whole. Generally speaking, the work is well-composed and written in a lucid style. The *Addenda* even contain rather passionate passages, when Girald is rejecting opponent views, especially in those cases where Walter Burley is (anonymously) under attack. The characteristic given by Brown (1) of *De suppositionibus* seems to be well to the point for the entire *Logica*: Girald's treatise is structured in his own individual way, but all with its personal stamp, especially emerging in *De suppositionibus*." p. 25

(1) Stephen F. Brown "Gerard Odon's *De suppositionibus*" in: *Franciscan Studies* 35 (1975), 5-44 cfr. p. 10

"As we have remarked before, Girald's tract on "the two most common and well-founded principles of knowledge" is the most original part of his *Logica*. To assess its place in Girald's thought requires an investigation into the proper nature of the two principles and what the Medieval commentators used to call the 'conditions' ('specific properties') of these principles, as well as what to Girald's mind plays the key role in such an inquiry, the proper subject of logic. I shall deal with these themes here briefly; they will be extensively discussed in our *Introduction* to the edition of Girald's metaphysical works." p. 37

21. Rijk, Lambertus Marie de. 1997. "Le "Guide De L'étudiant" Et Les Exigences Particulières De La Preuve Demonstrative Selon Aristote." In *L'enseignement De La Philosophie Au Xiii Siècle. Autour Du 'Guide De L'étudiant' Du Ms. Ripoll 109.*, edited by Lafleur, Claude and Carrier, Joanne, 353-366. Turnhout: Brepols.

"Les *Seconds Analytiques*, qui constituent sans doute la pièce maîtresse de l'oeuvre logique d'Aristote et dont l'importance philosophique surpasse de beaucoup le domaine de la logique proprement dite, étaient considérés dès le Moyen Âge comme un texte extrêmement difficile. On y traite de la théorie de la démonstration poursuivant la connaissance certaine, stable et nécessaire, fondée sur des prémisses elles-mêmes nécessaires.

Après quelques remarques générales sur la nécessité de connaissances préexistantes', sur la nature de la science et de la démonstration, suivies par une énumération des opinions erronées à ce propos, le Stagirite aborde la question des conditions requises pour construire des prémisses nécessaires, qui s'appellent *condiciones principiorum* dans le vocabulaire médiéval." p. 353

22. ———. 1997. "Guiral Ott (Giraldus Odonis) O.F.M. (1273-1349): His View of Statemental Being in His Commentary

on the Sentences." In *Vestigia, Imagines, Verba. Semiotics and Logic in Medieval Theological Texts (Xiii-Xivth Century)*, edited by Marmo, Costantino, 355-369. Turnhout: Brepols.

Acts of the 11th Symposium on Medieval Logic and Semantics, San Marino, 24-28 May 1994.

"The fourteenth-century Franciscan master Giraldus Odonis (Guiral Ot) who at the time he was Patriarch of Antiochia died of the plague in 1349, in Catania, Sicily, is mainly known as the unfortunate successor of the deposed Michael of Cesena as Master General of his Order and a faithful adherent of Pope John XXII in the debate on the beatific vision" p. 355

It is the intention of the present contribution to discuss the author's second question [in his commentary on the *Sentences*] which deals with *esse tertio adiacens*, or what is nowadays mostly called 'copulative being', but I would prefer to label it 'statemental being' ". p. 356
(...)

"7. Conclusion. To Odonis' mind, statemental being is a kind of being *sui generis*, so to speak, which, no doubt, is something more than a kind of being that entirely owes its existence to the soul's activity. Rather Odonis' statemental being should be regarded as the metaphysical indivision (in as far as, on the statemental level, affirmative sentences are concerned), or division (in the case of negative sentences) which exist in the realm of the *natura communis*. Thus, statemental being is the basic precondition for the existence of both real being and conceptual being, to the extent that within the domain of the *natures communis* it specifically concerns the ontological (whether essential or incidental) relationships of indivision and division that exist between the common natures. When defending against his numerous opponents the real character of statemental being, Odonis has the metaphysical reality of the realm of the common natures in mind, rather than the reality of the actual world.

To put it briefly, like his doctrine of the nature of the universal, Odonis' view of statemental being clearly betrays a Platonic flavour, which makes him join the camp of the extreme realists." p. 364

23. ———. 1997. "Gerardus Odonis O.F.M. On the Principle of Non-Contradiction and the Proper Nature of Demonstration." *Franciscan Studies* no. 54:51-67.

"One of the most original works by the Franciscan Master Gerardus Odonis (Guiralt Ot) is the third part of his *Logica, De principiis scientiarum*. This treatise is not just a commentary on Aristotle's *Posterior Analytics*, nor is it a specialized treatment of its subject matter, which is demonstrative (or rather epistemonical) knowledge, as is found in Ockham's *Sum of Logic*. Rather, Odonis took his treatise to be a supplement to the Aristotelian work, where the demonstrative principles proper to the different 'sciences' (*principia propria*) as well as those they all have in common (*principia communia*) are extensively discussed by Aristotle, but less attention is paid to the most common principles of the intellect (*principia communissima intellectus*), such as the twofold principle of noncontradiction. What Odonis means to do, then, is to discuss the well-known seven requirements concerning the proper and the common principles insofar as they apply to the principle of non contradiction (henceforth *PNC*).

(...)

Accordingly, the author has divided his treatise into ten chapters, the first of which deals with the subject matter of *PNC* and its constituents or terms. This chapter presents first ten basic assumptions (*suppositiones*), next twelve theses (*conclusiones*) together with the discussion of a number of notable statements (*notabilia*) and corollaries, and finally the refutation of objections (*dubia*).

In the present paper the *conclusiones* 6-11 concerning the nature of being as involved in *PNC* will be discussed." pp. 51-53 (Notes omitted).

24. ———. 1997. "Foi Chrétienne Et Savoir Humain. La Lutte De Buridan Contre Les *Theologizantes*." In *Langages Et Philosophie. Hommage À Jean Jolivet*, edited by Libera, Alain de, Elamrani-Jamal, Abdelali and Galonnier, Alain, 393-409. Paris: Vrin.

"Introduction. Pendant tout le Moyen Age, comme durant la période patristique, les penseurs chrétiens se sont beaucoup intéressés aux rapports entre la raison et la foi. On sait que le principal thème de recherche et de discussion, en ce domaine, était l'harmonisation de la foi et de la raison, ce qui revenait au début à faire une apologie du caractère rationnel de la foi, mais ce qui, chez des géants comme Anselme ou Abélard, a conduit à une élaboration de la théologie grâce à l'emploi de ce que notre collègue, Jean Jolivet, dans son étude de pionnier sur la théologie d'Abélard, a si heureusement appelé les « arts du langage (1) ». D'autre part, les penseurs médiévaux ont toujours reconnu l'importance du « dépôt de la foi » en tant que collection des vérités garanties, si bien que l'on prenait ces vérités pour des renseignements supplémentaires sur les phénomènes terrestres. Le simple « Soleil, arrête-toi » de Josué (*Livre de Josué 10, 12*) a suffi pour maintenir le système géocentrique.

A partir de la deuxième moitié du XIII^e siècle, c'est surtout la toute-puissance divine et la contingence radicale de tout le créé qui conduisent certains penseurs à regarder le monde d'un point de vue tout différent. La nouvelle attitude a dû stimuler, d'une manière générale, l'intérêt des philosophes pour les implications épistémologiques de la toute-puissance divine, en particulier pour celles qui concernent les limites de la connaissance humaine.

Jean Buridan (né en Picardie, peut-être à Béthune, vers l'an 1300, mort vers 1361) a bien fait face à ces problèmes épistémologiques. En rendant à César ce qui est à César, et à Dieu ce qui est à Dieu, il a pu déterminer sa propre attitude devant la foi et la théologie. Le philosophe picard a trouvé

les *theologizantes* sur sa route. La lutte de Buridan contre leur point de vue n'était qu'un corollaire de ses idées optimistes (et bien fondées) sur les possibilités et la validité du savoir humain." p. 393

(1) J. Jolivet, *Arts du langage et théologie chez Abélard*, Paris, Vrin (Études de philosophie médiévale, LVII), 1969.

25. ———. 1997. "The Commentaries on Aristotle's *Metaphysics*." In *L'enseignement Des Disciplines À La Faculté Des Arts (Paris Et Oxford, Xiii-Xve Siècles)*. *Actes Du Colloque International*, edited by Weijers, Olga and Holz, Louis, 303-312. Turnhout: Brepols.

"Considering the rich survey Professor Lohr has presented this afternoon of Medieval commentaries on Aristotle's philosophical works including *Metaphysics*, there is no point in discussing in general terms the vicissitudes of this Aristotelian work at the Parisian Faculty of Arts. On top of that, in the *lettre d'invitation* of the organizers we were asked to say something about our own recent research in the field under discussion. Therefore I shall confine myself to John Buridan's (c. 1290-c. 1360) commentaries on *Metaphysics*. Fortunately, Buridan's activity as a commentator on *Metaphysics* may to a large degree be regarded as representative of the period. As we learn from Lohr's survey, from the fourteenth century only some five commentaries on this important Aristotelian writing are extant, quite unlike the thirteenth and fifteenth centuries, from which a considerable amount of such works have survived. (*)" p. 303

(*) For the reception of the *Metaphysics* into the curriculum of the Parisian Faculty of Arts see A. L. Gabriel, *Metaphysics in the Curriculum of Studies of the Mediaeval Universities*. in P. Wilpert ed., *Die Metaphysik im Mittelalter. Ihr Ursprung und Ihre Bedeutung* (Miscellanea Mediuevalia 2) Berlin, 1963, pp. 92-102 ; G. Leff, *Paris and Oxford Universities in the XIIIth and XIVth Centuries*, New York, 1988, p. 189 sqq.

26. Johannes, Venator. 1999. *Johannes Venator Anglicus. Logica*. Stuttgart, Bad Cannstatt: Frommann-Holzboog. First critical edition from the manuscripts. Vol. I: *Tractatus* I-II, Vol. II: *Tractatus* III-IV. *Grammatica speculativa*.
"Properly speaking, nothing is known about our author's life with all due certainty. In recent times, he is commonly identified with the English logician John Hunt(e)man listed by Emden, who was from York diocese and a master in Oxford still in the 1390's, when Paul of Venice stayed there. He is reported as a fellow of Oriel College as early as in 1373 and still being there in January 1383. He was Robert Rygge's Junior Proctor of Oxford University in 1382-3, and, like Rygge, he was delated in 1382 for sympathising with the heretic views held by John Wyclif. In 1390, he was Chancellor of Lincoln, and on June 14, 1414, he was appointed Vicar General of the Bishop of Durham. These dates of the John Huntman are all well compatible with his identification with the author Johannes Venator. It is interesting in this connection that the Vatican manuscript does ascribe the *Logica* to an English author ("Johannes Venator doctor anglicus"). Unfortunately, there is no other positive evidence so far for this plausible identification." p. 7.
27. Rijk, Lambertus Marie de. 2000. "*Logica Morelli*. Some Notes on the Semantics of a Fifteenth Century Spanish Logic." In *Medieval and Renaissance Logic in Spain. Acts of the 12th European Symposium on Medieval Logic and Semantics, Held at the University of Navarre (Pamplona, 26-30 May 1997)*, edited by Angelelli, Ignacio and Pérez-Ilzarbe, Paloma, 209-224. Hildesheim: Georg Olms Verlag.
"The present paper, which is presented as a modest contribution to the general theme of our Symposium on the History of Spanish Logic, intends to highlight some interesting topics discussed in a fifteenth century

introductory *Sum of Logic* which is extant in (at least) two Spanish manuscripts.

When visiting Spanish libraries in the Autumn of 1971 I came across a copy of a *Sum of Logic* in the Biblioteca Capitulare Colombina at Sevilla (cod. 7-3-13). This work attracted my attention because of its clear design and lucid execution. Another copy of this work turned up in the Biblioteca del Cabildo Metropolitano at Zaragoza (cod. 15-57), under the name "Logica Morelli", and was dated 1476. (...)

The work consists of five parts:

- (1) the logic of terms, including the well-known properties of terms, supposition, ampliation, and appellation.
 - (2) the logic of propositions, including their various "probationes" (in the wake of Richard Billingham, *Speculum*, and the widespread adaptations of this work)
 - (3) the theory of argumentation
 - (4) the doctrine of the predicables and the categories
 - (5) the doctrine of the so-called "obligations".
- (...)

This treatise seems to nicely testify to fifteenth-century logical education in Spain. We owe a survey of the contents of this work together with a description of the two manuscripts to our colleague Joke Spruyt." pp. 209-210- [A printed edition of the work is now available: *Logica Morelli* - Edited from the manuscripts with an introduction, notes and indices by Joke Spruyt - Turnhout, Brepols, 2003]

28. John, Buridan. 2001. *Johannes Buridanus. Summulae Viii: De Demonstrationibus*. Groningen: Ingenium Publishers.
29. Nicolas, d'Autrecourt. 2001. *Nicolas D'autrecourt. Correspondance, Articles Condamnés*. Paris: Vrin. Texte latin établi par L. M. de Rijk; introduction, traduction et notes par Christophe Grellard. French translation of: *Nicholas of Autrecourt. His correspondence with Master Giles and Bernard of Arezzo*.

30. Rijk, Lambertus Marie de. 2002. *Aristotle: Semantics and Ontology. Volume I: General Introduction. The Works on Logic*. Leiden: Brill.

From the Preface: "In this book I intend to show that the ascription of many shortcomings or obscurities to Aristotle resulted from persistent misinterpretation of key notions in his work. The idea underlying this study is that commentators have wrongfully attributed anachronistic perceptions of 'predication', and statement-making in general to Aristotle. In Volume I, what I consider to be the genuine semantics underlying Aristotle's expositions of his philosophy are culled from the *Organon*. Determining what the basic components of Aristotle's semantics are is extremely important for our understanding of his view of the task of logic -- his strategy of argument in particular. In chapter 1, after some preliminary considerations I argue that when analyzed at deep structure level, Aristotelian statement-making does not allow for the dyadic 'S is P' formula. An examination of the basic function of 'be' and its cognates in Aristotle's philosophical investigations shows that in his analysis statement-making is copula-less. Following traditional linguistics I take the 'existential' or hyparctic use of 'be' to be the central one in Greek (*pace* Kahn), on the understanding that in Aristotle hyparxis is found not only in the stronger form of 'actual occurrence' but also in a weaker form of what I term 'connotative (or intensional) be' (1.3-1.6). Since Aristotle's 'semantic behaviour', in spite of his skilful manipulation of the diverse semantic levels of expressions, is in fact not explicitly organized in a well-thought-out system of formal semantics, I have, in order to fill this void, formulated some semantic rules of thumb (1.7).

In chapter 2 I provide ample evidence for my exegesis of Aristotle's statement-making, in which the opposition between 'assertible' and 'assertion' is predominant and in which 'is' functions as an assertoric operator rather than as

a copula (2.1-2.2). Next, I demonstrate that Aristotle's doctrine of the categories fits in well with his view of copula-less statement-making, arguing that the ten categories are 'appellations' ('nominations') rather than sentence predicates featuring in an 'S is P' formation (2.3-2.4). Finally, categorization is assessed in the wider context of Aristotle's general strategy of argument (2.5-2.7). In the remaining chapters of the first volume (3-6) I present more evidence for my previous findings concerning Aristotle's 'semantic behaviour' by enquiring into the role of his semantic views as we find them in the several tracts of the *Organon*, in particular the *Categories* *De interpretatione* and *Posterior Analytics*. These tracts are dealt with *in extenso*, in order to avoid the temptation to quote selectively to suit my purposes."

31. ———. 2002. *Aristotle: Semantics and Ontology. Volume Ii: The Metaphysics, Semantics in Aristotle's Strategy of Argument*. Leiden: Brill.

From the Preface to the first volume: "The lion's part of volume two (chapters 7-11) is taken up by a discussion of the introductory books of the *Metaphysics* (A-E) and a thorough analysis of its central books (Z-H-O). I emphasize the significance of Aristotle's semantic views for his metaphysical investigations, particularly for his search for the true *ousia*. By focusing on Aristotle's semantic strategy I hope to offer a clearer and more coherent view of his philosophical position, in particular in those passages which are often deemed obscure or downright ambiguous.

In chapter 12 I show that a keen awareness of Aristotle's semantic *modus operandi* is not merely useful for the interpretation of his metaphysics, but is equally helpful in gaining a clearer insight into many other areas of the Stagirite's sublunar ontology (such as his teaching about Time and Prime matter in *Physics*).

In the Epilogue (chapter 13), the balance is drawn up. The unity of Aristotelian thought is argued for and the basic

semantic tools of localization and categorization are pinpointed as the backbone of Aristotle's strategy of philosophic argument.

My working method is to expound Aristotle's semantic views by presenting a running commentary on the main lines found in the *Organon* with the aid of quotation and paraphrase. My findings are first tested (mainly in Volume II) by looking at the way these views are applied in Aristotle's presentation of his ontology of the sublunar world as set out in the *Metaphysics*, particularly in the central books (ZHO). As for the remaining works, I have dealt with them in a rather selective manner, only to illustrate that they display a similar way of philosophizing and a similar strategy of argument. In the second volume, too, the exposition is in the form of quotation and paraphrase modelled of Aristotle's own comprehensive manner of treating doctrinally related subjects: he seldom discussed isolated problems in the way modern philosophers in their academic papers, like to deal with special issues tailored to their own contemporary philosophic interest."

32. ———. 2003. "Boethius on *De Interpretatione* (Ch. 3): Is He a Reliable Guide?" In *Boèce Ou La Chaîne Des Savoirs. Actes Du Colloque International De La Fondation Singer Polignac (Paris, 8-12 Juin 1999)*, edited by Galonnier, Alain, 207-227. Paris: Peeters Publishers.

"There can be no doubt whatsoever about Boethius's exceptional merits for transmitting Aristotle's logic to us. But while 'Aristotelian' logic is in many respects synonymous with 'Aristotelico-Boethian' logic, the question can be raised whether Aristotle himself was an 'Aristotelian'. To give just one example: from Łukasiewicz onwards there has been much debate among scholars about the telling differences between traditional syllogistic and that of the *Prior Analytics*. (1)

In this paper I intend to deal with two specimens of Boethius's way of commenting upon Aristotle's text. They are found in his discussion of *De interpretatione*, chapters 2 and 3, which present Aristotle's views of *ónoma* and *rhema*.

(2) One concerns the semantics of indefinite names, the other that of isolated names and verbs." p. 227

(1) Jan Łukasiewicz, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Oxford, 1951. G. Patzig, *Aristotle's Theory of the Syllogism. A logico-philological study of Book A of the Prior Analytics*, Dordrecht, 1969.

(2) *Rhema* properly stands for 'what is said of', including not only our 'verb' but also adjectives, when used in attributive position. One should realise, however, that 'verb' refers to a word class, rather than a semantic or syntactical category, as *rhema* does.

(...)

"Conclusion. Returning now to Boethius' manner of commenting upon Aristotle's texts, the following points can be made:

[1] In the wake of Ammonius, (3) Boethius explains [De int.] 16b22-25 on the apophantic level, i.e. in terms of statement-making, instead of framing significative concepts, i.e. on the onomastic level.

[2] Whereas in Ammonius' report of the predecessors, Alexander and Porphyry, as well as his own exposition of the issue, there are many clues to the previous alternative reading and interpretation on the onomastic level, Boethius does not even refrain from cleansing the text (including his 'quotations'), by changing, at any occurrence, '*ens*' into '*est*'.

[3] In doing so, Boethius decisively influenced the commentary tradition on account of the purport of De int. 3, 16b19-25. He effectively contributed to the common verdict on this paragraph in terms of 'a curious medley'.

[4] As far as the semantics of the indefinite verb (3, 16b14-15) is concerned, Boethius' apparently adhering to the so-

called 'Ammonii recensio' was far less disastrous for the common understanding of Aristotle on this score, and, in effect, merely provided us with some stimulating Medieval discussions of the semantics of term infinitation.

[5] Finally by way of speculative surmise, it might be suggested that both the fact that Boethius dealt with the 'Ammonii recognise' without reading it in his lemma of 16b14-15, as well as his rather ruthlessly interfering in the quotations of the pre-Ammonian sources, should make it more plausible that Boethius had extensive, but incomplete marginal notes to his Greek text of Aristotle at his disposal, rather than a full copy of Ammonius' commentary (or those of other Greek commentators).

To comment upon Aristotle's work naturally includes developing his lore. But nothing can ever guarantee that this will happen *ad mentem auctoris*. (4)"

(3) It is unmistakably plain that in *De int.* ch. 3, Boethius is strongly influenced by what he read in Ammonius (or in marginal notes on Ammonius' view).

(4) Cf. the interesting paper on this subject by Frans A.J. de Haas, "Survival of the Fittest? Mutations of Aristotle's Method of Inquiry in Late Antiquity" (forthcoming).

[Conference: *The Dynamics of Natural Philosophy in the Aristotelian Tradition (and beyond)*, Nijmegen, 16-20 August 1999.]

33. ———. 2003. "The Logic of Indefinite Names in Boethius, Abelard, Duns Scotus, and Radulphus Brito." In *Aristotle's Peri Hermeneias in the Latin Middle Ages. Essays on the Commentary Tradition*, edited by Braakhuis, Henk A.G. and Kneepkens, Corneli Henri, 207-233. Groningen: Ingenium Publishers.

"Aristotle's doctrine of indefinite names (nouns) was handed down to the Middle Ages together with Boethius' comments and explanations. Boethius' view of the matter has two characteristic features. For one thing, there is a certain ambiguity on his part concerning the precise

semantic value of such terms; for another, Boethius deviates considerably from Aristotle in that he explicitly assigns the property of 'holding indifferently of existents and non-existents' not only to the indefinite *rhéma* (as it is found in Aristotle, De interpr. 3, 16b15) but to the indefinite name (*onoma*) as well.

Until the end of the 12th century the logic and grammar (1) of indefinite terms (nouns and verbs) was a much debated issue. Although assiduously echoing the well-known *auctoritates* Medieval thinkers did not always go the whole way with their predecessors. For example, Abelard and Scotus, starting from their own philosophical tenets, more or less inconspicuously corrected some dubious elements in Boethius' interpretation of Aristotle's doctrine of the indefinite name. Peter Abelard, especially, took great pains to precisely define the meaning of indefinite terms. He focussed his attention on the proper meaning of indefinite terms rather than on the question whether they are 'holding indifferently of existents and non-existents'. In contrast, 13th-century scholars like Duns Scotus and Radulphus Brito based their discussion of the proper meaning of the indefinite name upon the question '*Utrum nomen infinitum aliquid ponat*' ("Whether an infinite name posits something"), which calls to mind Boethius' claim that indefinite names 'hold indifferently of existent and non-existents'.

Abelard's discussion of the proper meaning of the indefinite name is also interesting in that it helps us to gain a good understanding of what Boethius had in mind in claiming that the indefinite name 'signifies an infinite number of things' ('*significat infinita*'). For, thanks to Abelard's expositions, it becomes clear that the phrase '*significare infinita*', which, on the face of it, may be taken as referring to the extensional of the indefinite name, on closer inspection proves to concern its intension, because the controversy between Abelard and Boethius turns out to be

about two different views of the indefinite name's intension rather than about any opposition of intension as against extension." pp. 207-208.

34. ———. 2003. "The Aristotelian Background of Medieval *Transcendentia*: A Semantic Approach." In *Die Logik Des Transzendentalen. Festschrift Für Jan A. Aertsen Zum 65. Geburtstag*, edited by Pickavé, Martin, 3-22. Berlin: Walter de Gruyter.

1. Aristotle's notion of 'connotative' or 'intensional be'; 2. The so-called 'termini transcendentes' in the Middle Ages; 2.1. How to bring the general notions 'be' and 'one' into focus; 2.2. On the peculiar use of the label 'transcendens' in prioristic syllogistic; 3. On the use of 'transcendens' to bring general, extra-categorical ontic notions in focus; 3.1. The commonness of the general ontic notions; 3.2. The epistemological aspect: the emergence of the idea of conceptual primacy 3.3. On the contaminative shift to Platonic transcendence; 4. The (Aristotelian) semantic sense underlying 'transcendentia' retained; 5. Concluding remarks."

"1. As I have argued for elsewhere, the Greek notion 'ES-' or 'be' as coming to the fore in its several grammatical appearances - the infinitive *einai*, the articular participle *to on*, and the verbal noun *ousia* - not only refers to what is actually there ('exists') or actually is the case, but can also represent a form of 'be' that does not, as such, include actual existence, and indeed indicates the general ontic condition that underlies, and is in fact connoted by, any categorial designations. To Aristotle in particular, each and every noun includes what I have termed 'connotative' or 'intensional' be-ing. (...) "The semantic view that every nominal or verbal sememe by connotation contains the fundamental notion of be-ing is at the basis of Aristotle's argument against Plato. To Plato, transcendent Being is the fullness of Forms (later called 'plenitude formarum'), whereas particular forms existing in the outside world are merely as many shares of

such-and-such be-ing in virtue of which the outside things share in the transcendent Source of Beingness. In Aristotle, things are quite different: there is no being-ness other than what is found in particular beings. It is their immanent forms which are constitutive of their (modes of) be-ing, rather than some putative transcendent Source (on the contrary, as it is worded later on: 'forma dat esse'). By itself, 'be' even is a categorially empty notion. The fact that to Aristotle, 'be-ing' is a categorially empty notion by no means implies that Aristotle should be unaware of the fundamental importance of the notion of be-ing when it comes to metaphysical investigation. It need not come as a surprise that it is in his "Metaphysics" that the notion of 'beingness' (ousia) is the very nucleus of the metaphysical search for the quiddity of things: this search concerns true 'ousia' or true 'being-ness'. All things considered, despite his obstinately arguing for the (categorical!) emptiness of the notion 'be', Aristotle recognizes the basic sememe of 'be-ing' present in each and every categorial notion, and at the same time he is, to some extent, aware that there are also some other general ontic notions, which are equally fundamental to metaphysics." pp. 3-4

35. Giraldus, Odonis. 2005. *Giraldus Odonis O.F.M. Opera Philosophica. Vol II. De Intentionibus*. Leiden: Brill. Contents: Acknowledgements XIII; Introduction 1; A study on the medieval intentionality debate up to ca. 1350 (pp. 19-371) by L. M. de Rijk. Chapter I. Preliminary matters p. 19; Chapter II. The common doctrine of Cognition ca 1260 p. 41; Chapter III. The "epistemological turn" around 1270 p. 79; Chapter IV. The intentionality issue before Faversham and Radulphus Brito p. 113; Chapter V. Simon Faversham on Second Intentions p. 165; Chapter VI. Radulphus Brito on intentionality p. 191; Chapter VII. Hervaeus Natalis's Treatise *De secundis intentionibus* p. 251 Chapter VIII. Giraldus Odonis's Treatise *De intentionibus* p. 303; Chapter

IX. Conclusion p. 333; Bibliography p. 359; List of manuscripta referred to p. 373; Text of *De intentionibus* p. 377-596;

Appendices p. 597; A. William of Ware (Guillelmus Guarro) p. 607; B. James of Metz (Jacobus Mettensis) p. 619; C. Hervé Nédellec (Hervaeus Natalis) p. 625; D. Durand of St. Pourçain (Durandus de S. Porciano) p. 635; E. Raoul le Breton (Radulphus Brito) p. 643; F. Pierre d'Auriol (Petrus Aureolus) p. 695; G. Franciscus de Prato p. 749; H. Stephan of Rieti (Stephanus de Reate) p. 777

Indices p. 823; A. Indices locorum p. 825; B. Index nominum p. 839; C. Index verborum rerumque notabilium p. 845-894.

"This volume contains the first critical edition of Girald Odonis (d. 1349), *De intentionibus*, in which the author deals with the multifarious problems around conceptualization with which philosophers and theologians from around 1300 were faced when attempting to bridge the gap between thought and reality. Girald appears to have been an unyielding defender of the 'realistic' position, holding that our variously articulated concepts (*intentiones*) are representative of as many distinctions in Reality. The main target of his severe criticism upon contemporaneous views of the matter is Hervé de Nédellec, who was the first to write a monograph *De intentionibus*, which betrays his adherence to a moderate realism. The editor's extensive study of the intentionality debate of those years focusses on the development of the cognition theory in the period between Thomas Aquinas and Peter Auriol (d. 1322)."

36. Rijk, Lambertus Marie de. 2005. "Girald Odonis on the Real Status of Some Second Intentions." *Documenti e Studi sulla Tradizione Filosofica Medievale* no. 16:515-551.
37. ———. 2006. "Giraldus Odonis, Godfrey Fontaines, and Peter Auriol on the Principle of Individuation." In *Ad Ingenii Acuitionem*. *Studies in Honour of Alfonso Maierù*, edited by Caroti, Stefano, Imbach, Ruedi, Kaluza, Zénon,

Stabile, Giorgio and Sturlese, Loris, 403-436. Louvain-la-Neuve: Fédération Internationale des Instituts d'Études Médiévales.

"Everyone interested in the history of philosophy knows that the problem of the universal has played a predominant role. Ockham may indeed have tried to highlight the importance of this problem by nullifying its counterpart, the problem of individuation, to the great majority of Medieval thinkers, however, the problem area surrounding the principle of individuation remained of serious interest. Against the background of the phenomenon of universality as strictly required for obtaining genuine knowledge, they kept regarding the individuality issue as a source of philosophic and theological perplexity which could not be underestimated with impunity. The purport of this paper is to evaluate Girald Odonis's treatment of the individuation issue (In II Sent., dist. 6, q. 4, and, in addition, In III Sent., dist. 1, qq. 1-3) in the context of what others brought forward on the subject, particularly Godfrey of Fontaines and Peter Auriol.

As Russel Friedman has rightly observed, from the beginnings of 14th century onwards, the *Sentences* commentary came into its own as a preferred medium of scholastic theological and philosophical discourse, certainly rivaling in this respect, and often outshining, other vehicles of theological expression (e. g. *Quodlibetal questions*, *Summae*, Biblical commentaries). The Franciscan Master, Giraldus Odonis (c. 1280-1349) was among the numerous scholars who were beginning to use the *Sentences* commentary as a vehicle for mature thought about a gamut of controversial philosophic as well as theological issues. Therefore the occurrence of this philosophically hotly debated item in his *Sentences* commentary cannot come as a surprise.

In the sixth *Distinctio* of the Second Book, Gerald comes (in the fourth question) to speak about the individuation

problem, asking what it is in virtue of which there is a multiplication of individuals within one species. He proposes to deal with this question by firstly summing up a number of previous or current opinions, then to advance his own position, and thirdly to reply to the ins and outs, including the backgrounds of the rival positions." pp. 403-404 (notes omitted).

38. Johannes, Buridanus. 2008. *Johannes Buridanus Lectura Erfordiensis in I-Vi Metaphysicam, Together with the 15th-Century Abbreviatio Caminensis*. Turnhout: Brepols. Introduction, critical edition and indexes by L. M. de Rijk. "The aim of the present edition is to make two texts available which can throw some more light on the role of Aristotle's *Metaphysics* in 14th-15th academic teaching. One of them contains part of an early (hitherto unknown) version of John Buridan's *Questions on Metaphysics*, the other is a 15th century abbreviation of precisely this early version. Remarkably, both texts belong to the East European tradition of Buridan's works, which is the more interesting as they testify to the master's earlier activities as a Parisian teacher on the subject of metaphysics. In particular, they elucidate Buridan's ongoing semantic approach to matters of metaphysics and ontology as well as his attitude to Aristotle's authority."
39. Rijk, Lambertus Marie de. 2011. *Hervaeus Natalis. De Quattuor Materiis, Sive Determinationes Contra Magistrum Henricum De Gandavo. Vol. I*. Turnhout: Brepols. *De formis* (together with his *De unitate formae substantialis in eodem suppositio*). "The aim of the present edition of Harvey Nedellec's *De quattuor materiis* is to make a collection of texts available that can throw some more light upon the ongoing debates around 1300 about some highly controversial issues, including the plurality of forms, the relationship between being and essence, the significance (or superfluity) of the

intelligible species, and the intellect's priority to the will. Harvey's polemic interventions, which are explicitly directed against the ontological positions held by Henry of Ghent, are the more interesting as they are coloured by a manifest animosity against his opponent and the Ghentian way of doing philosophy in general. The author's attitude is most prominent in the first tract of the collection presented in the first volume, *De formis*. In order to put the impact of this tract into a larger perspective, Harvey's extensive treatise *De unitate formae substantialis in eodem supposito* has been added."

40. De Rijk, Lambertus Marie. 2013. "Semantics and Ontology. An Assessment of Medieval Terminism." In *Medieval Supposition Theory Revisited. Studies in Memory of L. M. De Rijk*, edited by Bos, Egbert Peter, 13-59. Leiden: Brill. Also published as Volume 51, 1-4 (2013) of *Vivarium*. Acts of the XVIIth European Symposium for Medieval Logic and Semantics, held the University of Leiden, 2nd, 7th June. 2008.

"This paper aims to assess medieval terminism, particularly supposition theory, in the development of Aristotelian thought in the Latin West. The focus is on what the present author considers the gist of Aristotle's strategy of argument, to wit conceptual focalization and categorization. This argumentative strategy is more interesting as it can be compared to the modern tool known as 'scope distinction'."

41. Rijk, Lambertus Marie de. 2013. *Hervaeus Natalis. De Quattuor Materiis, Sive Determinationes Contra Magistrum Henricum De Gandavo. Vol. Ii*. Turnhout: Brepols.

De esse et essentia. De materia et forma. A Critical Edition from Selected Manuscripts.

"This second volume presents a critical study of Hervaeus Natalis's *De quattuor materiis*, and compares it with the rival systems of the metaphysics of creation that were upheld by Giles of Rome and Henry of Ghent.

This second volume of Hervaeus Natalis's polemical work, *De quattuor materiis* contains his *De esse et essentia*. In this work the author criticizes the rival systems of the metaphysics of creation that were upheld by Giles of Rome and Henry of Ghent, and presents an exposition of his own notion of being. To explain Harvey's antagonistic attitude to Henry of Ghent and his simultaneous rejection of Giles's positions (the rigid Aegidian real distinction between essence and existence in particular) it was necessary to provide a thorough investigation of the ontological positions of both Henry and Giles. Hence the lion's part of the Introduction is devoted to these two rivals of Harvey's. The selection of the manuscripts used for the present edition of *De esse et essentia* as well as the *ratio edendi*, orthography, punctuation and headings employed, are explained in the General Introduction to volume one, *De formis*.

This second volume had been finished by the editor, L. M. de Rijk, just before his sudden death on July 30, 2012. The final version has been read by Joke Spruyt and Olga Weijers.

The third and last volume of the edition of Hervaeus' work, already well advanced by the editor, will be finished by two of his main disciples: Henk Braakhuis and Onno Kneepkens. Thus we will have kept our promise, in respect and friendship for our master."

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Annotated Bibliography of Mauro Nasti de Vincentis

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conclusive e problemi aperti 173; Appendice: La dottrina boeziana della *repugnantia* - Scelta di testi 193; Riferimenti bibliografici 231-232.

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Bibliography of Wilhelm Risse's Writings on the History of Logic

INTRODUCTION

Wilhelm Risse was one of the greatest historians of logic of the 20th century.

"Risse possessed the rare ability to go to the core of his subject matter, defining and distinguishing, while ever attentive to the essential structures, controlling his inquiry. His subject matter was indeed immense. In fact, Risse set himself the task of taking up where Carl Prantl had left off a century before him, viz. to provide as complete as possible an exposition of all the treatises on logic produced by Western Civilization from 1500 to 1780. Like Prantl, Risse never relied on the accounts of others. He travelled throughout Europe to read the books about which he was writing. For Risse, the word 'autopsy' was no trifle. This enterprise found its realization in the two volumes of *Logik der Neuzeit* (1964-70) and in the four volumes of *Bibliographia logica* (1965-78). In his later years, Risse concentrated his energies on a bibliographical inventory of all philosophical disciplines from the invention of book-printing to the year 1800, publishing, shortly before his death, the awesome nine volumes of *Bibliographia Philosophica Vetustas* (1998).

From: Riccardo Pozzo, *Obituary. Wilhelm Risse 11 January 1931 - 26 May 1998*, *History and Philosophy of Logic*, 20, 1999 p. 145.

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"These two volumes expound, in Prantl's manner, but more systematically, the treatises on logic from the mentioned periods. The studies of Risse, as well as those of Prantl, are indispensable to all researches in the field of history of logic."

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Volume I.

"No other branch of philosophy presently possesses a bibliography quite so extensive and comprehensive as this one for logic, which is a by-product, as the *Vorwort* explains, of Risse's systematic history of the development of logic, *Die Logik der Neuzeit*.

Volume 1 (1965, 293p.) lists in chronological arrangement monographs published from 1472 to 1800. Volume 2 (1973, 494p.) does the same for the period 1801-1969. Both volumes cite holding libraries (mainly European but also some American) for most of the works listed. Volume 3 (1979, 412p.) lists articles published both in periodicals and in anthologies, arranged according to a detailed classification system outlined in the front. Volume 4 (1979, 390p.) is a catalogue of 3,006 manuscripts, arranged by author if known and by title if anonymous, with separate sections for medieval and more recent manuscripts. Holding libraries or archives are indicated.

All volumes are thoroughly indexed."

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Volume III.

"Preface: The third volume of the "Bibliographia Logica" lists papers on logic and the history of logic which have appeared in periodicals and anthologies. The list is

incomplete for two reasons: (1) Numerous works were inaccessible to me, particularly earlier periodicals and those published outside Germany; (2) applications of logic in other disciplines are included only if logical themes are mentioned in the titles.

The variety of themes and conceptions of logic led to an arrangement of titles in three categories:

A: Logic ("traditional logic", "classical logic"), starting with Aristotle;

B: Logistics ("symbolic logic", "mathematical logic"), representations of logic in the mathematical tradition and using mathematical means;

C: History of logic.

The criterion used in categorizing the individual titles is the theme dealt with, not the point of view of the author.

The three categories are indicated by letters; sub - categories by numbers. The arrangement of material is given in the table of contents in German, English, and French (p. 9*). Titles of frequently quoted periodicals are abbreviated (Table of symbols p. 401)."

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"In something of a tour de force, Risse has compiled a comprehensive short-title bibliography that attempts to include all independently published works of Western philosophy from the invention of printing, ca. 1455, up to 1800, in (he carefully qualifies) all Western languages accessible to him. This includes not only works of philosophers who lived and wrote within the specified timeframe, but also editions of philosophers from the ancient, medieval, and early Renaissance periods. They amount to an estimated 76,400 titles. These are divided

over eight volumes of varying length, defined by a combination of subject-field and genre categories (...)

Parts 1-7 are uniformly arranged chronologically by year of publication, within each year alphabetically by author. Each part includes an author index, index of titles of anonymous works, index of authors who are the subjects of others' commentaries, and a topical index. Part 8, which lists printed academic theses in volumes 1-2, is arranged alphabetically by author of the original thesis (*disputatio*), regardless of publication year.

Under each thesis entry it lists, where applicable, published responses to it by other writers. The latter are also indexed in volume 3 of Part 8 with references back to the relevant entries in volumes 1 and 2.

The ninth volume, titled *Syllabus auctorum*, contains a complete author index, with birth and death dates, places of birth and activity, and profession (as available); a concordance of Latin and vernacular place names; and a short list of abbreviations of monastic orders.

For nearly every entry in this bibliography Risse provides, besides the customary bibliographic data, one or more location codes for holding libraries where exemplars are available. These included numerical codes for major German research libraries, alphabetical codes for some 350 additional libraries in Europe and America. As Risse notes, many of the works listed are rare, and some were found only in "smaller" libraries (preface). Those he has personally inspected are marked by an asterisk."

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