John Philoponus, and of the *Elementatio Theologica* and other works of the Neoplatonist Proclus, the figure of the historical Aristotle stood out much more clearly than before, and Western thinkers were enabled to distinguish more precisely between the Platonic and Aristotelian approaches to philosophy. William's translation of Proclus was especially important in this connection, showing as it did that the influential *Liber de Causis,* far from being a genuine work of Aristotle, was in fact derived from Proclus's *Elementatio Theologica.*

Through his translation of Proclus William also influenced the development of medieval Neoplatonism. The works that he translated gave a fresh stimulus to the Neoplatonic school formed by Ulrich of Strasbourg and other disciples of Albert the Great and through that school helped to shape the mystical doctrine of Meister Eckhart.

See also Albert the Great; Alexander of Aphrodisias; Aristotelianism; Aristotle; Eckhart, Meister; Liber de Causis; Medieval Philosophy; Neoplatonism; Philoponus, John; Proclus; Simplicius; Themistius; Thomas Aquinas, St.; Ulrich (Engelbert) of Strasbourg.

Bibliography

See Martin Grabmann, *Guglielmo di Moerbeke, O.P., il traduttore delle opere di Aristotele* (Rome: Gregorianum, 1946).

Eugene R. Fairweather (1967)

WILLIAM OF OCKHAM

(c. 1285–1349)

William of Ockham, the most influential philosopher of the fourteenth century, apparently was born sometime between 1280 and 1290 at the village of Ockham, in Surrey, near London. Entering the Franciscan order at an early age, he commenced his course of theological study at Oxford in 1309 or 1310, and completed the requirements for the degree of master of theology with the delivery of his lectures on Peter Lombard's *Book of Sentences* in 1318–1319, or, at the latest, 1319–1320. Although an old tradition indicated that he studied under John Duns Scotus, it seems unlikely that he did so, since Duns Scotus left Oxford at the beginning of the century and died in 1308. Ockham's writings show intimate familiarity with the teachings of Duns Scotus, but this is explained by the dominant position Duns Scotus had acquired at Oxford, particularly within the Franciscan order.

Ockham's lectures on the *Sentences* made a profound impression on the students of theology at Oxford, but his new way of treating philosophical and theological questions aroused strong opposition by many members of the theological faculty. Normally the completion of his lectures on the *Sentences,* which gave Ockham the status of a *baccalaureus formatus* or *inceptor,* would have been followed by award to him of a teaching chair in theology. The granting of his teaching license was prevented by the chancellor of the university, John Lutterell, who in 1323 went to the papal court at Avignon to present charges against Ockham of having upheld dangerous and heretical doctrines. Because Ockham's academic career was thus interrupted while he was an *inceptor* awaiting award of the teaching license, he came to be known as "the venerable inceptor"—a title later misconstrued as meaning "founder of nominalism" (*inceptor scholae nominalium*).

Ockham was summoned to Avignon in 1324 to answer the charges against him, and he remained there four years, awaiting the outcome. A commission of theologians appointed by Pope John XXII to examine Ockham's writings submitted two lists of suspect doctrines in 1326, but there is no evidence of any final action having been taken on the charges that, in any case, were relatively mild. Despite the lack of a teaching chair, Ockham was extremely active during these years in developing his theological and philosophical positions, writing treatises and commentaries on logic and physics, a variety of treatises on theological questions, and an important series of quodlibetal questions that, presumably, he debated orally at Oxford or at Avignon.

In 1327, while at Avignon, Ockham became involved in the dispute then raging over the question of apostolic poverty, in which the general of the Franciscan order, Michael of Cesena, took a position opposed by the pope. Asked to study the question, Ockham found that a previous pope, Nicholas III, had made a pronouncement that fully supported the position of Cesena and of the majority of the Franciscans. When this controversy reached a critical stage in 1328, and it became evident that John XXII was about to issue an official condemnation of the position held by the Franciscans, Cesena and Ockham, along with two other leaders of the Franciscan opposition, fled from Avignon and sought the protection of Emperor Louis of Bavaria, who had repudiated the authority of the Avignon papacy in connection with the issue of succession to the imperial crown. Immediately after their flight from Avignon, Ockham and his companions were excommunicated by the pope for their refusal to submit to his authority.

Under the emperor's protection Ockham took up residence in Munich and devoted his full energies to writing a series of treatises on the issue of papal power and civil sovereignty, in which he held that John XXII had forfeited his right to the papal office by reason of heresy. When John XXII died in 1334, Ockham continued his polemic against the succeeding Avignon popes until 1347, when Louis of Bavaria died and the antipapal position became a lost cause. There is evidence that Ockham at that time sought reconciliation with the papal authority and with the rest of his own order, but the outcome is unknown. It is believed that he died in 1349, a victim of the Black Plague that, in the middle of the fourteenth century, took the lives of most of the intellectual leaders of northern Europe and played a major part in bringing about the cultural decline that lasted for more than a century.

WRITINGS

Ockham's writings fall into two distinct groups associated with the two different periods of his career. All of the political and polemical treatises directed against the Avignon papacy were written during his residence in Munich, between 1333 and 1347. Of these treatises many are solely of historical interest; but the lengthy *Dialogus Inter Magistrum et Discipulum,* written between 1334 and 1338, the *Octo Quaestiones Super Potestate ac Dignitate Papali,* written in 1340, and the *Tractatus de Imperatorum et Pontificum Potestate,* composed around 1347, present Ockham's philosophy of church and state and convey his deep-rooted convictions concerning the religious mission of the church.

The nonpolitical writings that embody Ockham's distinctive contributions to philosophy and theology were probably all written while he was at Oxford and at Avignon, between 1317 and 1328. The earliest of these include the lectures on the *Sentences,* a lengthy exposition of Aristotle's *Physics* extant only in manuscript form, and literal commentaries on Porphyry's *Isagoge* and on Aristotle's *Categoriae, De Interpretatione,* and *De Sophisticis Elenchis*; the first three of the commentaries were published at Bologna in 1496 under the title *Expositio Aurea … Super Artem Veterem* (Golden Exposition … of the Ancient Art). Ockham's most important work on logic, completed before he left Avignon, was a systematic treatise titled *Summa Logicae,* extant in several printed editions. An incomplete *Summulae in Libros Physicorum* (also given the title *Philosophia Naturalis*) contains an independent treatment of the subjects dealt with in the first four books of Aristotle's *Physics,* and was printed in

several editions, beginning in 1495. In manuscript form only there is a work titled *Quaestiones Super Libros Physicorum,* which was probably one of his later writings; it covers, in the form of disputed questions, most of the topics treated in his earlier literal commentary on the *Physics* but reflects some changes in his views that occurred after the earlier work had been written. Two short compendia of logic, each extant only in a single manuscript version, are believed to be authentic works of Ockham, but they add nothing significant to the doctrines of his *Summa Logicae.*

Of Ockham's theological writings the lectures on the first book of the *Sentences,* known as the *Ordinatio* because Ockham revised and edited them for circulation, are of primary importance. Printed at Lyons in 1495, along with Ockham's lectures on the other three books of the *Sentences,* they are called the *Reportatio* because the text is derived from stenographic versions of the lectures as they were delivered. A modern critical edition of both parts of these lectures on the *Sentences* is very much needed. Of comparable importance for the understanding of Ockham's philosophical and theological doctrines are the quodlibetal questions, printed at Paris in 1487 and again at Strasbourg in 1491 under the title *Quodlibeta Septem.* Three other certainly authentic theological treatises, composed during the Oxford-Avignon period, are the *Tractatus de Corpore Christi* and *Tractatus de Sacramento Altaris,* which have been regularly printed together under the second of these titles, and the *Tractatus de Praedestinatione et de Praescientia Dei et de Futuris Contingentibus,* of which a modern edition, edited by Philotheus Boehner, was published in 1945. The 1495 Lyons edition of Ockham's theological works includes *Centiloquium Theologicum,* whose authenticity has been questioned by many scholars but without decisive evidence. In describing the philosophical doctrines of Ockham, use will be made chiefly of the *Commentary on the Sentences,* the *Summa Logicae,* and the *Quodlibeta Septem.*

CHARACTER OF OCKHAM'S PHILOSOPHY

Ockham's major contributions to the development of late medieval and early modern philosophy were in the areas of epistemology, logic, and metaphysics. His approach to these problems and his concern with them were those of a scholastic theologian, as had been the case with Thomas Aquinas, Duns Scotus, and other leading scholastic thinkers of the thirteenth century.

The basic problem of scholastic theology since the beginning of the thirteenth century had been that of finding a means of accommodating the philosophical system of Aristotle within the dogmatic framework of Christian doctrine. To achieve such an accommodation was a philosophical task because no alteration in the articles of the faith could be allowed, and consequently all elimination of contradictions had to be achieved by internal criticism or reinterpretation of the philosophical assumptions and arguments of Aristotle. Aquinas had sought to achieve an essentially external accord between natural philosophy and Christian theology, such as would leave the Aristotelian system internally intact. The Franciscan theologians, from St. Bonaventure to Duns Scotus, had considered this inadequate and had sought to achieve the required integration of philosophy and theology by exploiting the more Platonic elements of the Aristotelian system, much as the Greek Neoplatonists and the Muslim philosopher Avicenna had done. All of the thirteenth-century syntheses of philosophy and theology involved, in one form or another, the metaphysical and epistemological doctrine of realism—the doctrine that the human intellect discovers in the particulars apprehended by sense experience an intelligible order of abstract essences and necessary relations ontologically prior to particular things and contingent events and that from this order the intellect can demonstrate necessary truths concerning first causes and the being and attributes of God.

EMPIRICISM AND NOMINALISM. Ockham's significance, both as a theologian and as a philosopher, lay in his rejection of the metaphysical and epistemological assumptions of medieval realism, and in his reconstruction of the whole fabric of philosophy on the basis of a radical empiricism in which the evidential base of all knowledge is direct experience of individual things and particular events. The counterpart of this epistemological empiricism was the nominalistic analysis of the semantical structure and ontological commitment of cognitive language that Ockham developed in his logical writings. Ockham's empiricism was not phenomenalistic or subjectivistic, and it could be called a realistic empiricism according to a modern usage of "realism"; it presupposed and was based on the principle that the human mind can directly apprehend existent individuals and their sensible qualities, and that it can also directly apprehend its own acts. Insofar as Ockham is called a nominalist, his doctrine is not to be construed as a rejection of any ontological determination of meaning and truth, but rather as an extreme economy of ontological commitment in which abstract or intensional extralinguistic entities are systematically eliminated by a logical analysis of language.

OCKHAM'S RAZOR. The principle of parsimony, whose frequent use by Ockham gained it the name of "Ockham's razor," was employed as a methodological principle of economy in explanation. He invoked it most frequently under such forms as "Plurality is not to be assumed without necessity" and "What can be done with fewer [assumptions] is done in vain with more"; he seems not to have used the formulation "Entities are not to be multiplied without necessity." The principal use made by Ockham of the principle of parsimony was in the elimination of pseudo-explanatory entities, according to a criterion he expresses in the statement that nothing is to be assumed as necessary, in accounting for any fact, unless it is established by evident experience or evident reasoning, or is required by the articles of faith.

POSITIVE THEOLOGY. As applied by Ockham, the principle of parsimony resulted in an empiricist criterion of evidence that left little room for a natural theology. But since it also reduced physics and cosmology to the status of positive sciences without metaphysical necessity, it left room for a positive theology based on revelation and faith that could no more be refuted than it could be demonstrated by any necessary reasons or observational evidence. Moreover, this positive theology, in which God is conceived as the omnipotent creator of all finite things whose creative and causal action is wholly free and unnecessitated, provided an indirect justification of Ockham's philosophical empiricism, since it demanded a conception of the world of created things as radically contingent in both their existence and their interaction. Ockham made full use of the doctrine of divine omnipotence as an ad hominem argument against those who sought to discredit his philosophical doctrine on theological grounds; philosophically, however, the doctrine was equivalent to the principle that whatever is not self-contradictory is possible, and that what is actual, within the range of the logically possible, cannot be established by reason alone but only by experience.

CRITIQUE OF REALISM

Ockham's epistemology and metaphysics were designed to resolve a basic problem that the Scholastics had inherited from the Greek philosophical tradition and that may be summed up in the paradoxical thesis that the objects of thought are universal, whereas everything that exists is singular and individual. Seeking to overcome this gap between the intelligible and the existent, the earlier

Scholastics had elaborated various forms of the doctrine called moderate realism, according to which there are common natures in individual existing things, distinct from their individuating principles although not separable except in thought. On the psychological side, these doctrines held that the human intellect abstracts, from the particular presentations of sense experience, an intelligible species, or likeness, by means of which it apprehends the common nature apart from the individuating conditions. The varieties of this moderate realism turned on the answer to the question of whether, in an individual, the common nature is (1) really distinct from the individuating principle or (2) "formally distinct," as Duns Scotus proposed or (3) distinct only according to the mode of consideration although involving some "foundation in the thing" for such distinguishability, as Aquinas held.

Ockham considered all forms of this doctrine of common natures in individual things to be self-contradictory and irrational. If the human nature of Socrates is really distinct from Socrates, then it is not Socrates' nature or essence, for a thing cannot be said to be essentially something that it really is not. If the common nature is anything at all, it is either one thing or many things; if one and not many, it is not common but singular, and if not one but many, then each of the many is singular and there is still nothing common.

CRITICISM OF THE SCOTIST VIEW. The answer of Duns Scotus—that the common nature is really identical with, but formally distinct from, the *haecceitas* or individuating differentia that was said to contract the specific nature to singularity—was an attempt to find something intermediate between identity and nonidentity. Ockham argued, against the Scotist thesis, that if the specific nature and the individuating difference are really identical, they cannot be formally distinct; and if they are formally distinct, they cannot be really identical. Duns Scotus had claimed that they are both really identical and formally distinct. Let *a* and *b* represent the individual difference and the specific nature, respectively. Then, since *a* is not formally distinct from *a,* it follows that if *a* is identical with *b,* then *b* is not formally distinct from *a.* Similarly, since *a* is not formally distinct from *a,* then if *b* is formally distinct from *a, b* is not identical with *a.* In these arguments Ockham employs, with great effectiveness, the principle commonly ascribed to Gottfried Wilhelm Leibniz—that if two things are identical, whatever is true of one is true of the other; and if something is true of one that is not true of the other, they are not identical.

CRITICISM OF THE THOMIST VIEW. The third answer—that the same thing is singular and universal according to different ways of considering it—is ridiculed by Ockham on the ground that what a thing is in itself can in no way depend on how someone thinks of it. "For with the same ease I could say that a man considered in one way is an ass, considered in another way he is an ox, and considered in a third way he is a she-goat" (*Expositio Super VIII Libros Physicorum,* in *Ockham: Philosophical Writings,* edited by Philotheus Boehner, p. 14). Nor can it be said, as Aquinas appears to say in his *De Ente et Essentia,* that the nature or essence of a thing is in itself neither individual nor universal but is made singular by being received in individuating matter and is made universal by being received into the mind. Anything whatsoever, Ockham insists, is one thing and a singular thing by the very fact that it is a thing, and it is impossible that its unity or singularity is due to something added to it.

OCKHAM'S POSITION. It remains, then, that universality and community are properties only of signs—of language expressions and of the acts of thought expressed by them. The problem of universals therefore is not a metaphysical problem of explaining how abstract common natures are individuated to singular existence, nor is it a psychological problem of explaining how the intellect can abstract from the images of sense experience a common nature inherent in the individuals experienced; for there are no common natures to be individuated or to be abstracted. The problem of individuation is a logical problem of showing how general terms are used in propositions to refer to individuals signified by them; this problem is resolved in terms of the quantifying prefixes and other syncategorematic determinants of the referential use of terms in propositions. As an epistemological problem, the problem of universals is that of explaining how experience of individual existing things can give rise to concepts of universal character and to universally quantified propositions that hold for all objects signified by the subject term. The basis of Ockham's answer to these problems is given in his doctrine of intuitive and abstractive cognition.

INTUITIVE AND ABSTRACTIVE COGNITION

The doctrine of intuitive and abstractive cognition is formulated at the beginning of Ockham's *Commentary on the Sentences* in connection with the question of whether evident knowledge of theological truths can be acquired by man in this life. After distinguishing apprehension

from judgment as a distinct act of the intellect, and after showing that every act of judgment presupposes an act of apprehension of what is signified by the terms of the proposition expressing such a judgment, Ockham distinguishes two kinds of intellectual apprehension, intuitive cognition and abstractive cognition.

Intuitive cognition is defined as an act of apprehension in virtue of which the intellect can evidently judge that the apprehended object exists or does not exist, or that it has or does not have some particular quality or other contingent condition; in short, an intuitive cognition is an act of immediate awareness in virtue of which an evident judgment of contingent fact can be made.

Abstractive cognition is defined as any act of cognition in virtue of which it cannot be evidently known whether the apprehended object exists or does not exist, and in virtue of which an evident contingent judgment cannot be made. That these two ways of apprehending the same objects are possible is clear from experience; while I am observing Socrates sitting down, I can evidently judge that Socrates is seated, but if I leave the room and then form the judgment that Socrates is seated, it is not evident, and may indeed be false.

The important point in this distinction is that intuitive and abstractive cognition do not differ in the objects apprehended, but solely in the fact that intuitive cognition suffices for making an evident contingent judgment concerning the object apprehended, whereas an abstractive cognition does not. Nor is the distinction one between sensation and thought, for however much it may be true that affection of the senses by the external object is a necessary condition for an intuitive cognition of a sensible object, the intuitive cognition is an intellectual act that is presupposed by the act of judgment whose evidence is derived from it. Neither is the distinction one between direct awareness of the object and awareness of something representing the object in its absence; both kinds of apprehension are directly of the object. It is not even logically necessary that the object of an intuitive cognition be present or actually existent, although if, by the power of God, an intuitive cognition of an object were preserved after the object was removed or destroyed, it would then yield the evident judgment that the object was not present or that it did not exist; for it is self-contradictory, and hence not even within the power of God, for a cognition to yield an evident judgment that an object exists if the object does not exist.

INTUITIVE COGNITION OF NONEXISTENTS. Ockham must admit that an intuitive cognition of a nonexistent object is logically possible because an intuitive cognition, however much it may be caused by the presence of its object, is not identical with its object; hence it is not self-contradictory that it exists without the object's existing. And if we suppose that any effect that can be produced by a created cause can be produced by God without the created cause, this logical possibility could be realized by the power of God. In this way God could, and according to Christian belief did, produce intuitive cognitions of future things and events by which the prophets and saints had evident knowledge of what did not yet exist; and God himself, who apprehends all things intuitively and not abstractively, is aware not only of the things he has created but of all the things he does not choose to create. Thus, an intuitive cognition of a nonexistent object is logically possible, although it is realizable only by the power of God. Without such divine intervention, however, such cognitions can arise only if the object is present to the knower; and the judgments to which intuitive cognitions can give rise, in the natural course of events, are affirmative judgments of present existence and present fact.

INTUITIVE COGNITION OF MENTAL STATES. Ockham does not restrict the objects of intuitive cognition to objects perceptible to the external senses but includes nonsensible actualities that are apprehended introspectively, such as thoughts, volitions, and emotions. Thus the intellect, by reflecting on its own acts, can form evident judgments of the existence of those acts; for example, if I am intuitively aware of Socrates being seated, I can not only judge evidently that Socrates is seated, but I can also give evident assent to the second-order proposition "I evidently know that Socrates is seated." Although Ockham generally holds that the reflexive act is distinct from, and posterior to, the direct act, he speaks as if the evidence of the reflexive act can include that of the direct act.

DERIVATION OF ABSTRACTIVE COGNITIONS. Given an intuitive cognition of some object or event, the intellect thereby acquires an abstractive cognition of the same object or event, which it retains as a *habitus,* or acquired capacity, to conceive the object without any causal concurrence by the object itself; thus, objects that we have experienced intuitively can be apprehended abstractively, the only difference being that the abstractive cognition does not suffice to make evident a contingent judgment concerning the object thought of. If we leave out of account the logically possible case of God's producing an abstractive cognition without a preceding intuitive cogni-

tion, the principle holds, according to Ockham, that no abstractive cognition can be had that is not derived from an intuitive cognition of the object or objects conceived. This principle, which corresponds to David Hume's thesis that there is no idea which is not derived from one or more impressions, is basic to Ockham's theory of natural knowledge and its source of evidence.

UNIVERSALITY OF ABSTRACTIVE COGNITION. In his earlier formulation of the doctrine of intuitive and abstractive cognition, Ockham supposed that the abstractive cognition immediately derived from an intuitive cognition is a concept only of the singular object of the intuitive cognition. But in his *Quodlibeta* (Quod. I, q. 13) he states that a simple abstractive cognition cannot be a concept peculiar to one singular object to the exclusion of other objects that would, if apprehended intuitively, yield a wholly similar concept. Thus the universality of the concept, in this later theory, is immediately involved in the transition from intuitive to abstractive cognition. The operation is analogous to that of deriving, from a proposition of the form *Fa,* the open sentence *Fx,* which becomes a general proposition when the free variable x is bound by a quantifying prefix. In Ockham's terminology, the abstractive cognition has signification but acquires supposition only by formation of a judgment or proposition.

CONCEPTS. The concept, or universal in the mind, is a cognition of objects in virtue of which it cannot be evidently judged that they exist or do not exist. But what sort of reality is such a cognition or concept? One opinion is that the concept is a mental image or species which, because it is a resemblance of the external objects, causes the intellect to become aware of those objects. But Ockham points out, as Hume did later, that such a species could in no way represent to the intellect the objects of which it is a likeness, unless these objects were already known to it—no more, Ockham says, than a statue of Hercules could represent Hercules, or be recognized as his likeness, if the viewer had never seen Hercules.

In his *Commentary on the Sentences* Ockham mentions three theories of the concept as "probable" or tenable. According to the first theory, the concept is not a reality existing in the mind or outside the mind but is the being conceived of the external objects, the *esse obiectivum* of the objects—a view that was held by Peter Aureol and had adherents down to the time of René Descartes, who in the *Meditations* used this notion of the "objective being" of the concept in proving God's existence from his idea of God. Of the concept thus conceived, Ockham says that its being is its being understood—*eorum esse est eorum cognosci.* A second theory supposes that the concept is a real quality in the soul, used by the intellect for the individuals of which it is a concept, just as a general term in a proposition is used for the individuals of which it is a sign. A third theory, which Ockham finally adopted, is that the concept is merely the act of understanding the individual things of which it is said to be a concept. This theory is preferred on grounds of economy, for inasmuch as any of the theories requires that the intellect apprehend the extramental individuals, this function can be satisfied by the act of understanding without need of any other mental vehicle serving as surrogate for the objects.

Generality of concepts. The question may well be raised of how a concept derived from intuitive apprehension of a single object can constitute an act of understanding a definite set of objects—not any objects whatsoever but just those objects to which the concept is applicable or which, if directly experienced, would elicit that concept. Why should an intuitive cognition of Socrates yield a general concept applicable to just those individuals of which it is true to say "This is a man"? Ockham says that this is because the objects are similar, on which account the abstractive concept elicited by experience of one of the objects is ipso facto a concept of all similar objects. The realist might well insist that Ockham, in supposing this similarity in things, is covertly reintroducing the doctrine of common natures; but Ockham replies that similar individuals are similar by reason of what each individual is in itself, and not by reason of anything common. Two things are similar, for example, in being singular things, but this is not because there is one singularity common to the two things. Thus a concept can be a single act of understanding many individuals that are similar, without being an act of understanding anything other than just those individuals themselves. Again the analogy with the open sentence *Fx* is suggested, for if we should ask what things satisfy this function, the answer is that it is any of those things such that *Fx* holds for it. The obvious circularity of this question and answer indicates that any explanation that can be given of the fact that things are conceived in a universal manner by intelligent beings must itself use such universal concepts and thereby must presuppose the fact to be explained.

Concepts as natural signs. In this account Ockham describes concepts as natural signs whose relation to the things conceived is established not by human choice but by the fact that an act of understanding has no content other than the objects understood and arises in the first

instance only through direct experience of such objects. Ockham seems to recognize the futility of seeking to account for the possibility of knowledge as such by means of a particular branch of knowledge like physics or psychology; "*natura occulte operatur in universalibus* [nature works in a hidden manner in the case of universals]," he remarks, and is content to leave it at that.

LOGIC AND THEORY OF SCIENCE

Although the human intellect, according to Ockham, can directly apprehend and conceive the individual things that exist independently of our thought, the objects of knowledge (in the sense of *scire*) are propositions, formed within our minds by operations we freely perform by combining concepts derived from intuitive cognitions of things. Only propositions can be true or false, and since knowledge is of the true, its objects are propositions—complexes of signs put together by us. Logic is concerned with these ways of putting concepts together, insofar as these operations affect the truth or falsity of the resultant propositions.

Ockham was skilled in the formal logic developed in the arts faculties of the universities on foundations laid in the twelfth century by Peter Abelard, and represented in the thirteenth century by the treatises of the so-called terminist logicians William of Sherwood and Peter of Spain. The distinctive feature of this logic was its use of the concept of the supposition of terms in formulating the syntactical and semantical properties of cognitive language. In his *Summa Logicae* Ockham systematized the contributions of his predecessors in a reformulation of the whole content of Aristotelian logic on semantical foundations of a purely extensional character. These foundations, exhibited in his analysis of the signification of terms and of the truth conditions of propositions, reveal the ontological basis of his empiricist theory of knowledge and of scientific evidence. Some preliminary distinctions made at the beginning of Ockham's work on logic are important for understanding this analysis.

LOGIC AS A SCIENCE OF LANGUAGE. Logic, as a *scientia sermocinalis,* or science of language, deals with language as a system of signs that can be used in making true or false statements about things signified by those signs. The expressions of spoken and written language are instituted by convention to signify what is naturally signified (or intended) by acts of thought constituting the "inner discourse of the soul." Logic studies the properties of language expressions insofar as they embody the logically essential functions of mental discourse. Medieval logi-

cians distinguished language signs into two basically different types: categorematic signs, which have independent meaning and can function as subjects and predicates of propositions, and syncategorematic signs, which have no independent meaning but exercise various logical functions with respect to the categorematic signs.

This important distinction corresponds to that made in modern logic between descriptive signs and logical signs. The categorematic signs, normally called terms, were divided into two distinct and nonoverlapping semantical types: terms of first intention, which signify things that are not language signs, and terms of second intention, which signify language signs or the concepts expressed by them, as signs. This distinction corresponds to that now made between the descriptive signs of the object language and the descriptive signs of the metalanguage. In Ockham's view, most of the metaphysical labyrinths in which the thirteenth-century Scholastics became entangled, such as the problem of universals in re, arose from the logical mistake of construing terms of second intention as terms of first intention; thus, because the term *man* is predicable of (or inheres in) the singular names "Socrates" and "Plato," they supposed that what is signified by the term *man* is some single reality that inheres in the individuals named by the names "Socrates" and "Plato."

SUPPOSITION. "Supposition" is defined by Ockham as the use of a categorematic term, in a proposition, for some thing or things—normally, for the thing or things it signifies. But terms can be used nonsignificatively as names of the concepts they express or as names of the spoken or written words of which they are instances. When used nonsignificatively as the name of the word, they were said to have material supposition; when used nonsignificatively as naming the concept expressed by the word, they were said to be used with simple supposition; but when used significatively for the things signified by them and understood by the concept or act of understanding expressed by them, they were said to be used in personal supposition. The earlier terminist logicians, who were metaphysical realists, had construed simple supposition as the use of a term for the universal nature that they supposed to exist in the individuals denoted by the term in its personal supposition—which is why they called this use simple (or absolute) supposition. But Ockham, who held that universality is a property only of concepts or language signs, rejected this interpretation and construed simple supposition as the use of a term for the concept or mental intention expressed by it.

The ontological foundations of Ockham's logic are exhibited in his analysis of the terms of first intention that Aristotle classified, in his *Categoriae,* as so many different ways of signifying "primary substances"—that is, concrete individuals. The terms Aristotle grouped under the category of substance, as signifying beings qua beings according to what they essentially are, were said by Ockham to be absolute terms, terms that signify nothing other than the individuals for which they can stand when used in propositions with personal supposition. The concrete terms of the so-called categories of accident, which are predicable of substance terms but signify them only as "of such quality," as "so big," or as "in such a place," were called by Ockham connotative terms—terms that refer obliquely to something other than the thing or things for which they can stand, and imply some contingent factual condition determining the range of objects for which the term can stand. The oblique reference may be to a part or parts of the object directly denotable by the term, to a quality of the object, or to some other thing or things with respect to which the denoted thing stands in some contingent relation—for instance, the term *father* stands for one thing by referring to another thing (a child) and implying that the child was generated by the person who is directly designated by the term *father.*

NOMINALISM. Ockham's nominalism consists in his refusal to construe abstract terms as names of entities distinct from the individual things signified by absolute terms. The realists, while conceding that the concrete forms of connotative terms stand for substances, held that their oblique reference is to entities distinct from these substances but inhering in them—these distinct entities are directly named by the abstract forms of such connotative terms. Thus the term *father,* in their view, connotes an entity called fatherhood and implies that it inheres in the thing denoted by the term *father.* Similarly the term *large,* although predicable of terms signifying substances, was said to connote an entity, distinct from such substances but inhering in them, called quantity or magnitude. Ockham was willing to grant that terms signifying sensible qualities, such as *white, hot,* and *sweet,* connote entities that are distinct from substances and are directly signified by the abstract terms *whiteness, heat,* and *sweetness*; hence he admitted as absolute terms the abstract forms of those qualitative predicates. But in all other cases he held that connotative terms, whether concrete or abstract, signify no entities other than those directly signifiable by substance terms or by these absolute quality terms. What the realists had done, in Ockham's view, was to treat facts about substances as entities distinct from those things, as if the fact that a man is six feet tall is an entity distinct from the man but inhering in him, or as if the fact that Socrates has fathered a son is an entity distinct from Socrates and from his son.

From a logical point of view, Ockham's analysis is a restriction of the domain of reference of terms, or of the domain of objects constituting possible values of the variable of quantification, to individual substances and singular (not common) sensible qualities. Ontologically, this means that the only things that there are, are individual substances and equally individual qualities. All terms that are not direct names (or absolute signs) of these objects are predicate terms which, although referring to no other objects than these, do so by indicating a contingent fact about such objects.

In thus impoverishing the domain of objects of reference, Ockham enriches the domain of truths to be known about these objects. The frequent charge that Ockham atomized the world by refusing to recognize relations as real entities distinct from substances and qualities fails to take account of the fact that the connotative terms relate the individuals by implying factual conditions by which the objects are tied together in an existential sense—something that cannot be done by treating relations as entities distinct from their relata and, in effect, as just another class of substances. From Ockham's point of view, it was the realists who atomized the world by treating all predicates as absolute names.

In rejecting the thesis that predicates designate entities distinct from the individuals denoted by absolute terms, Ockham rejects the interpretation of the affirmative copula as a sign of the inherence of an abstract entity in the individuals denoted by the subject term. The truth condition of an affirmative categorical proposition, in Ockham's interpretation, is that subject and predicate "stand for the same." Thus, in the proposition "Socrates is an animal," it is not indicated that Socrates has animality or that animality inheres in Socrates, but it is indicated that the individual denoted by the name "Socrates" is an individual for which the term *animal* stands and which it signifies. In universally quantified propositions, the affirmative copula indicates that every individual for which the subject term stands is something for which the predicate term stands; and in particular, or existentially quantified, propositions, the affirmative copula indicates that there is at least one individual signified by the subject term that is also signified by the predicate term.

This analysis of general propositions corresponds closely to the modern formulas $(x)Fx \supset Gx$ and $(\exists x)Fx \cdot Gx,$ except that the medieval analysis requires existential

import as part of the truth condition of the universal affirmative and does not require existential import as a truth condition of the particular negative. In order for subject and predicate to stand for the same, there must be something they stand for; but it is not required that they stand for something in order that they not stand for the same thing. Ockham skillfully carried out the formal development of truth rules for propositions of more complex forms and for various modalities and used them in formulating inference rules both for syllogistic arguments and for arguments based on truth-functional relations between unanalyzed propositions.

SCIENTIFIC KNOWLEDGE. The Aristotelian dictum that science is of the universal was accepted by Ockham in the sense that scientific knowledge is of propositions composed of universal terms, quantified universally for all the individuals signified by the subject term and having the properties of necessity and evidence. Strictly speaking, scientific knowledge is only of demonstrable conclusions evident by reason of indemonstrable, necessary, and evident premises from which they are logically deducible. But Ockham extends the notion of *scientia,* defined as evident grasp of a proposition that is true, to include the indemonstrable premises of demonstrations and also to include evident knowledge of contingent propositions in virtue of intuitive cognition.

EVIDENCE AND SELF-EVIDENCE. Since, for Ockham, the universal propositions of scientific demonstrations are formed only from concepts by which things are apprehended abstractively and without evidence of their existence, the question of what kind of evidence such propositions can have is a crucial question for him. This problem reduces to that of the evidence of the indemonstrable premises of the sciences. Aristotle's characterization of such premises as necessary, self-evident (*per se nota*), and primary could not be accepted by Ockham without considerable qualification. First of all, he says that no such propositions are necessary as assertoric categorical propositions, but are necessary only if they are construed as conditionals or as propositions concerning the possible (*de eo quod potest esse*). Second, he distinguishes between two kinds of evidence that such propositions, construed as conditionals or as of the mode of possibility, may have: the proposition may be evident by the meaning of its terms (*per se nota*) or evident by experience (*nota per experientiam*). The first kind of evidence is obtained through the premises of mathematical demonstrations and by those premises of the natural sciences that are analytically evident by the definition of the terms. But in every natural or physical science there are premises that are not *per se nota* but are established by generalization from singular contingent propositions evident by intuitive cognition; such are the premises that state causal laws or correlate dispositional properties with their commensurately universal subject terms.

INDUCTION. What justifies the passage from singular propositions evident by direct experience to universal propositions affirmed for all possible cases? How does evident knowledge that this particular wood is combustible, acquired by direct observation of its burning, allow us to know that any piece of wood, if subjected to fire in the presence of air, will burn? Ockham invokes as justification for such generalized propositions a rule of induction, described as a *medium extrinsecum,* that corresponds to the principle of the uniformity of nature—that all individuals of specifically similar nature (*eiusdem rationis*) act or react in similar manner to similar conditions. He regards this principle as analytically evident from the meaning of "similar nature"; but since it is logically possible, and hence possible by the power of God, that an effect can be produced without its natural cause, the application of this rule of induction in establishing general premises or laws on the basis of experience of particular cases is valid only within the general hypothesis of the common course of nature (*ex suppositione communis cursus naturae*). Consequently, the evidence of such premises of the natural or positive sciences is not absolute but hypothetical. It should be further noted that Ockham, and his contemporaries as well, drew a sharp distinction between what comes to be by nature and what comes to be by the action of voluntary intelligent agents, both man and God. The principle that like causes produce like effects under like conditions is considered valid only on the supposition that no voluntary agencies are involved.

There is a marked analogy between Ockham's view of the evidential status of the premises of the empirical sciences and that of the premises of positive (or revealed) theology. In the one case their evidence is conditional on the hypothesis of a common course of nature, and in the other on the hypothesis of a revealed order of grace freely (and hence not necessarily) provided by God for the salvation of human souls. Neither hypothesis is logically or metaphysically necessary, and each is, in its own domain, used as a methodological principle pragmatically justified by its fruitfulness. What corresponds to Pelagianism in theology is dogmatic Aristotelianism in natural philosophy, and Ockham takes due precautions against both.

METAPHYSICS AND THEOLOGY

Ockham's metaphysics is primarily a critique of the traditional metaphysical doctrines of his scholastic predecessors. Most of these doctrines represent, in Ockham's view, confusions of logical and physical concepts or of ways of signifying things and the things signified. Such is the case with the supposed distinction, in things, between their essence and their existence, and with the distinction between potential and actual being; to say that something exists does not mean that there is something which is of itself nonexistent to which existence is added, and to say that something exists potentially does not mean that "something which is not in the universe, but can exist in the universe, is truly a being" (*Summa Logicae Pars Prima,* 1951, p. 99, ll. 55–58). These are distinctions between two modalities of statements, assertoric and *de possibili,* and not between things denoted by the terms of statements. The old issue of whether "being" is predicated univocally, equivocally, or analogically of substances and accidents, and of God and creatures, is resolved by saying that in the sense in which "being" is equivalent to "something," it is predicated in the same way of everything there is; but if "univocal" is taken as meaning that the term signifies everything according to a single determinate concept, the term *being* is equivocal and has as many meanings as there are kinds of things. The first sense is like saying $(x)(x = x)$; the second, or equivocal use, is indicated if we say "*to be a man* is not *to be white.*"

SUBSTANCE. The term *substance,* for Ockham, has the sense of Aristotle's primary substance, or ὑποκείμενον, rather than the sense of intelligible essence, or τὸ τί ἦν εἶναι. Basically, substance is conceived as the individual subject or substratum of qualities, and with regard to corporeal substances Ockham indicates that we are aware of substances only as the subject of sensible qualities. Thus he says that "no external corporeal substance can be naturally apprehended in itself, by us, however it may be with respect to the intellect itself or any substance which is of the essence of the knower" (*Commentary on the Sentences* I, d. 3, q. 2), and he adds that "substance is therefore understood in connotative and negative concepts, such as 'being which subsists by itself,' 'being which is not in something else,' 'being which is a subject of all accidents,' etc." (ibid.). These remarks suggest that the general terms of the category of substance are not as absolute as Ockham elsewhere supposes, and that the only nonconnotative concept is the transcendental concept "being" or "thing"; on this basis, general names are eliminated in favor of connotative predicates, proper names are eliminated in favor of descriptive phrases, and the whole category of substance is reduced to the referential function expressed in language by the phrase "thing such that … ," or by what is equivalent to the bound variable of quantification. Historically, Ockham's conception of substance as the posited (or "supposited") referent of the connotative predicates points toward John Locke's "something I know not what" characterization of substance; similarly, Ockham's treatment of sensible qualities as entities distinct from substances (and by the power of God separable, as in the Sacrament of the Altar), along with his contention that quantitative predicates signify nothing other than substances having parts outside of parts, pointed the way to the seventeenth-century treatment of qualities as secondary and quantitative attributes as primary.

MATTER AND FORM. With respect to the notion of cause, Ockham effected a considerable modification of the traditional Aristotelian doctrine. The intrinsic causes, matter and form, were construed physically rather than metaphysically; matter is not, for Ockham, a pure potentiality but is actual in its own right as body having spatially distinguishable parts, its extension being, in the scholastic terminology, the form of corporeity. The concept of form likewise is understood physically in the sense of μορφή rather than of εἶδος, and tends to be understood as shape and structure of the material parts. This is shown in Ockham's rejection of the notion of a form of the whole (*forma totius*) and in his thesis that a whole is its parts. Many pages of Ockham's works are devoted to the thesis, defended with an almost ferocious intensity, that quantity is not any entity other than substance (or quality), but is substance or sensible qualities as divisible into parts, or as numerable. This doctrine clearly suggests the later view that the primary qualities signified by quantity terms constitute the real essence of substances.

EFFICIENT CAUSES. The tendency toward a more mechanistic theory of natural substances and events is evident in Ockham's treatment of efficient causality. He says that one thing is said to be cause of another if, when it is present, the effect follows, and when it is not present, the effect does not occur. Such a causal relation can be known only by experience, and it is impossible to deduce a priori, from knowledge of one thing, that something else must result from it. This is so on the general epistemological principle that from the cognition of one thing we cannot acquire "first knowledge" of another thing which is really distinct from it but must have intuitive cognition of the latter in itself. Hence the knowledge that one thing is the cause of another, or that something is caused by

some other definite thing, is acquired only if we have intuitive cognition of each of the two things and repeated experience of their concomitance or sequence.

Like Hume, Ockham bases our knowledge of causal relations on experience alone and rejects the doctrine that the effect is virtually in its cause and deducible from the essential nature of the cause. But he is not skeptical with regard to the objectivity of causation; his point is that the only evidence we have of causal connections is experience of observed sequences. Although we cannot establish the causal relations between things a priori, and must accept the principle of the uniformity of nature as an act of faith, Ockham's faith in this principle appears to be as firm as his faith in the revealed doctrines of theology. In his *Summulae Physicorum* (II, c. 12) he says: "Leaving out of consideration all free and voluntary agencies, whatever happens by [natural] causes occurs of necessity and inevitably, and nothing of that sort occurs by chance" (1637 ed., p. 14).

FINAL CAUSES. The Aristotelian doctrine that nature acts for an end is interpreted by Ockham as a pure metaphor. In his *Quodlibeta* (Quod. IV, qq. 1 and 2) he states that it cannot be shown by any self-evident premises or by experience that any effect whatsoever has a final cause, whether distinct from the agent or not distinct from the agent; for that which acts by necessity of nature acts uniformly under like conditions, and it cannot be shown that it does so because of some end desired or aimed at. We speak of natural processes as having ends, not because the agents are really "moved by desire" but simply because natural bodies under similar conditions are observed to act in determinate ways, as if aiming at an end. But such language is purely metaphorical.

In applying his strict criteria of evidence to the doctrines of Aristotelian physics and cosmology, Ockham shows that many principles which Aristotle took to be necessary and self-evident are not. The arguments that celestial bodies have no matter and are ingenerable and incorruptible, that there cannot be a plurality of worlds, and that action at a distance is impossible were held by Ockham to be inconclusive and nonevident. Although Ockham was not concerned with establishing a new physics and cosmology to replace that of Aristotle, his critical treatment of Aristotle's arguments and his constant insistence on the possibility of different theories equally capable of accounting for the facts to be explained were influential in creating the intellectual environment in which later fourteenth-century philosophers explored new physical theories and laid some of the foundations for the scientific revolution of the seventeenth century.

THEOLOGICAL KNOWLEDGE. As a theologian, Ockham was concerned with the question of the cognitive status of theology. The thirteenth-century Scholastics had, for the most part, characterized theology as a science, on the ground that it contains truths which are necessary and "in themselves" evident, even though most of them are not evident to man in his present condition. The question of how we can know that a proposition is evident-in-itself, when it is not evident to us, was answered by saying that a person who does not know geometry may yet be fully assured that a theorem which is an object of belief to him is an object of scientific knowledge to the expert mathematician. Thus, Aquinas said that the articles of faith from which the theologian demonstrates his conclusions are accepted as evident in the light of a higher science (that of God), much as the astronomer accepts the theorems of geometry as premises for his astronomical reasonings but nevertheless demonstrates the conclusions of astronomy in a scientific manner.

Ockham, in a question of his *Commentary on the Sentences* (Prologue, q. 7), examines this and other similar arguments and rejects them as invalid. Every truth evidently known, he says, is either self-evident (*per se nota*), deduced from such, or is evident from intuitive cognition; but the articles of faith are not evidently knowable by man in any of these ways in his present life, for if they were, they would be evident to infidels and pagans, who are not less intelligent than Christians. But this is not the case. Furthermore, it cannot be maintained that theology is a science because it carries out valid processes of deduction of conclusions from the premises accepted on faith, for conclusions cannot be any more evident than the premises from which they are derived.

IMPOSSIBILITY OF NATURAL THEOLOGY. Ockham subjects the *prolegomena fidei,* or propositions about God held to be evidently knowable on natural grounds, to the criteria of evidence and proof that pertain to the natural or philosophical sciences. The issue of whether there is a natural theology as a part of philosophy reduces to the question of whether, from analytic premises evident from the meaning of the terms or from empirical evidence provided by direct experience of the object of theology, such a science is possible. It is conceded by all that man, in his present life, does not have intuitive cognition of God— not, certainly, by getting a degree in theology. But Ockham had argued, with respect to any naturally acquired

knowledge, that it is only by intuitive cognition of an object that we can evidently judge that it exists—and the only objects of which we can have simple abstractive concepts are those we have experienced intuitively or those specifically similar to them. From this it follows that we cannot have any simple and proper concept of God nor any direct evidence of his existence. Can we, then, from concepts derived from experience of other things, form a complex concept or description uniquely applicable to God and prove that an object satisfying this nominal definition exists?

CRITIQUE OF PROOFS FOR GOD'S EXISTENCE. Ockham admits that a descriptive concept of God can be formed from the concept of "being" or "thing" in its univocal (but empty) sense, along with such connotative or negative terms as "nonfinite," "uncaused," and "most perfect." But proving that there exists an object so describable is another matter. The arguments by which his predecessors had attempted to prove God's existence are examined by Ockham with great thoroughness in his *Commentary on the Sentences,* in the *Quodlibeta,* and in the possibly inauthentic *Centiloquium Theologicum.* St. Anselm's so-called Ontological Argument is analyzed (and shown to consist of two different arguments) but is rejected as invalid; and the old arguments from degrees of perfection are disposed of without difficulty.

It is chiefly the causal arguments, in the form used by Duns Scotus, that Ockham takes seriously; and these he examines with extraordinary care because of the way in which Duns Scotus used the concept of infinity in formulating them. Ockham's great logical skill is revealed at its best in his patient and remorseless untangling of the subtleties of the Scotist arguments. Those involving final causality are shown to have no force in themselves, so that the main issues are faced in the arguments from efficient causes. The thesis that there cannot be an infinite regress in the order of efficient causes is rejected as nonevident if the causes are successive in a temporal sense, but Ockham is willing to grant that there cannot be an infinite regress of "conserving causes," since these would have to exist simultaneously. Ockham does, therefore, allow that the existence of at least one conserving cause can be proved if it is granted that there are things whose existence is dependent on conservation by something else; but he immediately points out that we could not prove that there is only one such conserving cause, nor could we prove that the celestial spheres are not sufficient to account for the conservation of the things in the world. Thus the value of this argument for theological purposes is very slight indeed. It is also clear that a natural theology, in the sense involving strictly scientific or evident demonstrations, is completely ruled out by Ockham's basic epistemological principles.

He is willing to concede that it is "probable" that there is one supreme being, that this being is the cause of at least part of the movements and order of the world, and that this being is of an intellectual nature; but since Ockham defines "probable," following Aristotle's *Topics,* as an argument or premise that appears to be true to everyone, to the majority, or to the wisest, all this means is that most people, and the philosophers of old, have believed that there is a deity of this sort.

POSITIVE THEOLOGY. To conclude, from Ockham's merciless criticism of alleged proofs of theological beliefs, that he was an unbeliever and a religious skeptic would be a mistake—although some have drawn this conclusion. There is much evidence in Ockham's writings of an intense loyalty to the Christian faith and of full commitment to the articles of faith as divinely revealed. What Ockham appears to have found objectionable in the theological work of his contemporaries was their attempt to prove what cannot be proved and their loading of theology with pseudo explanations that merely blunted and obscured the tremendous implications of the fundamental articles of the Christian faith. The omnipotence of God and his absolute freedom are the two articles of Christian belief that Ockham never loses sight of; and in his internal treatment of the content of Christian doctrine, just as in his internal treatment of natural philosophy, Ockham invokes these articles of faith as justification for an empiricist or positivistic position. Just as the hypothesis of the common course of nature is a methodological postulate of physical explanation, so the order of grace as set up in the sacramental system and laws of the church is accepted as a postulate of the Christian life; but just as God is not bound or obligated by the order of nature he has established, so he is not bound or obligated by the order of grace he has established as the "common way" of salvation of souls. Neither order is necessary in itself or a necessary consequence of God's being or essence; the utter contingency of the created world, whose existence and order is a sheer fact without any metaphysical ground of necessity, is for Ockham a consequence of the omnipotence and absolute freedom of God that cannot, and should not, be softened or obscured by attempts to construe it in terms of the metaphysics of pagans and infidels.

ETHICAL AND POLITICAL DOCTRINES

In contrast with most of the thirteenth-century scholastic doctors, Ockham made little attempt to formulate a rational psychology or theory of the human soul. In his *Quodlibeta* (Quod. I, q. 10) he raises the question of whether it can be demonstrated that the intellective soul is a form of the body. Since the Council of Vienne had ruled a few years before that this Thomist doctrine was *de fide* (although the formulation was ambiguous enough to allow some latitude), Ockham was not as critical of it as he might otherwise have been. He points out that a person following natural reason would no doubt suppose that his own acts of understanding and of will, of which he has intuitive cognition, are acts of his substantial being or form; however, he would not suppose this to be an incorruptible form separable from his body but rather an extended and corruptible form like that of any other material body. If, however, we must understand by "intellective soul" an immaterial and incorruptible form that exists as a whole in the whole body and as a whole in each part, "it cannot be evidently known by reason or experience that such a form exists in us, nor that the understanding proper to such a substance exists in us, nor that such a soul is a form of the body. Whatever the Philosopher thought of this does not now concern me, because it seems that he remains doubtful about it wherever he speaks of it. These three things are only matters of belief" (Quod. I, q. 10).

Ockham thought that the Franciscan doctrine of a plurality of forms in the human being is more probable on natural grounds than the doctrine of a single form; indeed, if matter has its own corporeal form (*forma corporeitatis*) as extended substance, the sensitive soul would be a distinct form of organization of this matter; and the intellectual soul, if immortal and incorruptible, might well be in the organic body as a pilot is in his boat. But the only evident knowledge we have of ourselves as minds is the intuitive cognition of our acts of thinking and willing, and the subject of these acts is not apprehended directly as a substance or form. Nor is the faculty psychology elaborated by the earlier Scholastics, with its distinctions of active and passive intellect and of really distinct powers within the soul, evident or necessary. We are aware of the soul only as that which thinks and wills; and since the person who thinks is not other than the person who wills, the terms *intellect* and *will* refer to precisely the same subject, and not to distinct entities or faculties within that subject.

FREE WILL. If it is only by intuitive cognition of our own acts that we are aware of ourselves as intelligent beings, it is only in this way that we are aware of ourselves as voluntary agents free to choose between opposite actions. Ockham defines freedom (*libertas*) as "that power whereby I can do diverse things indifferently and contingently, such that I can cause, or not cause, the same effect, when all conditions other than this power are the same" (Quod. I, q. 16). That the will is free, he says, cannot be demonstratively proved by any reason, "because every reason proving this assumes something equally unknown as is the conclusion, or less known." Yet this freedom can be evidently known by experience, he says, because "a man experiences the fact that however much his reason dictates some action, his will can will, or not will, this act" (Quod. I, q. 16).

This liberty of will, for Ockham, is the basis of human dignity and of moral goodness and responsibility, more than the power of thinking—although the two are mutually involved. The seat of morality is in the will itself, Ockham says, "because every act other than the act of will, which is in the power of the will, is only good in such manner that it can be a bad act, because it can be done for an evil end and from an evil intention" (Quod. III, q. 13). Also, every action, other than the act of willing itself, can be performed by reason of natural causes and not freely, and every such action could be caused in us by God alone instead of by our will; consequently, the action in itself is neither virtuous nor vicious, except by denomination from the act of the will. Not even Immanuel Kant was more concerned to distinguish morality from legality, or the good will from the right action. Ockham had, in Peter Abelard, a medieval precedent for this emphasis.

FREE WILL AND GOD'S FOREKNOWLEDGE. Having thus affirmed the total freedom and integrity of the human will, Ockham was faced with the problem of reconciling this with the doctrine of divine foreknowledge of future contingent events, among which the decisions of the human will must be counted. The answer, apparently considered sufficient by Aquinas, that God sees, in one eternal glance, all the decisions of each soul, now and to come, is not sufficient for Ockham. God's intellect is not distinct from his will and his omnipotent causality of all things; hence, says Ockham, "either the determination or production of the created will follows the determination [of the divine will], or it does not. If it does, then the created will acts just as naturally as any natural cause … and thus, the divine will being determined, the created will acts accordingly and does not have the power of not acting accordingly, and consequently no act of the created will is

to be imputed to it" (*Commentary on the Sentences,* d. 38, q. 1). Ockham considers the problem of how God knows, with certainty and from all eternity, the contingent and free decisions of the human will, an insoluble problem; for both the freedom of the human will and the power of God to know all contingent acts of created beings must be conceded. "It is impossible," he says, "for any [created] intellect, in this life, to explain or evidently know how God knows all future contingent events" (d. 38, q. 1).

PROBLEM OF EVIL. While recognizing the Aristotelian conception of natural good and of virtuous choices in accordance with right reason, Ockham is primarily concerned with the theological norm of moral goodness, which is the will of God expressed in the commandments of both the Old Testament and the New Testament, whereby man is obligated (but not coerced) to love and obey God above all else. Thus, what God wills man to do of man's free will defines the right, and disobedience to God's will defines sin. This provides a solution of the old problem of evil, or of God as cause of the sinful acts of man; for since moral evil is the doing of the opposite of what one is obligated to do, and since God is not obligated to any act, it is impossible for God to sin by his causal concurrence in the production of an act sinfully willed by the creature. But Ockham raises an interesting paradox in this connection by supposing that God might command a man to hate him (or to disobey him). To obey God is to love God, and to love God is to do his will; but if it is God's will that I do not do his will, I do his will if I don't, and don't do it if I do. Hence, this command is impossible for a creature to fulfill; and although there would seem to be no patent self-contradiction in supposing that God could issue such a command, it would seem to be self-contradictory, and hence impossible, for God to will that this command be fulfilled.

GOD'S FREEDOM. Although Ockham recognizes that God has established laws binding the Christian to live in a certain way as a member of the church, participant in its sacraments, and believer in its articles of faith, this fact imposes no obligation on God either to bestow eternal life on the Christian who obeys God's precepts and loves him above all else, or to withhold eternal life from those who do not follow God's laws and love him above all else. "It is not impossible," Ockham says, "that God could ordain that a person who lives according to right reason, and does not believe anything except what is conclusive to him by natural reason, should be worthy of eternal life" (*Commentary on the Sentences* III, q. 8). Similarly, although according to the established order an infused

grace is required for a man to be eligible for acceptance by God, Ockham insists that God is not necessitated, by reason of such a created grace given to a man, to confer eternal life on him—"always contingently and freely and mercifully and of his own graciousness he beatifies whomsoever he chooses … purely from his kindness he will freely give eternal life to whomsoever he will give it" (*Commentary on the Sentences* I, d. 17, q. 1).

What is distinctive of Ockham's theological point of view is its emphasis on the freedom and spontaneous liberality of God and on the "givenness" of the world that God creates. This stands in sharp contrast to the Muslim characterization of God as the necessary being whose act is equally necessary and therefore determinant of necessity in all that occurs in the created world. Ockham's doctrine of divine omnipotence is not to be understood, as some have done, on the analogy of an oriental potentate issuing arbitrary commands as a pure display of power; rather, it is grounded in the conception of a goodness that is purely spontaneous and unnecessitated, whose gift of existence to creatures and of freedom of choice to man is a perfectly free gift with no strings attached. Ockham's theology of divine liberty and liberality is the complement of his philosophy of radical contingency in the world of existing finite beings and of the underivability of matters of fact from any a priori necessity.

CHURCH AND STATE. Ockham's political and polemical writings on the issue of papal power eloquently convey the thesis that the law of God is the law of liberty and not one of oppression or coercion. The treatise *De Imperatorum et Pontificum Potestate* (On the Power of Emperors and Popes), dealing with the papal claim to plenitude of power, makes this very clear. Christ, in instituting the church, did not give Peter a plenitude of power that would give him the right to do everything not explicitly forbidden by divine or natural law; rather, Peter was given a limited and defined sphere of authority and power. Therefore, Ockham argues, the pope has no authority to deprive any human being of his natural rights or of the rights and liberties given to man by God. "As Christ did not come into the world in order to take away from men their goods and rights, so Christ's vicar, who is inferior and in no way equal to him in power, has no authority or power to deprive others of their goods and rights" (*De Imperatorum …,* p. 10, ll. 12–15). Ockham specifies three of these inalienable rights: first, all those rights that non-Christians justly and admittedly enjoyed before the coming of Christ—for any of these rights to be taken from Christians by papal authority would be to make the liberty of Christians less than that of pagans and infidels;

second, the disposition of temporal things belongs not to the papal authority but to the laity, according to the words of Christ that the things that are Caesar's should be rendered unto Caesar; third, although the pope is charged with the teaching of God's word, maintenance of divine worship, and provision of such things as are necessary for the Christian in his quest for eternal life, the pope has no power to command or requisition those things that are not necessary to this end, "lest he should turn the law of the Gospels into a law of slavery."

On the important question of who is to be the judge of what is necessary for the legitimate ends of the church, Ockham holds that this cannot be the prerogative of the pope, of those under his command, or of the civil rulers. The ultimate decision should be sought in the Gospel, interpreted not by the clergy alone but by "the discretion and counsel of the wisest men sincerely zealous for justice without respect to persons, if such can be found—whether they be poor or rich, subjects or rulers" (*De Imperatorum…*, p. 27, ll. 17–20). This not very practical proposal nevertheless suggests that the membership of the Christian community as private individuals, rather than as officeholders, constitutes the true church. Yet Ockham is not, like Marsilius of Padua, against the principle of the pope as head of the church and vicar of Christ; he only seeks safeguards against abuse of the papal office and illegitimate assumption of tyrannical powers by holders of that office. Legitimate sovereignty, whether papal or civil, is not despotism; the dominion a master has over a slave is not the kind of authority exercised legitimately by a king, pope, or bishop. A pope may turn out to be a heretic and may be deposed—not by the emperor but only by a general council of the church. The imperial power derives from God, not directly but by way of the people who confer upon the emperor his power to legislate; the imperial power is not, as the popes had claimed, derived from the papacy. Ockham's political theory, insofar as it was formulated at all in his polemical writings, was not secularist or anticlerical; it was against absolutism in either church or state and much concerned that the "law of force," which is characteristic of the civil state, should not be adopted by the papal authority, lest the law of God, which is a law of liberty, be corrupted and degraded by temporal ambitions and lust for power.

See also Abelard, Peter; Anselm, St.; Aristotle; Avicenna; Bonaventure, St.; Degrees of Perfection, Argument for the Existence of God; Descartes, René; Determinism, A Historical Survey; Duns Scotus, John; Empiricism; Evil, The Problem of; Hume, David; Induction; Intentionality; Leibniz, Gottfried Wilhelm; Logic, History of; Mar-

silius of Padua; Medieval Philosophy; Neoplatonism; Ockhamism; Ontological Argument for the Existence of God; Peter Aureol; Peter Lombard; Peter of Spain; Realism; Semantics, History of; Socrates; Thomas Aquinas, St.; Universals, A Historical Survey; William of Sherwood.

Bibliography

WORKS BY OCKHAM

The critical editions of Ockham's works are in three series:

Opera Theologica (*Op. Theol.*). 10 vols., edited by Gedeon Gál et al. St. Bonaventure, NY: Franciscan Institute Publications, 1967–1986.

Opera Philosophica (*Op. Phil.*). 7 vols., edited by Gedeon Gál et al. St. Bonaventure, NY: Franciscan Institute Publications, 1974–1988.

Opera Politica (*Op. Pol.*). 4 vols., edited by H. S. Offler. Vol. I–III. Manchester, U.K.: Manchester University Press; Vol. IV, Oxford: Oxford University Press, 1940–1997 (incomplete).

The main works are:

Scriptum in Librum Primum Sententiarum (*Ordinatio*), edited by Gedeon Gál, Stephen Brown, Jerry I. Etzkorn, and Francis E. Kelley. *Op. Theol* I–IV, 1967–1979.

Quaestiones in Libros Secundum, Tertium et Quartum Sententiarum (*Reportatio*), edited by Gedeon Gál, Rega Wood, Jerry I. Etzkorn, Francis E. Kelley, and Romuald Green. *Op. Theol.* V–VII, 1981–1984.

Quodlibeta Septem, edited by Joseph C. Wey. *Op. Theol.* IX, 1980. English translation by Alfred J. Freddoso and Francis E. Kelley, *Quodlibetal Questions.* 2 vols. New Haven, CT: Yale University Press, 1991.

Summa Logicae, edited by Philotheus Boehner, Gedeon Gál, and Stephen Brown. *Op. Phil.* I, 1974. English translation of Part I by Michael J. Loux, *Ockham's Theory of Terms.* Notre Dame, IN: University of Notre Dame Press, 1974. English translation of Part II by Alfred J. Freddoso and Henry Schuurman, *Ockham's Theory of Propositions,* Notre Dame, IN: University of Notre Dame Press, 1980.

Expositio in Librum Porphyrii De Praedicabilibus, edited by Ernest A. Moody. In *Op. Phil.* II, 1978: 8–131. English translation by Eike-Henner W. Kluge, " William of Ockham's Commentary on Porphyry. " *Franciscan Studies* 33 (1973): 171–254, and 34 (1974): 306–382.

Tractatus de Praedestinatione et de Praescientia Dei Respectu Futurorum Contingentium, edited by Philotheus Boehner and Stephen Brown. In *Op. Phil.* II, 1978: 505–539. English translation by Marilyn McCord Adams and Norman Kretzmann, *Predestination, God's Foreknowledge and Future Contingents.* New York: Appleton-Century-Crofts; 2nd ed., 1983.

Expositio in Libros Physicorum Aristotelis, edited by Vladimir Richter et al. *Op. Phil.* IV–V, 1985.

Brevis Summa Libri Physicorum, edited by Stephen Brown. In *Op. Phil.* VI, 1984: 1–134. English translation by Julian Davies, *Ockham on Aristotle's Physics.* St. Bonaventure, NY: Franciscan Institute, 1989.

Opus Nonaginta Dierum, edited by H. S. Offler and J. G. Sikes, in *Op. Pol.* I, 2nd ed., 1974: 287–368, and *Op. Pol.* II, 1963: 375–858. English translation by John Kilcullen and John Scott, *The Work of Ninety Days.* CD-ROM, Bowling Green, OH: Philosophy Documentation Center.

Breviloquium de Principatu Tyrannico, edited by H. S. Offler, in *Op. Pol.* IV, 1997: 79–277. English translation by John Kilcullen, *A Short Discourse on Tyrannical Government.* Cambridge, U.K.: Cambridge University Press, 1992.

Dialogus, edited by and English translation by John Kilcullen et al. in progress on the web. Available from http://www.britac.ca.uk/pubs/dialogus/ockdial.html.

A Letter to the Friars Minor and Other Writings. English translation by John Kilcullen of selected political writings from Ockham. Cambridge, U.K.: Cambridge University Press, 1995.

On the Power of Emperors ad Popes (*De Imperatorum et Pontificum Potestate*), edited by and English translation by Annabel S. Brett. Bristol, U.K.: Thoemmes Press for the University of Durham, 1998.

WORKS ON OCKHAM

Abbagnano, Nicola. *Guglielmo di Ockham.* Lanciano, Italy: Carabba, 1931.

Adams, Marilyn McCord. *William Ockham.* 2 vols. Notre Dame, IN: University of Notre Dame Press, 1987.

Baudry, L. *Guillaume d'Occam.* Vol. I: *L'homme et les oeuvres.* Paris, 1950. Contains extensive bibliography of works on Ockham; full information on Ockham's published and unpublished works will be found on pp. 273–294.

Baudry, L. *Lexique philosophique de Guillaume d'Ockham.* Paris, 1958.

Baudry, L. *Le Tractatus de Principiis Theologiae attribué à G. d'Occam.* Paris, 1936.

Beckmann, Jan P. *Ockham-Bibliographie 1900–1990.* Hamburg: Felix Meiner, 1992.

Biard, Joël. *Guillaume d'Ockham. Logique et philosophie.* Paris: P.U.F., 1997.

Biard, Joël. *Logique et théorie du signe au XIVe siècle.* Paris: Vrin, 1989.

Boehner, Philotheus. *Collected Articles on Ockham.* St. Bonaventure, NY, 1956.

Courtenay, William J. *Schools and Scholars in Fourteenth-Century England.* Princeton, NJ: Princeton University Press, 1987.

Federhofer, Franz. *Die Erkenntnislehre des Wilhelm von Ockham.* Munich, 1924.

Freppert, Lucan. *The Basis of Morality according to William Ockham.* Chicago: Franciscan Herald Press, 1988.

Goddu, André. *The Physics of William of Ockham.* Leiden: Brill, 1984.

Gottfried, Martin. *Wilhelm von Ockham.* Berlin: de Gruyter, 1949.

Guelluy, Robert. *Philosophie et théologie chez Guillaume d'Ockham.* Louvain and Paris, 1947.

Hochstetter, Erich. *Studien zur Metaphysik und Erkenntnislehre Wilhelms von Ockham.* Berlin, 1927.

Holopainen, Taina M. *William of Ockham's Theory of the Foundations of Ethics.* Helsinki: Luther-Agricola Society, 1991.

Lagarde, Georges de. *La naissance de l'esprit laïque au déclin du moyen âge,* Vols. IV–VI. Paris, 1942–1946.

Leff, Gordon. *William of Ockham. The Metamorphosis of Scholastic Discourse.* Manchester, U.K.: Manchester University Press, 1975.

Maurer, Armand. *The Philosophy of William of Ockham in the Light of Its Principles.* Toronto: Pontifical Institute of Mediaeval Studies, 1999.

McGrade, Arthur Stephen. *The Political Thought of William of Ockham.* Cambridge, U.K.: Cambridge University Press, 1974.

Michon, Cyrille. *Nominalisme. La théorie de la signification d'Occam.* Paris: Vrin, 1994.

Moody, E. A. *The Logic of William of Ockham.* New York and London: Sheed and Ward, 1935.

Moody, E. A. *Truth and Consequence in Medieval Logic.* Amsterdam, 1953.

Moser, Simon. *Grundbegriffe der Naturphilosophie bei Wilhelm von Ockham.* Innsbruck, 1932.

Panaccio, Claude. *Le discours intérieur. De Platon à Guillaume d'Ockham.* Paris: Éd. du Seuil, 1999.

Panaccio, Claude. *Les mots, les concepts et les choses. La sémantique de Guillaume d'Occam et le nominalisme d'aujourd'hui.* Montréal: Bellarmin, and Paris: Vrin, 1992.

Panaccio, Claude. *Ockham on Concepts.* Aldershot, U.K.: Ashgate, 2004.

Scholz, Richard. *Wilhelm von Ockham als politischer Denker und sein Breviloquium de Principatu Tyrannico.* Leipzig: Hiersemann, 1944.

Shapiro, Herman. *Motion, Time and Place according to William Ockham.* St. Bonaventure, NY, 1957.

Spade, Paul Vincent, ed. *The Cambridge Companion to Ockham.* Cambridge, U.K.: Cambridge University Press, 1999.

Spade, Paul Vincent. *Lies, Language and Logic in the Late Middle Ages.* London: Variorum Reprints, 1988.

Spade, Paul Vincent. *Thoughts, Words and Things. An Introduction to Late Mediaeval Logic and Semantic Theory.* Available from http://www.pvspade.com/Logic/index.html, 1996.

Tachau, Katherine H. *Vision and Certitude in the Age of Ockham.* Leiden: Brill, 1988.

Vasoli, Cesare. *Guglielmo d'Occam.* Florence, 1953. Contains an extensive bibliography of works on Ockham.

Vignaux, Paul. *Justification et prédestination au XIVe siècle.* Paris: Leroux, 1934.

Vignaux, Paul. "Nominalisme" and "Occam." In *Dictionnaire de théologie catholique.* 15 vols. Paris, 1903–1950. Vol. XI, cols. 733–789 and 864–904.

Vignaux, Paul. *Le nominalisme au XIVe siècle.* Montreal, 1948.

Webering, Damascene. *The Theory of Demonstration according to William Ockham.* St. Bonaventure, NY: Franciscan Institute, 1953.

Wolter, Allan B. et al. *William of Ockham (1285–1347). Commemorative Issue.* 3 vols. *Franciscan Studies* 44–46 (1984–1986).

Wood, Rega. *Ockham on the Virtues.* West Lafayette, IN: Purdue University Press, 1997.

Zuidema, Sytse. *De Philosophie van Occam in Zijn Commentaar op de Sententien,* 2 vols. Hilversum, Netherlands, 1936.

Ernest A. Moody (1967)
Bibliography updated by Claude Panaccio (2005)