

# Catholicism and Evolution: Polygenism and Original Sin

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**Abstract.** Theological attention to the Catholic doctrine of original sin has a history that extends from the letters of Saint Paul through the Council of Trent and Pius XII's 1950 encyclical, *Humani generis*. The doctrine has traditionally been articulated through the Genesis narrative of Adam and Eve as the first human beings from whom all others descend, an account known as monogenism. In the course of the nineteenth century, scientific research into human origins increasingly invoked polygenism, the descent of humanity from non-human ancestors through a transitional population. Subsequent Catholic engagement with evolution included resistance to polygenism from the Vatican due to a perceived conflict with the doctrine of original sin. *Humani generis* included a prohibition that remains in place today in spite of widespread *de facto* acceptance of polygenism among theologians. Understanding the origin and persistence of this disparity stands to benefit from comparison to a corresponding ambivalence toward the sixteenth century Copernican hypothesis of a moving earth, only conclusively resolved in 1992. In Part I of this essay I introduce this historical comparison and describe the origins of monogenism and polygenism terminology in nineteenth century debate over the unity of the human race. I then describe the conceptual changes that transpired during the first half of the twentieth century and the resulting role of polygenism in the *nouvelle théologie* of the decade prior to *Humani generis*. Subsequent developments and implications follow in Part II.

**Keywords:** human origins; monogenism; nouvelle théologie; Teilhard de Chardin.

## Introduction

Some of the most theologically and culturally influential passages in Genesis describe an act of disobedience by Adam and Eve now commonly referred to as original sin. Saint Paul left a lasting legacy for theology by presenting a symmetry between the impact of one man's sin and the redemptive power of the one Christ:

For if, by the transgression of one person, death came to reign through that one, how much more will those who receive the abundance of grace and of the gift of justification come to reign in life through the one person Jesus Christ. In conclusion, just as through one transgression condemnation came upon all, so through one righteous act acquittal and life came to all (Romans 5:17–18).

This attribution of responsibility for sin and its consequences to a single individual became central to subsequent theological exposition. Most influentially, in response to the theological turmoil of the Reformation, the Council of Trent (1545–1563) issued a decree on original sin that included responses to a set of doctrines, collectively labelled Pelagian, which, in their most extreme form, denied hereditary sin altogether (Endres 2012). Canon One from Trent Session Five included an oft quoted passage.

If any one does not confess that the first man, Adam, when he had transgressed the commandment of God in Paradise, immediately lost the holiness and justice wherein he had been constituted; and that he incurred, through the offence of that prevarication, the wrath and indignation of God, and consequently death, with which God had previously threatened him ...let him be anathema (Council of Trent 1546).

The decree further asserted that “this sin of Adam, –which in its origin is one (*origine unum*), and being transfused into all by propagation (*propagatione*), not by imitation (*imitatione*), is in each one as his own.” Additional theological reflection is needed to determine whether these references to Adam as “the first man” might be implicit or co-defined by the doctrine at stake or are simply a non-doctrinal mode of expression. Until the mid-twentieth

century, the preferred interpretation was that this phrase, used together with the terminology *propagatione* and *origine unum*, implies a unique sinful act with effects that are transmitted to all humanity through direct physical descent from Adam, the first human.

Scrutiny of this traditional reading intensified following the application of evolutionary biology to human origins. During the first half of the twentieth century, the evolution of the human body from non-human ancestors became increasingly acceptable to Catholics as long as the divine introduction of individual human souls was acknowledged. However, in a famous passage in the 1950 encyclical *Humani generis*, Pope Pius XII warned that, although the bodily evolution of humanity was a viable scientific topic in general, some specific evolutionary theories do conflict with the doctrine of original sin.

Christians cannot lend their support to a theory which involves the existence, after Adam's time, of some earthly race of men, truly so called, who were not descended ultimately from him, or else supposes that Adam was the name given to some group of our primordial ancestors. It does not appear how such a view can be reconciled with the doctrine of original sin, as this is guaranteed to us by Scripture and tradition, and proposed to us by the Church (Knox 1950, 190).

The ideas Pius castigated are commonly referred to collectively as polygenism and stand in contrast to monogenism, the attribution of human origins to a single pair of individuals. Given the longstanding reluctance by the Vatican to issue official pronouncements on scientific topics, it is natural to wonder why Pius singled out polygenism for special attention. His warning certainly did not settle the issue. Discussion increased during the 1950s, Vatican II, and through the 1960s. As late as 2003, when Kevin McMahan wrote "Monogenism and Polygenism" for *The New Catholic Encyclopedia*, he presented the topic as still unresolved.

The present situation amounts to a quandary for theologians. On the one hand, even though it has not been formally addressed by the magisterium since *Humani generis*, monogenism continues to be accepted as a basic premise in Church

teaching, as is shown by the relevant sections of the *The Catechism of the Catholic Church* (nn. 374–379, 390, 399–407). On the other hand, to deny the polygenistic origin of the human species places the theologian in clear opposition with science, and conjures up the image of an obscurantist faith combating the truth of reason. And yet it may very well prove to be that science, in its forthright drive for empirical knowledge, has only forced theology to deeper reflection on its own central claim that Christ lies at the heart of all (McMahon 2003).

The goal of the present paper is to clarify how this longstanding “quandary” took root and became established. In the tradition of drawing comparisons between Catholic responses to evolution and heliocentrism, it is tempting to construct an analogy using Galileo and Pierre Teilhard de Chardin as protagonists. Although that exercise might be informative, it ultimately loses traction because for polygenism there is no iconic public event of comparable notoriety when measured against the trial of Galileo. Instead of placing a focus on a representative individual, the present paper has a broader conceptual basis.

In Part I, after using as a starting point the seventeenth century Catholic hierarchy’s defense of geostatic astronomy, I document the analogous history of monogenism up to 1950. In both cases, with very little public direction from the Vatican, scientifically informed theologians encouraged a gradual transition away from earlier orthodox expectations. In 1661, in concession to some of the arguments of Copernicus, Galileo and Kepler, the Jesuit Giovanni Battista Riccioli granted that the sun was the center of some planetary orbits but he still rejected terrestrial motion and proposed that the sun orbited the stationary earth. Similarly, as the century after Darwin progressed, the descent with modification of “systematic species” was accepted by most Catholic theologians as a long process spanning many millions of years of earth history. However, in addition to the requirement of divine intervention for the introduction of each human soul, what was consistently rejected was polygenism, the idea that humanity originated through a transitional population rather than from two individuals. And, just as preference for Riccioli’s geostatic model gave way to an acceptance

of a moving earth, monogenism gradually was *de facto* supplanted by polygenism. From the extensive sources available, I concentrate on the French literature where discussion of evolutionary topics pertaining to original sin was embedded within the *nouvelle théologie* that immediately preceded the publication of *Humani generis*.

In Part II, the discussion continues through the publication of *Humani generis*, Vatican II and the 1960s, when many theologians developed conceptualizations of original sin independent of monogenism. Acceptance of biological polygenism became widespread, even if not condoned by any official Vatican pronouncement. In other cases, monogenism and polygenism were reconceptualized using a spiritual rather than a biological criterion. Reflection on the Vatican's long period of ambivalence with respect to the motion of earth suggests that a similar prospect can be foreseen for polygenism even as the concept at stake continues to evolve.

## 1. Catholicism and Geostasis

As would later be the case for polygenism, Copernicus's hypothesis that the earth moves in a heliocentric orbit generated widespread theological concern over apparent conflict with scriptural passages. One of the most frequently cited sources for biblically based arguments that the earth is stationary was Joshua 10:12–13, in which Joshua successfully prays for extended daylight during a military battle.

On this day, when the LORD delivered up the Amorites to the Israelites, Joshua prayed to the LORD, and said in the presence of Israel: Stand still, O sun, at Gibeon, O moon, in the valley of Aijalon! And the sun stood still, and the moon stayed, while the nation took vengeance on its foes.

In the sixteenth century, the most straightforward reading of this text included the idea that the earth is immobile and it is the motion of the sun that either stops or continues. Contentious Reformation arguments over the proper assignment of authority for biblical interpretation were fully engaged

when Copernicus published in 1543. Although astronomy was not explicitly discussed at the Council of Trent, theological concern motivated Catholic preference for Tycho Brahe's 1588 geostatic model in which all the planets have solar orbits while the sun orbits a stationary earth. Tycho's model did not conflict with scripture and could also accommodate high profile empirical phenomena, such as Copernicus' discovery of the correlation of planetary distances with periods of rotation around the sun and Galileo's later observations of a full range of phases for Venus. It also avoided the most glaring scientific problem for the Copernican model, the failure to observe any stellar parallax due to the earth's alleged annual orbit of the sun. In 1616, under the authority of Pope Paul V, two propositions taken from Copernican astronomy were submitted to consultants of the Congregation of the Holy Office for judgment on their theological legitimacy.

- I. The sun is the center of the world and completely immovable by local motion.
- II. The earth is not the center of the world, nor immovable, but moves according to the whole of itself, and also with diurnal motion (Langford 1966, 89).

The consultants found the first proposition to be "formally heretical" (directly contrary to a doctrine of faith based in scripture), while the second was declared "erroneous in the faith" (a conclusion contrary to scripture because it is inferred from the formally heretical claim that the sun is stationary). The Congregation's 1616 decree conflated these two assessments and rendered judgement on the compound idea that the sun is immobile and the earth moves. It was not declared heretical but was deemed "false and contrary to Holy Scripture" (Langford 1966, 98–99; Finocchiaro 2005, 18). Copernicus' book was also "suspended until corrected"; his model could be discussed and taught as a mathematical hypothesis for computational purposes, but it could not be defended as a thesis of physical truth.

Jesuits such as Orazio Grassi encouraged further research in Tyconic astronomy based upon observations that comets were accompanied by no observable parallax and must be celestial rather than atmospheric phenomena (Gal and Chen-Morris 2013, 91–101). Giovanni Battista Riccioli presented

the most famous of these geostatic models in his 1651 *Almagestum novum astronomiam veterem et novem complectens*. Riccioli compiled and evaluated forty-nine arguments in favor of a moving earth and seventy-seven counterarguments for a geostatic model; he concluded that neither set of arguments was absolutely compelling and he advised acceptance of a stationary earth in accordance with the consensus of scriptural interpretation. Riccioli only revised Brahe's model slightly by having Jupiter and Saturn orbit the earth rather than the sun. 1651 was also the year in which Francesco Piccolomini issued the *Ordinatio pro studiis superioribus* during his brief tenure as Jesuit superior general. The *Ordinatio* included a list of philosophical and theological theses that could not be taught in Jesuit schools (Hellyer 2005, 38–46). Points thirty-five and thirty-six prohibited instruction that the firmament is stationary and the earth is in motion.<sup>1</sup> Although Riccioli's 1651 text would have been completed prior to any exposure he might have had to this *Ordinatio*, he became more adamantly opposed to the Copernican model thereafter. Historian Alfredo Dinis has argued that Riccioli was not a “secret Copernican” and was sincere in his conclusion that because the issue could not be objectively resolved purely on the basis of empirical evidence, the model in conformity with traditional Biblical interpretation was to be preferred (Dinis 2002). Meanwhile, Galileo's failure to conform to the 1616 directive of the Holy Office had resulted in his 1632 trial where he was found guilty of vehement suspicion of heresy on two counts: believing in the earth's heliocentric mobility, the doctrine judged in 1616 to be false and contrary to scripture, and secondly, believing that such a doctrine could be held and defended as probable (Langford 1966, 152; Finocchiaro 2005, 11–14). Vehement suspicion of heresy was a serious offense, ranking below only formal heresy and strong suspicion of heresy in severity. That Galileo was found guilty of a mode of heresy for holding a doctrine that was not itself ever declared heretical, but only contrary to scripture, would be one of the complicating factors in the historical legacy of the case.

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<sup>1</sup> The full Latin text of the *Ordinatio* is provided in Bargiel 2006, 263–267.

Catholic disengagement from geostasis was a slow and convoluted process. It was not until 1757 that the Congregation of the Index dropped its longstanding prohibition of “all books teaching the earth’s motion and the sun’s immobility” (Finocchiaro 2005, 138–139). Books by Copernicus, Galileo, and Kepler remained on the *Index of Prohibited Books* until they were quietly removed for the 1835 edition. Finally, in 1981 Pope John Paul II authorized a committee of scholars from the Pontifical Academy of Sciences to investigate the Galileo affair anew. Cardinal Paul Poupard presented his summary of the results in a 1992 speech.

It is in that historical and cultural framework, far removed from our own times, that Galileo’s judges, incapable of dissociating faith from an age-old cosmology, believed, quite wrongly, that the adoption of the Copernican revolution, in fact not yet definitively proven, was such as to undermine Catholic tradition, and that it was their duty to forbid its being taught (Poupard 2003, 348).

The sporadic and drawn-out nature of the acceptance of the earth’s mobility should be kept in mind as we turn to the history of polygenism. That the earth moves in a solar orbit obviously became the *de facto* understanding of Catholic scientists and theologians long before 1992. Riccioli’s model played a temporary role in this transition. He acknowledged that the earth is not the center of all planetary motion but he also believed it to be stationary due to his understanding of scripture. Similarly, many aspects of evolutionary science, including the evolution of the human body, have become theologically viable as long as monogenism is retained. But for most modern theologians polygenism has lost its theologically threatening status and has been relegated to the scientific domain along with the motion of the earth. As the following survey will document, monogenism has had a historical trajectory analogous to geostasis but with a future still to be determined.

## 2. Nineteenth Century Racial Polygenism

In what would become a longstanding terminological problem, the general nineteenth century import of “polygenism” was that there were multiple

very ancient origins for distinct human races that some adherents believed to be separate species. Monogenism was the contrary view that racial distinctions are insignificant compared to the unity humanity owes to its singular origin. Both labels included multiple versions, some with religious motivation and others purely secular. Racial polygenism flourished in the United States, London, and Edinburgh before being extensively taken up by French authors. Historians Adrian Desmond and James Moore have located the terms monogenism and polygenism used in this racial sense by George Gliddon as early as 1857 (Desmond and Moore 2009, 287–289). Prior to Gliddon’s explicit use of this terminology, American slave owners had already relied upon a variety of polygenetic concepts as justification for slavery. In response, James Cowles Prichard used a biblical argument for the unity of humanity due to descent from a single ancestor. This reliance upon Genesis allowed racists such as Josiah Nott to claim the mantle of science and belittle monogenists as religiously biased and culturally backward. In his 1830 *Thoughts on the Original Unity of the Human Race*, Charles Caldwell claimed that Caucasians, Mongolians, Africans, and American Indians were created as separate populations and were easily recognized as distinct species (Desmond and Moore 2009, 152–154). He worried that, if it was accepted that races were truly descended from a recent common ancestor, then the same conclusion might be drawn for other sets of animal or plant varieties. For Caldwell, extensive common descent thus became part of a *reduction ad absurdum* argument against monogenism. From his prestigious position at Harvard, Louis Agassiz also asserted separate creation of races and incorporated racial polygenism into his biogeographical hypothesis of multiple zones of creation for disjoint sets of plants and animals (Agassiz 1850). One obvious problem for all racial polygenists was that reputable experts repeatedly documented fertile cross breeding and it was difficult to discount all of these as isolated exceptions.

A prominent Catholic opponent of racial polygenism in America was Clarence Augustus Walworth, a Redemptorist priest and subsequent Paulist. Walworth rejected both polygenism and evolution but, of the two ideas, he considered polygenism to be the greater threat to Catholic doctrine. This

judgment was not unusual; as historian William Astore comments, for American Catholics during the 1845–1859 period, “Polygenism – not geology or evolutionary theories – emerged as the most significant issue” (Astore 1996, 41). Walworth felt evolution could be rejected on scientific grounds and he argued for a compatibility of geology with a metaphorical or spiritual reading of Genesis and a localized Noachian flood. Racial polygenism was not so readily dismissed; here his objection was theologically motivated since he did not consider polygenism compatible with a traditional interpretation of Adam and Eve. Walworth proposed sudden saltations guided by providence as a cause for distinct races within the one human species descended from the initial couple (Walworth 1863, 332–366).

Support for racial polygenism waned in the United States after the Civil War but it continued to find a scientific voice in Europe. Karl Vogt asserted that human races took their origins from separate ancestral species and evolved in parallel to the point where they were capable of some interbreeding (Bowler 1986, 132). As did most racial polygenists, he relied upon an extreme degree of convergent evolution to make interbreeding possible. Ernst Haeckel was also a polygenist with respect to human origins due to his belief that races emerged through independent achievements of language in isolated populations; he certainly did not think that divine intervention played any role (Richards 2008, 259–260). Haeckel serves as a transitional figure in the present discussion because he introduced much of the relevant terminology employed during the twentieth century. In particular, by 1866 he was using the word “phylon”, in the sense of “stem”, as a root for terms such as monophyletic (*monophyletischer*) and polyphyletic (*polyphyletischer*) (Richards 2008, 138–139). He incorporated this vocabulary into his contrast between two general scenarios for the evolutionary history of life (Haeckel 1876, 2: 45).

The unitary, or *monophyletic*, hypothesis of descent will endeavor to trace the first origin of all individual groups of organisms, as well as their totality, to a single common species of Moneron which originated by spontaneous generation. The multiple, or *polyphyletic*, hypothesis of descent, on the other hand, will assume that several different species of Monera have arisen by spontaneous generation, and that these gave rise to several different main classes (tribes, or phyla).

Although he was a polygenist with respect to human races, Haeckel tentatively preferred the monophyletic hypothesis for the full history of life since its first inception; he did leave open the possibility of polyphyletism involving multiple independent cases of spontaneous generation (Dayrat 2003). This monophyletic and polyphyletic terminology would be incorporated into Catholic literature with divine intervention replacing Haeckel's use of spontaneous generation.

American, British, and German arguments all contributed to the context in which racial monogenism and polygenism were debated in France (Blanckaert 1996). Among French anthropologists, Paul Broca and Georges Pouchet espoused racial polygenism during the 1860s. Broca was especially influential through his establishment of the Société d'anthropologie de Paris in 1859, the journal *Revue d'anthropologie* in 1872, and the Ecole d'anthropologie de Paris in 1875. His vigorously anti-religious and anti-clerical tone contributed to a widely perceived antagonism between materialistic anthropology and Catholicism. Pouchet adopted the American terms monogenism and polygenism with the latter defined as recognizing "no direct relationship among the races of mankind" (Pouchet 1864, 3). Distancing himself from any reliance upon scriptural authority, Pouchet accepted the fertile interbreeding of human races but discounted it as a secondary phenomenon. Neither Broca nor Pouchet provided any theoretical basis or mechanism for the evolution of distinct races.

At the end of the nineteenth century, Jean Guibert was noteworthy for his well-informed and even-handed discussion of tenable Catholic engagement with biology and paleontology. An ordained priest of the Society of Saint Sulpice, Guibert wrote for the benefit of his students at the Séminaire d'Issy where he taught natural sciences (Guibert 1896). Jean Bouyssonie and Henri Breuil were among his students there and they would become important figures in French anthropology and paleontology. Guibert referred to Dalmace Leroy and John Zahm hesitantly, but more or less approvingly, even though he knew that objections to human evolution from the Vatican had resulted in Leroy's agreement to discontinue publication (Guibert 1900, 148, 169 and 200). Leroy had speculated that evolutionary processes alone

might produce the initial bodies which became fully human through divine infusion of souls. Guibert's more careful references to "several primitive forms" (Guibert 1900, 169) resembled Erich Wasmann's later use of "natural species," taxa tentatively thought to have been produced through divine intervention with no prior ancestry. Regarding human origins, Guibert distinguished his view from Leroy's by proposing that "science itself inclines us to believe that the Creator at the moment in which He resolved to form man fashioned him directly or at least consummated and crowned the organism He was about to vivify by the spiritual soul" (Guibert 1900, 210). Leroy preferred the hypothesis that no final intervention of this kind into the process of physical evolution was necessary. Guibert's discussion of human races concentrated on the refutation of racial polygenism and he did not discuss possible human descent from a non-human population. He cited Jean Louis Armand de Quatrefages as Agassiz's chief opponent in France and marshalled many of his arguments to find flaws in polygenist claims. Guibert concluded that "The problem of the unity of the human origin seems now made quite clear. We consider the thesis as scientifically proved, which affirms that all the human races descended from one and the same primitive couple (Guibert 1900, 251). Guibert's wording was representative of Catholic conviction that God's intervention into human origins involved the single couple described in Genesis.

At some far distant period of which science cannot determine the date, but which apparently does not exceed 18,000 or 20,000 years, the first human pair appeared on the earth, their nature formed and decided by a superior power intellectual and personal whom we call God (Guibert 1900, 377).

At the turn of the twentieth century, Guibert's racial monogenism was an accepted Catholic position. Racial polygenism was uniformly held to be in clear contradiction with the biblical account of a single locus for human origins in Adam and Eve. Although extensive evolution of plant and animal life was allowed, the manner in which God's intervention resulted in the first human beings was less settled. The human soul was necessarily held to be supernaturally introduced and could not be considered a product of

material evolution. It was also considered rash to speculate that the bodies into which human souls were initially introduced were solely the result of evolutionary processes. Conformity to these expectations was primarily maintained by communications from the Congregation of the Index, often conveyed through the superiors of religious orders (Artigas et al 2006; Paul 1979). There certainly were influential individuals within the Roman curia who took broader exception to evolution in general and it is not surprising that these issues were scrutinized anew as the twentieth century opened.

### 3. Early Twentieth Century Prelude to *Humani generis*

On June 30 of 1909, the Pontifical Biblical Commission published a decree on Genesis 1–3, a document that would cast a long shadow over the first half of the twentieth century. The decree rendered judgment on a set of *dubia*, theses to which it responded either positively or negatively with no explanatory comments. The Commission prohibited the third *dubium* that included several aspects of human origins:

In particular may the literal historical sense be called in doubt in the case of facts narrated in the same chapters which touch the foundations of the Christian religion: as are, among others, the creation of all things by God in the beginning of time; the special creation of man; the formation of the first woman from the first man; the unity of the human race (Pontifical Biblical Commission 1909).

The reference to a “special creation of man” (*peculiaris creatio hominis*) did allow for some latitude in interpretation as long as doubt was not cast upon the “literal historical sense” of the Genesis account. In thorough keeping with a conservative reading, Xavier-Marie le Bachelet wrote the article “Adam” for the *Dictionnaire de Théologie Catholique* (Le Bachelet 1909). Le Bachelet was a Jesuit professor of dogmatic theology at Ore House in Hastings where Pierre Teilhard de Chardin briefly was one of his students. Never departing in the slightest from the conviction that Adam was a single individual and the “father of the human race,” Le Bachelet also cited an extensive literature addressing the location of Adam’s death and burial at an age of 930 years,

while acknowledging that these topics are not included in Catholic doctrine. He quoted Saint Paul to illustrate the parallel between the initial perpetrator of sin and Christ the redeemer but felt no compulsion to invoke Saint Paul to justify belief in Adam as a single ancestor for all humanity.

Serving as a secular foil to le Bachelet's orthodoxy, Hermann Klaatsch became a notorious early twentieth century proponent of racial polygenism (Bowler 1986, 134–139). In 1910 he proposed that, although *Propithecantropi* might be a common ancestor of apes, Neanderthals and modern humans, the lineages leading to modern human races have been distinct for long periods of time dating back to well before each of these lineages independently became human. Negroes, Australians, Pacific islanders and Aurignacians were claimed to have diverged into separate lineages at very different times and places: "That all have a common ultimate origin cannot be questioned—but it is very remote—as remote as the separation of the apes and man. We can say very little in the present state of science about the home of the common ancestor" (Klaatsch 1923, 107). Klaatsch attributed any multi-racial similarities to independent convergent evolution and claimed that he provided an objective perspective in contrast to religiously based assumptions of racial unity.

We may not be prepared to go so far as to trace the human race to two or more different roots, but we cannot deny that the recent tendency of anthropology is not to support the idea of the unity of the race that had been suggested by religious and sentimental considerations. Modern science cannot confirm the exaggerated humanitarianism which sees brothers and sisters in all the lower races (Klaatsch, 1923, 106–107).

Klaatsch presented these ideas at a 1910 Cologne Congress where, according to his editor Adolf Heilborn, "There were jokes about his supposed 'conversion from monogenetic Saul to polygenetic Paul'," a quip which of course does not do justice to Saint Paul (Klaatsch, 1923, 27). Although Richard Wegner wrote a receptive review of Klaatsch for *Nature*, Arthur Keith was more representative in his dismissal of Klaatsch's views as rampant speculation and excessively dependent upon convergence (Keith 1910). Nevertheless,

Klaatsch's notoriety was such that for many twentieth century writers the term "polygenism" continued to be associated with the hypothesis of independent evolution of human races from a set of non-human ancestors. Although this terminology was not uniform, the contrast between racial polygenism and the "unity of the human race" monogenism asserted by the Biblical Commission was firmly established.

Early twentieth century articles and books in keeping with the Biblical Commission's 1909 decree were readily published and gave an appearance of a united voice. Catholic opposition to racial polygenism in accord with the "unity of the human race" certainly was not a point of controversy. However, on the broad topic of the "special creation of man," exploratory hypotheses considered to be rash were generally kept out of print through communications from the Congregation of the Index. There is ample archival evidence that one hypothesis that was not welcomed was the idea that the initial human population was larger than a single pair of individuals. This position also gradually became known as polygenism although ambiguous terminology that confused it with racial polygenism was rampant.

Among early twentieth century European Catholics trained in both science and theology, perhaps none was more influential in public discussions of evolution than the Jesuit entomologist Erich Wasmann (Hofmann 2020). In addition to his specialized study of myrmecophile ants and termites, Wasmann published and lectured on broader evolutionary topics shortly after the turn of the century. He argued for the extensive scope of descent with modification but also remained skeptical about extrapolation of empirically well-supported evolutionary lineages back to an origin in a single common ancestor. Instead, he proposed divine intervention for the production of "natural species" without ancestry. These natural species were subject to evolutionary change, resulting in extensive lineages of many descendent "systematic species." In the terminology introduced by Haeckel, Wasmann defended polyphyletic evolution rather than monophyletic evolution or universal common descent. In general, he considered the determination of the number and time of origin of natural species to be subject to empirical research. He emphatically took human beings to be his paradigmatic example

of a natural species and rejected the hypothesis of a common ancestor for humans and apes as not yet sufficiently supported by fossil evidence. However, Wasmann also speculated that human origins might involve the introduction of a human soul into a body of pre-human ancestry and his private notes indicate that he harbored reservations about the Biblical Commission's admonitions. In 1909 his Jesuit superior general, Xaver Wernz, warned Wasmann not to engage in any further writing or lecturing on this topic. Monophyletic evolution that included the descent of humanity from non-human ancestors had a controversial status in 1909 comparable to that of the Copernican hypothesis for Riccioli in 1651. Wasmann abided by Wernz's order throughout the two decades prior to his death in 1931. This mandated silence was unfortunate since Wasmann would have been a well informed and articulate resource as the evidence for monophyletic evolution increased and Catholic discussions shifted to the possible doctrinal acceptability of human origins from a population rather than a single pair of individuals. Wasmann's form of progressive creation by means of natural species was gradually abandoned in response to new empirical evidence and a more receptive theological climate.

This shift in emphasis was not uniform and its irregular development is quite noticeable in French theological encyclopedias and journals. For example, writing in 1911, the French Jesuit entomologist and historian Robert de Sinéty was still concerned about the scope of polyphyletic evolution. In 1906 he had defended Wasmann's measured approach against attacks by Haeckel and other German monists (de Sinéty 1906). De Sinéty now cited Wasmann as one of the "moderate transformists" whose position fell in between the two extremes of creationist "fixism" and "universal transformism" (de Sinéty 1911). Moderate transformism was polyphyletic and included the idea that natural species are divinely produced with a characteristic "organic perfection" that gives rise to differentiation along lineages of directly related systematic species. De Sinéty temporarily adopted Wasmann's distinction between natural species and systematic species although he would later drop it as insufficiently operational. He also followed Wasmann in accepting the extensive evolutionary history of systematic species and he noted Wasmann's

arguments for the gradual development of new species from varieties. For philosophical reasons, de Sinéty posed three propositions that were not acceptable extensions of well-confirmed lineages of evolutionary descent: the monist assertion of the origin of life through spontaneous generation, the monophyletic commitment to a single source for all animal and plant life, and the idea that humanity is purely the spontaneous product of evolution. De Sinéty agreed with Wasmann that, aside from human evolution, the scope of polyphyletic evolution is an empirical question and philosophers need to defer to scientific expertise. In the case of humanity, however, de Sinéty was convinced that the gap in mental capacity between animal and human is too large to attribute to descent from non-human ancestors. He also held that it was not theologically prudent to affirm that the natural evolution of the human body was complete prior to the introduction of a soul, although this opinion was not expressly forbidden; some physical transformation of the physical body prior to ensoulment should be reserved for divine intervention.

Both Wasmann and de Sinéty considered the paleontological and anatomical data to be inconclusive concerning human origins, even in light of new Cro-Magnon, Neanderthal and *Pithecanthropus* data. Among the numerous Neanderthal discoveries during this period, one of the most significant was in La Chapelle-aux-Saints where the three Bouyssonie brothers had been excavating since 1905. Jean Bouyssonie had been a student of Jean Guibert at the Séminaire d'Issy during the 1890s. Ordained to the priesthood in 1901, he became professor of natural sciences at the Brive seminary in 1905. His brother Amédée was also a priest and a theology instructor at Petit Séminaire, Lacabane. In 1908, together with their younger brother Paul, the Bouyssonies discovered a complete Neanderthal skeleton that had been deliberately buried in a low-ceilinged cave (Bouyssonie, Bouyssonie and Bardon 1908). In addition to anatomical arguments and tool evidence, the circumstances of the burial initially convinced the Bouyssonies that, instead of being a distinct species of Homo, Neanderthals were a human race with religious beliefs. Amédée was particularly assertive on this point, arguing that Adam and Eve were the ancestors of several human races: Neanderthals,

Cro-Magnons, and modern humans. He speculated that each of these races descended from a sub-population of early humans, descendants of Adam with a distinct set of characteristics (A. Bouyssonie 1911). Although Amédée maintained this hypothesis at least through 1913, he would abandon it in 1925 when he and Jean published a reassessment and concluded that Neanderthals were not human (Bouyssonie and Bouyssonie 1925).

In 1912 the Bouyssonie brothers also contributed to a lengthy entry on “Homme” for the second volume of the *Dictionnaire apologétique de la foi Catholique* (d’Alès et al 1912). The discussion was divided into four separate essays. Adhémar d’Alès, the director of the *Dictionnaire*, wrote a section on Genesis, Henri Breuil joined the Bouyssonies to cover relevant developments in paleontology, Jean Guibert addressed the unity of the human race, and Pierre Teilhard de Chardin concluded with theological and philosophical issues. Teilhard’s essay is most relevant to the topic of polygenism, with the preceding sections providing theological and scientific context.

Adhémar d’Alès, a Jesuit professor of theology at the Institut catholique in Paris, noted that the Genesis account gives no support to an evolutionary origin of humanity; the most direct reading would be that God directly created humanity without animal ancestry. Since no vestige of humanity’s supernatural creation and subsequent fall is available for scientific analysis, revelation serves as a secure basis for the believing Catholic. The strictly scientific account of pre-history by Henri Breuil and the two Bouyssonie brothers was primarily a survey of European fossils and artifacts. Breuil was an anthropologist specializing in cave art who would become a colleague of Teilhard beginning in Paris during the 1920s. He was a close companion of Jean Bouyssonie and had been his classmate in courses taught by Jean Guibert at the Séminaire d’Issy during the 1890s. Breuil and the Bouyssonies discussed *Pithecanthropus*, Neanderthal and Cro-Magnon material as well as scientific hypotheses for how they might be related to modern humans, possibly through a common ancestor. They also made a point of rejecting racial polygenism, as did Jean Guibert in his section on human unity. Guibert used the term “polygenist” or one of its variants only once, retaining a nineteenth century sense of the term as an assertion of several

distinct human species (Guibert 1912, col. 495). He painstakingly argued that there is no trait that can accurately delineate human races and that “there is no serious reason to suppose that the multiple races, whether historical or pre-historical, do not descend from a single initial couple” (Guibert 1912, col. 494).

Pierre Teilhard de Chardin’s contribution to the “Homme” article marked the beginning of his life-long investigation of the science and faith interface. Unlike many of the more specialized Catholic theologians, he had direct scientific experience as a paleontologist from very early in his career. Between 1905 and 1908 he was an avid fossil collector while teaching physics and chemistry at a Jesuit high school in Cairo. In October of 1908 he began his concentrated study of theology at the Jesuit house at Hastings in Sussex, England, where he had instruction in dogmatic theology from Xavier-Marie le Bachelet. Ironically, it was there that his interest in evolution was accelerated by reading Henri Bergson’s 1907 *L’évolution créatrice*, a volume made popular in England due to a 1911 translation as *Creative Evolution* (King 2013). At some point during this period, probably during 1908, Teilhard composed his section of the “Homme” article for the *Dictionnaire apologétique* (Teilhard de Chardin 1912). The essay reflects an early stage in his development and it conformed to a thoroughly acceptable Catholic position with respect to human evolution and monogenism. After summarizing the traditional Catholic doctrine of human nature as a composite of body and soul, and acknowledging that Genesis is written in a difficult genre to identify, Chardin stipulated two undeniable propositions (Teilhard de Chardin 1912, col. 505):

- a) God has directly created the soul of the first man and probably thoroughly redesigned the material destined to form his body.
- b) The human race descends entirely from a single couple (monogenism, which alone is compatible with the doctrine of original sin).

Even at this early date, Teilhard consistently used the term “monogenism” to refer to human descent from a single couple rather than in a nineteenth century sense of a single human lineage prior to racial diversification. Teil-

hard commented that although there is no scientific problem in extending evolution to include humans, scripture does impose the constraints of monogenism and a discontinuity between humans and animals. Nevertheless, he was optimistic about the improbability of a conflict between science and doctrine. The difficulty in determining the exact scientific import of scripture, when combined with the lack of precision in paleontology and ancient anthropology, portends that scientific investigation confronts dogma with “nothing to fear or to hope” (Teilhard de Chardin 1912, col. 513). These expressions of a conventional mindset are not surprising considering Teilhard’s fledgling status within the Jesuits in 1909. At this point he did not suggest any hypothetical revisions to the doctrine of original sin if monogenism were to be acknowledged as scientifically untenable.

Ordained on August 24 of 1911, Teilhard moved to Paris in October 1912 to begin graduate study in paleontology under the direction of Marcellin Boule at the Museum of Natural History. He would eventually acquire his doctorate from the Sorbonne in 1924. His initial research included work with poorly catalogued dental and jawbone mammal fossils and the construction of tentative phylogenies for some of the carnivore lineages that now are dated from the Eocene through the end of the Oligocene (Teilhard de Chardin 1914–1915).<sup>2</sup> In December of 1912, Arthur Smith Woodward and Charles Dawson announced what would become known as the infamous Piltdown skull, a fraudulent fabrication now generally attributed to Dawson (De Groot et al 2016). On a visit to England in the summer of 1913, Teilhard discovered a fossil tooth that contributed to the Piltdown controversy; the fabricated skull at the center of the affair was not established to be a hoax till 1953. Teilhard never attributed much importance to the specimen and suspected that it was a composite of two species (Teilhard de Chardin 1920). From December 1914 through March of 1919 he served heroically as a stretcher bearer during some of the fiercest fighting of WWI. A total of 841 Jesuits were called into service and 164 of them were killed (Fouilloux 2005, 261). Many of those who survived were

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<sup>2</sup> See de Bonis 2006.

severely affected and upon returning to their religious communities they often felt stifled by the smug nineteenth century mentality exhibited by their older noncombatant superiors.

In 1920 Teilhard returned to Paris where he continued work on his dissertation. At this point he wrote a short composition on original sin dated 20 July that remained unpublished until after his death (Teilhard de Chardin 1971a). Here he set out the broad outline of the perspective he would periodically elaborate over the following three decades.

The principle obstacle encountered by orthodox thinkers when they try to accommodate the *revealed* historical picture of human origins to the present scientific evidence, is the traditional notion of original sin. It is the Pauline theory of the Fall and the two Adams which (somewhat illogically, we may add) makes it impossible to regard all the details found in Genesis as equally didactic and symbolic. It is that theory which is responsible for the jealous maintenance, as a dogma, of strict monogenism (first one man, and then one man and one woman), which it is in actual fact impossible for science to accept (Teilhard de Chardin 1971a, 36).

His alternative was to propose “an extensive metamorphosis of the notion of original sin,” a concept of universal scope untethered to one historical event.

... original sin, taken in its widest sense, is not a malady specific to the earth, nor is it bound up with human generation. It simply symbolizes the inevitable chance of evil (*Necesse est ut eveniant scandala*) which accompanies the existence of all participated being. Wherever being *in fieri* is produced, suffering and wrong immediately appear as its shadow: not only as a result of the tendency towards inaction and selfishness found in creatures, but also (which is more disturbing) as an inevitable concomitant of their effort to progress. (Teilhard de Chardin 1971a, 40).

Rather than a temporally located event attributed to a single pair of individuals, Teilhard now envisioned original sin as a concomitant condition of all creation.

Original sin is the essential reaction of the finite to the creative act. Inevitably it insinuates itself into existence through the medium of all creation. It is the *reverse side* of all creation. By the very fact that he creates, God commits himself to a fight against evil and in consequence to, in one way or another, effecting a redemption (Teilhard de Chardin 1971a, 40).

Although these theological ideas were not widely distributed at the time, Teilhard also published several paleontology articles shortly after the war. Among these was a review of *Les Hommes fossiles. Éléments de paléontologie humaine*, a widely read 1921 volume written by his mentor, Marcellin Boule. While conceding that some of Boule's terminology and inferences were not appropriate for Christians without some "explication," Teilhard's enthusiasm was obvious. He concluded that scientific research suggests that when the Genesis account refers to man being formed from "earth," this should be understood as a prolonged effort of the entire universe, *la totalité des choses* (Teilhard de Chardin 1921, 577). Teilhard's expansive sense of evolution was not at all typical of the time. For example, Henry de Dorlodot's development of evolution by means of secondary causes in his 1921 book was considered controversial, but when it came to human evolution, even Dorlodot merely mentioned that: "We know from Revelation that all human beings actually living on the earth have sprung from one single couple. But revelation alone can give such details concerning origins" (Dorlodot 1922, 104–105).<sup>3</sup>

In March of 1922, Teilhard began teaching geology at the Institut catholique in Paris, and it was at this point that he was invited to give a lecture on evolution for students at the Jesuit scholasticate in Enghien Belgium. When he included some comments on original sin, he was asked

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<sup>3</sup> De Dorlodot reserved further discussion of human evolution for a second volume that he worked on during the early 1920s. He included discussion of possible human co-Adamites and pre-Adamites but, in contrast to Teilhard, he upheld monogenism by insisting that the supernatural aspect of humanity applied only to Adam and his descendants, the sole lineage responsible for modern humans. Although in 1925 the Holy Office prohibited publication of this volume, Ernest Messenger translated some sections and incorporated them into his 1932 book but without the co-Adamite and pre-Adamite material (Messenger 1932). De Dorlodot's draft was only discovered in 2006 and was published in Groesens-van Dyck and Lambert, 2009. See also De Bont 2005.

by Louis Riedinger, a theology faculty member, to write up a summary of his views. It is difficult to assess the immediate impact of the resulting “Note” since it is not known how widely it circulated and who studied it. It was not published until 1969 in *Comment je crois*, volume 10 of Teilhard’s collected works (Teilhard de Chardin 1971b). As he had done in his earlier 1920 sketches, Teilhard pointed out the scientific improbability that the present human diversity could have resulted through descent from a single couple. The rejection of both monogenism and any idyllic prehistoric world without evil is presented as scientifically unavoidable.

As far as the mind can reach, looking backwards, we find the world dominated by physical evil, impregnated with moral evil (sin is manifestly ‘in potency’ close to actuality as soon as the least spontaneity appears) – we find it *in a state of original sin* (Teilhard de Chardin 1971b, 47).

Here Teilhard accepts the inevitability of evil wherever there is life or even inanimate matter almost in analogy to the degradation of energy in an entropic process subject to the second law of thermodynamics. His scientific mentality simply could not accommodate a literal interpretation of the Genesis account.

The truth is that it is so impossible to include Adam and the earthly paradise (taken literally) in our scientific outlook, that I wonder whether a single person today can at the same time focus his mind on the geological world presented by science, and on the world commonly described by sacred history (Teilhard de Chardin 1971b, 47).

In his concluding remarks, Teilhard again proposed original sin as a state coextensive with creation.

... we must so expand our ideas that we shall find it impossible to locate original sin at any one point in our whole environment, and will realize simply that it is everywhere, as closely woven into the being of the world as the God who creates us and the Incarnate Word who redeems us (Teilhard de Chardin 1971b, 54).

In April of 1923 Teilhard departed for paleontological research in China as a collaborator with Father Émile Licent. There he had the spiritual experience that prompted his famous “Mass on the World.” By the time he returned to Paris in October 1924 an unknown informant had transmitted his “Note” on original sin to Rome where it ignited a firestorm of theological consternation. It is tempting to speculate that the “Note” was read by more theologians within the Roman curia than among Teilhard’s initial intended audience. After a meeting with the Lyons Jesuit provincial, Jean-Baptiste Costa de Beauregard, Teilhard’s contrite letter promising conformity was not enough to satisfy superior general Włodzimierz Ledóchowski. A list of six “propositions” were submitted to Teilhard for his signature of affirmation (Grumett and Bentley 2018; Kemp 2019; Grumett 2019). It is not clear who composed these propositions. They were included in a letter to Ledóchowski from Father Gabriel Huarte, theology professor at the Gregorian University in Rome. Since there is no documentary evidence to the contrary, Kenneth Kemp has argued that they may well have been composed by Huarte himself. Nor is there direct evidence of input from outside the Jesuits although informal interactions with the Roman curia cannot be ruled out. At any rate, the first four of the six propositions were vexing for Teilhard.

- 1) The first man, Adam, when he acted against God’s command in paradise, immediately lost that holiness and justice in which he had been created (Council of Trent, Session 5, Canon 1).
- 2) The sin of Adam damaged not only him alone but also his descendants; and the holiness and justice received from God, which he lost, he lost not only for himself alone but also for us (Council of Trent, Session 5, Canon 2).
- 3) This sin of Adam, which is one by origin and passed on to all by propagation and not by imitation, inheres in everyone as something proper to each (Council of Trent, Session 5, Canon 3).
- 4) Therefore the whole human race takes its origin from one protoparent, Adam (this fourth proposition is nowhere explicitly defined; but is clearly implied by the proceeding three) (Grumett and Bentley 2018, 314).

The fourth proposition certainly made Teilhard hesitate; it was in fact precisely the idea of monogenism, as Teilhard used the term. The English

translation of the proposition by Grumett and Bentley includes its parenthetical claim that it “is clearly implied by the proceeding three.” Teilhard may well have questioned that reasoning, and when he ultimately did sign on July 1, he did so with an interesting qualification above his signature.

I accept these propositions in the full sense that the Holy Church gives to them. And I sign them all the more voluntarily because, despite the appearances that I might have given, I have never had any other idea than to let them dominate all scientific truth (Grumett and Bentley 2018, 314).

These words were carefully chosen and there is an intriguing ambiguity about “the full sense that the Holy Church gives to them.” Suspicious of Teilhard’s resolve, Ledóchowski promptly terminated his teaching assignment at the Institut catholique and ordered him back to China. For Teilhard, the contrast between the invigorating depth of scientific discovery and mystical experience in China and the narrow confines of doctrinal orthodoxy back in Europe must have been insufferable. And yet he did tolerate it and he remained obedient to his superior general just as Wasmann had fifteen years earlier.

In sharp contrast to the originality of Teilhard’s unpublished explorations, Xavier-Marie le Bachelet wrote a thoroughly mundane essay on original sin for the *Dictionnaire apologétique* (le Bachelet 1926). Drawing support from scripture and the Council of Trent, le Bachelet presented the orthodox doctrine of original sin as the transmission of the effects of Adam’s sin to all humans through direct descent. He saw no reason to engage with scientific input based upon evolution. Asserting that theological synthesis with scientific research was not necessary, he simply referred his readers to the *Dictionnaire apologétique* articles on “Transformisme” and “Homme.”

The “Transformisme” entry was in fact written by Robert de Sinéty shortly after Teilhard’s return to China (de Sinéty 1928). Again, the contrast to Teilhard was considerable. While Teilhard had been inspired by Boule’s *Les Hommes fossils*, De Sinéty used it as an example of a theologically unacceptable line of reasoning. He then made a distinction between *transformisme théiste généralisé* and *transformisme théiste mitigé*. He argued in support of the

second of these two versions of theistic evolution in which God intervenes in the evolutionary process to bring about directed innovations in an unknown number of cases. As he had in his earlier discussion of Wasmann, de Sinéty made an effort to show that evidence for universal common descent by means of natural selection is not convincing. He drew heavily upon Louis Vialleton, a vitalist and professor of histology from the faculty of medicine in Montpellier. Vialleton had published a critique of Darwinian evolution in 1924 that was negatively reviewed by Teilhard (Teilhard de Chardin 1925).

In his concluding remarks, de Sinéty posed a choice between human descent from a single couple or from a larger population, using monogenism and polygenism as labels for these two hypotheses. He noted that although a purely scientific perspective favored polygenism, he considered the required theological choice to be monogenism with God intervening not only to introduce the first human souls but also to modify in some manner the two pre-existing bodies in which the initial souls would function. In addition to retaining his earlier commitment to polyphyletic evolution, de Sinéty was explicit about the exclusive character of human origins through a single couple.

Man is not the product of evolution. His mental capacity, of an order essentially superior to that of a brute, requires a creative act of God at the origin of each human soul. No apodictic scientific argument can be opposed to the traditional thesis among Catholics according to which the Creator intervened in a special manner for the constitution of the initial human couple (De Sinéty 1928, col. 1847).

De Sinéty's essay is a rare example of a terminological shift at the relatively early date of 1928. Quite independent from any discussion of racial origins, he applied the terms monogenism and polygenism to the descent of humans from either a single couple or a larger population. Of course this sense of monogenism invoking Adam and Eve does imply the old sense of monogenism as the unity of the human race. However, the new sense of polygenism that attributes human origins to a population certainly does not imply the old sense of racial polygenism, the idea that human races are a plurality of deep evolutionary lineages that might even be distinct species.

Meanwhile, after returning to China from research in Ethiopia, Teilhard experienced a spiritual and intellectual crisis that peaked during the first two months of 1929 (Cuénot 1965, 116–119). He emerged with a renewed sense of both liberation and acceptance of his dual role as a Jesuit and a scientist. Apparently inspired by this sense of equanimity, he wrote a bold essay in which he once again addressed the linkage between monogenism and the doctrine of original sin. Initially published in 1929 in a journal primarily intended for clergy in China (Teilhard de Chardin 1929), a reprint appeared in the much more widely read *Revue des questions scientifiques* (Teilhard de Chardin 1930). In a paragraph that raised some eyebrows, Teilhard bluntly stated the scientific unacceptability of monogenism.

If there is anything in modern scientific views that still greatly disturbs Catholic thought, it is not the possible derivation of man (a spiritual being) from the animals. It is the difficulty of making a plausible reconciliation between transformism (once accepted) and a *strict monogenism*, that is to say our common descent from a single couple. On the one hand, for reasons which are not definitely philosophical or exegetic but essentially *theological* (the Pauline conception of the Fall and Redemption), the church clings to the historical reality of Adam and Eve. On the other, for reasons of probability and also comparative anatomy, science, left to itself, would never (to say the least of it) dream of attributing so narrow a basis as two individuals to the enormous edifice of humankind (Teilhard de Chardin 1966, 156).

In spite of this apparent impasse, Teilhard struck an optimistic note in predicting that as both science and theology progress “monogenesis will gradually, without losing any of its theological ‘effectiveness,’ assume a form fully satisfying our scientific requirements.”<sup>4</sup> Whatever Teilhard may have meant by theological “effectiveness,” he clearly was hoping that the concept of monogenism could be transformed in such a way as to be compatible with the scientific evidence.

Kenneth Kemp has chronicled the flurry of correspondence, accusations, and reactions that transpired after the publication of this essay and several

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<sup>4</sup> Translation by Kenneth Kemp, 2019, 944.

paleontological papers Teilhard wrote at this time (Kemp 2019, 942–947). In 1931, Ledóchowski, after learning from Donato Raffaele Sbaretto, the Secretary of the Holy Office, of numerous complaints about Teilhard’s publications, replied that future essays would be screened by two readers prior to publication, a requirement reiterated in 1934. The Franciscan Agostino Gemelli was a particularly persistent critic, sending frequent letters of protest to Rome. In May of 1931 he wrote a twenty-page letter to the Holy Office in which he warned that Teilhard’s view of human evolution from non-human ancestors was ill-advised and was not conclusively supported by the available scientific evidence. Gemelli had been the Italian translator of the last edition of Erich Wasmann’s book on evolution and had inserted his own conservative commentary. In his letter on Teilhard, Gemelli used Wasmann’s terminology of natural and systematic species to express the cautious position Wasmann had taken in print prior to being silenced (Kemp 2019, 15). At this point Gemelli was not alone in fighting a rearguard campaign against not only polygenism but monophyletic evolution as well.

Polygenism certainly was not the primary concern for all theologians interested in human evolution. Ernest Messenger hardly mentioned it in his widely discussed 1932 book, commenting only that “St. Paul would have led the Church into error on a matter concerning the essential mission of the Church, if there were in existence men who, in point of fact, were not descended from Adam” (Messenger 1932, 95). Similarly, when Thomas Motherway surveyed the numerous critiques of Messenger’s book published during 1932 and 1933, he concentrated on whether or not divine intervention was required to prepare Adam’s body for ensoulment. The presumption that Adam was a single person was not even mentioned except in reference to the 1909 mandate of the Biblical Commission (Motherway 1944).

Auguste Gaudel did briefly take up the issue in his article on original sin for the *Dictionnaire de Théologie Catholique*. Following a detailed account of the history of the doctrine, Gaudel quoted Teilhard’s 1930 statement of the opposition between scientific methodology and monogenism and granted that this appeared to be a serious difficulty. He insisted that monogenism

was the Church's position and confidently assured his readers that, as long as theologians and scientists remained in their proper domains and scientists did not advance mere hypotheses as established truths, "faith assures us that there will be no contradiction between our creed and human knowledge" (Gaudel, 1933, col. 591).

Two years later, Jean and Amédée Bouyssonie took a less conventional and more open-ended approach in their "Polygénisme" article for the *Dictionnaire de théologie catholique*. In 1925 they had abandoned their earlier assertion of the humanity of Neanderthals and had also disagreed with Teilhard's claims that the role of mutation in evolutionary change necessarily supports polygenism (Bouyssonie and Bouyssonie 1925, 110). By 1935 they had become more receptive to polygenism and their article would become a focal point for future debate. In contrast to Robert de Sinéty and Teilhard, they began with a definition inherited from the nineteenth century dispute over racial unity: "Polygenism may be defined as a theory that considers humanity to be composed of groups having different origins" (Bouyssonie and Bouyssonie 1935, col. 2520). After surveying some of the history of that argument, the Bouyssonies dismissed the conclusions of racial polygenists such as Klaatsch as mostly speculation. They agreed with Henri Vallois, a well-respected French anthropologist and paleontologist, who during the late 1920s was an articulate defender of the monophyletic makeup of humans (Vallois 1927). Vallois was adamant that comparative anatomy thoroughly demonstrates that modern humanity is one species and distinct from Neanderthals. Based upon their own first-hand experience with Neanderthal fossils and artifacts, it had been difficult for the Bouyssonies not to consider them human. However, they also realized that if *Homo sapiens* and human Neanderthals were descended from a non-human common ancestor, that would mean that some humans would not have Adam as an ancestor. Although the Neanderthal lineage eventually went extinct, there was a danger that a belief in human Neanderthals would be found contrary to the doctrine of original sin. They left this issue undecided for the present since the scientific evidence was still inconclusive on the structure and timing of the relevant phylogeny.

Turning to more recent discussions of monogenism, the Bouyssonies cited both Teilhard and Robert de Sinéty for arguments that a purely scientific approach excludes all but the slimmest possibility of human descent from just two forebears. They then concluded by posing a pair of rather daring hypothetical questions for further consideration.

Might it be that original sin is due to a more or less large collectivity rather than a single couple, and, if this is the case, might not all humanity still be descended from these first sinners? Secondly, might the analogies drawn by Saint Paul between the first Adam, father of the human race, and the new Adam, Jesus Christ, be more relevant to the universal and hereditary culpability of humanity and its redemption rather than to its community of origin? (Bouyssonie and Bouyssonie 1935, col 2536)

These were not purely rhetorical questions; they offered polygenism as a viable option that Wasmann and Teilhard, among others, had been forbidden to discuss. In avoiding censorship, the fact that Jean and Amédée Bouyssonie were not members of a religious order may have worked to their advantage, but their provocative questions did not go unnoticed.

Writing after WWII, the Dominican biblical theologian Francis Ceuppens indignantly objected to how the Bouyssonies had posed suggestive questions without providing orthodox answers. He also took umbrage at the blasé manner in which Teilhard had assumed the scientific necessity of polygenism in his 1930 essay. Ceuppens emphasized the tentative nature of scientific conclusions, based as they always are on incomplete evidence. After summarizing his reading of Genesis 1–3, he drew his own unequivocal conclusion regarding polygenesis.

At the origin: God created only two human beings, Adam and Eve, and from these two persons descended by means of generation, all other men; Adam and Eve are the proto-parents of all humanity, (Gen III, 20); from that follows the unity of the human race, directly opposed to polygenism (Ceuppens 1947, 28).

For Ceuppens, a correct reading of Genesis rules out polygenesis even though it is possible that evolutionary processes brought about the pre-human

animal body that God then transformed into the first ensouled human body. Furthermore, monogenesis follows from the doctrine of original sin propounded by Saint Paul. “Original sin is not the deed of a more or less numerous collective, but the deed of one alone, Adam, father of the human race” (Ceuppens 1947, 31). Ceuppens concluded by providing what he considered to be the appropriate answers to the questions the Bouysonnies had posed.

1. According to the doctrine of Saint Paul to the Romans, original sin is not the deed of a more or less numerous collective but is the deed of a unique Genesis couple from which, according to Genesis, all humanity descends through generation.
2. Saint Paul, through his analogies, certainly teaches the universal and hereditary culpability of the entire human race as well as its integral redemption, but he also insists, in a quite specific manner, on the common origin of this very humanity, a common origin which he assumes to be known to his readers, as is clearly taught in Genesis (Ceuppens 1947, 32).

Ceuppens’ answers to the Bouysonnies’ questions amounted to a synopsis of conventional theology on the topic. It may be that, in so thoroughly and dogmatically objecting to the Bouysonnies and Teilhard, Ceuppens brought more attention to their essays than they might otherwise have received.

Ceuppens’ perspective was shared by Abbé Émile Amann when he wrote the article on evolution for the *Dictionnaire de théologie catholique*. A theologian at the University of Strasbourg, Amann had taken over as director of the *Dictionnaire* in 1922 and gradually moderated the anti-modernist orientation typical of the volumes published earlier in the century (Fouilloux 2014). Although in 1907 he had been removed from his teaching position at the Nancy seminary due to his course on evolution, he now conformed to the expected constraints. After summarizing some of the history of evolutionary thinking and theological responses, he concluded that: “in the present state of theological science, it would appear at least rash (*téméraire*), not to say erroneous, to contest the descent of our humanity from a single couple” (Amann 1946, col. 1390). Furthermore, concerning the current consensus of theologians:

In fact, they are almost unanimous in excluding as inadmissible the hypothesis of polygenism and even a monogenism that would ascribe the origins of our humanity, not to a single couple, but to a single human group. It would therefore appear difficult to envision any attempt at a solution in which original sin would be a collective act (Amann 1946, col. 1391).

Once again, the terminology is potentially confusing. Amann refers to the hypothesis of the origins of humanity in “a single human group” as a form of monogenism, albeit one that would be rash to assert. For Teilhard and Robert de Sinéty, this scenario was in fact the version of polygenism most supported by science, and it would become the polygenetic hypothesis most under theological scrutiny after 1950.

In 1947 Teilhard returned to the theme of original sin in another essay that remained unpublished until 1969. After reiterating his view of original sin as “a reality that belongs to the trans-historic order” (Teilhard de Chardin 1971c, 188–189), he concluded that this sense of original sin, inseparable from creation,

... entirely respects Christian thought and the customary Christian approach – the only corrective it contributes, in short, being to substitute a collective ‘matrix’ and a collective heredity for the womb of our mother Eve. And this, incidentally, has the further result of releasing us from the necessity (progressively more unacceptable) of having, illogically, to derive the whole human race from one single couple (Teilhard de Chardin 1971c, 197).

It is hardly surprising that this essay was not published at the time of composition. The “corrective” Teilhard now proposed did not have monogenism merely “assume a different form,” as he had hoped back in 1929; it was simply replaced by polygenism. Yet Teilhard mentioned in a footnote that “the theological side of the explanation offered here has been upheld in Lyons by Pere Rondet” (Teilhard de Chardin 1971c, 197).

Teilhard’s reference to Henri Rondet links the topics of original sin and polygenism to a far broader theological conflict. By the mid-1930s, prominent French theologians were calling for a revitalized theology that

would be more engaged with active spiritual life. In particular, Dominicans such as Yves Congar and Marie-Dominique Chenu proposed a renewed attention to historical sources and a sensitivity to the cultural context of spiritual experience that would make theology independent from scholastic methodology and terminology.<sup>5</sup> During the 1940s, the movement was labelled *nouvelle théologie*, initially with negative implications, as was the case with the “modernism” label at the beginning of the century. By this point the center of innovation shifted to Jesuits such as Jean Daniélou and Henri de Lubac.

Henri Rondet contributed to *nouvelle théologie* as *Prefect of Studies* at the Lyon-Fourvière Jesuit house. Copies of Teilhard’s unpublished essays circulated freely there, much to the consternation of the Jesuit Superior General (Avon 2005). As Teilhard noted, Rondet was indeed primarily concerned with the “theological side” of the original sin concept. While he acknowledged the “mystery” of original sin, his studiously vague references to Adam were primarily incorporated into an exploration of how the history of philosophy depicts human confrontation with good and evil; he did not explore implications of paleontology (Rondet 1946). However, Rondet also wrote a Socratic dialogue reminiscent of Galileo’s 1632 *Dialogue on the Two Chief World Systems*, although on a much smaller scale. Here Rondet imagined a spirited conversation in which an astute and well-read Catholic seeks council from a sympathetic clerical advisor on how best to reconcile scientific conclusions with Catholic doctrine. When the conversation turns to original sin, the priest admits that, although the majority of theologians profess monogenism, some quietly prefer polygenism, the overwhelming choice of scientists. His interlocutor has read Robert de Sinéty’s article “Transformisme” and is troubled by the conflict with original sin that polygenism generates when evolutionary theory is applied to human beings. The advisor recommends the article by the Bouyssonies in the “more liberal” *Dictionnaire de théologie catholique* and quotes their two provocative questions in full. While granting that raising these questions might be considered theologically rash, he finds them worthy of further

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<sup>5</sup> See Nichols 2000, Kirwan 2018, and Mettepenningen 2010.

consideration. Ultimately, he advises patience: “The most serious difficulties against the ordinary formulation of the dogma of original sin come less from paleontology or ethnology than from biblical criticism and the comparative history of religions” (Rondet 1943, 980). Furthermore, even if polygenism should be demonstrated as indubitably true, “the dogma of an original sin would remain absolutely intact” (Rondet 1943, 979). Writing from the relatively safe shelter of a fictional dialogue, Rondet may well have been paraphrasing conversations he entertained as Prefect of Studies at Fourvière. In the absence of any definitive pronouncements from the Vatican, his imaginary advisor could acknowledge the guidelines imposed by the Biblical Commission but also claim that scientific support for polygenism does not pose a threat to original sin doctrine, properly understood. The tacit implication was that the doctrine needed to be clarified; Rondet himself would not return to the topic until after Vatican II.

Jean Daniélou was willing to make a more explicit call for immediate theological renewal. Writing in the Jesuit journal *Études*, where he served as editor, Daniélou praised Teilhard for compelling Christians to embrace evolutionary perspectives.

The broad lines of his system, according to which history is progressively raised from the biological world to that of thought, and from the world of thought to that of Christ, and which furthermore reconnect with the views of the Fathers, will persist as established (Daniélou 1946, 15).

It was Teilhard’s sensitivity to historical process that for Daniélou was such a welcome contrast to the scholastic theology of the age, a “mummification of thought that remained fixed in its scholastic forms and had lost contact with the development of philosophy and science” (Daniélou 1946, 6). In particular, a modern understanding of the doctrine of original sin should concentrate upon just three central ideas: “that man before Christ is in a state of sin; that human freedom bears responsibility for this sin, and that men are in solidarity with respect to this sin” (Daniélou 1946, 15). It is in this context that the Christian experience of the apparently absurd coexistence of good and evil finds vivid expression in modern philosophy,

especially existentialism. To engage productively with the modern world, theology must draw upon all its resources, ranging from Saints Ireneus and Augustine, to Teilhard and Kierkegaard (Daniélou 1946, 16).

Daniélou's essay became a lightning rod for Jesuit praise and Dominican condemnation. While formal theological clarification from the Vatican was not to be expected in the midst of WWII, shortly thereafter a concerted Dominican attack on *nouvelle théologie* came from Thomists such as Marie-Michel Labourdette who defended the primacy of Thomistic metaphysics as an essential foundation for the explication of the unchanging truths of revelation (Fouilloux 1995). Of particular import for the polygenism issue was the more aggressive critique by Réginald Garrigou-Lagrange, an authoritative fixture at the Angelicum in Rome, where he taught from 1909 to 1960. As a stalwart Thomist, he characterized *nouvelle théologie* as a revival of modernist errors (Garrigou-Lagrange 1930). He found particularly objectionable the idea that Catholic doctrine is a developmental symbolic representation of religious aspiration contingent upon changing cultural and philosophical conceptual systems for its legitimate expression. Garrigou-Lagrange insisted upon a stable bedrock of revealed truths accurately understood through Aristotelian metaphysics. In 1946 he wrote a stern condemnation of *nouvelle théologie* in which he used the erosion of the doctrine of original sin as one of his primary examples of the consequences of holding theological truth hostage to philosophical expression. He had been scandalized by the unauthorized circulation of type-written theological essays in which "Adam seems not to be an individual man from which the human race descends, but rather a collectivity," a view he took to be irreconcilable with Saint Paul's doctrine of original sin (Garrigou-Lagrange 1946, 135). He quoted a long passage from Teilhard's clandestinely circulated essay "How I believe" in which Teilhard developed an evolutionary sense of the incarnation as a teleological approach toward the *universal cosmic centre*.<sup>6</sup> Garrigou-Lagrange considered these ideas delusional results of losing touch with the unchanging truth of permanent doctrine.

<sup>6</sup> Written in 1934, Teilhard's essay was eventually published in *Comment je crois*, volume 10 of his collected works, in 1969. The passage quoted by Garrigou-Lagrange is also in the 1971 English edition, *Christianity and Evolution*, 127–128.

The Incarnation of the Word, the mystical body, the universal Christ, thus would be mere moments of evolution, and from this perspective of a constant progress from the origin, it would not appear that there would have been a fall at the beginning of the history of humanity, but a constant progress of good triumphing over evil according to the very laws of evolution. Original sin in us would be the consequence of the faults of men who have exerted a dark influence upon humanity (Garrigou-Lagrange 1946, 138).

In 1948 Garrigou-Lagrange reiterated his opposition to the polygenetic opinion that “*Adam* can be interpreted as *a collective name* rather than as an individual” (Garrigou-Lagrange 1948, 191). His misleading gloss of polygenism was that “If polygenism were true, there would have been several initial men in very different regions of our terrestrial globe, any place where higher primates were sufficiently evolved” (Garrigou-Lagrange 1948, 197). This polyphyletic sense of polygenism was of course not a necessary consequence of rejecting monogenism. Although Teilhard’s monophyletic polygenism was a more relevant option, Garrigou-Lagrange seems to have lapsed into the polyphyletic terminology of nineteenth century racial polygenism. At any rate, he agreed with Ceuppens that Saint Paul attributed original sin to an individual, as confirmed by the Council of Trent, the exegetical tradition, and the 1909 decree of the Biblical Commission. To hold that “Adam” is actually a reference to more than one person would be to say that all these sources “*have not positively taught what they appeared to teach according to the obvious and literal sense of their words*” (Garrigou-Lagrange 1948, 195). If polygenism were true, the Holy Spirit would in effect have preserved an error in the writings of all those who have taught monogenism as the correct theological doctrine. Garrigou-Lagrange gave no thought to subordinating theology to the authority of the natural sciences. Furthermore, he was skeptical about any significant unmediated evolutionary progression, that is, the descent of a “higher” species from a “lower” one. Such a transition would violate the metaphysical principal that an effect cannot have a higher degree of perfection than its cause. Given the shortcomings of the science that provides the grounding for polygenesis, he labelled evolution simply

a hypothesis rather than an established fact. Since science cannot establish polygenism with certitude, why should it be adopted in clear contradiction with scriptural revelation? On the other hand, concerning monogenism, “according to the majority of theologians, it is explicitly revealed in specific scriptural texts, implicitly in others, and virtually in the dogma of original sin” (Garrigou-Lagrange 1948, 196). In short, “according to scripture, tradition, and theology, monogenism appears increasingly as a truth *proxima fidei*,” a doctrine accepted by most theologians as a revealed truth but not yet ruled upon as such by the Church (Garrigou-Lagrange 1948, 202). Preserving the traditional role of monogenism in the doctrine of original sin was essential to Garrigou-Lagrange’s energetic attack on *nouvelle théologie* and motivated him to encourage an authoritative pronouncement from the Vatican. Directives from Rome resulted in strictures against the Fourvière Jesuits carried out by their Superior General, Jean-Baptiste Janssens, especially in 1950. Rondet was forced to resign as editor of *Études* and also would lose his position as Prefect of Studies in 1951.

In spite of this hostile environment and the energy spent in silencing Teilhard, favorable discussions of polygenism proliferated. Philip Donnelly commented that: “In the past fifteen years there has been a growing inclination among some French Catholic scholars toward polygenism and toward attempts at reconciling this scientific hypothesis with Genesis” (Donnelly 1949, 433). As examples, Donnelly mentioned the Bouyssonie brothers, Jean Guitton, René Boigelot, Henri Rondet, André-Marie Dubarle, and Dominique Dubarle. In one respect, Donnelly’s comment was inaccurate in that the primary focus for efforts to resolve the polygenism issue were more focused on original sin doctrine than on Genesis itself. There is also reason to believe that this choice was encouraged by seemingly unrelated events in Rome during the 1940s. The years directly following 1942 included several high-profile lectures and publications to mark the tricentennial of Galileo’s death (Finocchiaro 2005, 275–294). Galileo was enthusiastically acclaimed for his piety and his faithful submission to the verdict of a misguided trial. In a widely distributed lecture and publication, the Jesuit Filippo Soccorso found fault with the theologians who had attributed scientific authority to

scripture and mistakenly inferred a conflict with Copernican astronomy. Pius XII surely took note of this assessment and would avoid a similar mistake with respect to polygenism; he would express his concerns in the context of doctrine rather than Genesis.

The relevant terminology still had not become standardized. In a 1949 article, Joseph Bataini contrasted two groups, the first, “hominids more or less similar to us,” including modern humans and Cro-Magnons, and the second, “those who present profound differences from us,” including Neanderthals and *Homo erectus*. He then claimed that proponents of monogenism would characterize the two groups as races while from the viewpoint of polygenism they would be species (Bataini 1949, 189). This is a puzzling assertion in that it would have monogenism imply not just that all modern humans are part of the same species but also that only a racial distinction separates them from Neanderthals and *Homo erectus*; polygenism would simply make the Neanderthal and *Homo erectus* group a separate species from the modern human group. Bataini presented examples of scientists and theologians who allegedly favored either monogenism or polygenism without noting that they did not use these terms in the sense that he had defined them. In effect, midway through his article, he implicitly shifted to an updated and more useful understanding of monogenism as the view that all humans descend from a single couple. He concluded that scientific research had not absolutely ruled out monogenism while theological and exegetical arguments had not yet established it as revealed truth. When he revisited the issue in 1950, he rejected A. Mancini’s hypothesis that God ensouled a large population out of which one couple sinned and passed the consequences on to their descendants (Bataini 1950). Bataini himself remained loyal to the monogenism of a single initial human couple.

A final example of Catholic thinking about polygenism just prior to *Humani generis* appeared in the initial French edition of Jacques de Bivort de La Saudée’s widely read anthology of scientific and theological essays, *Essai sur Dieu, l’Homme et l’Univers*. In a chapter on human origins and the fossil record, Georges Vandebroek, the Louvain professor of comparative anatomy and anthropology, summarized the evidence for human evolution

and noted the complexity of data provided by the large number of newly discovered specimens, especially *Homo neanderthalensis* and *Homo erectus*. His concluding remarks included the common retention of nineteenth century terminology.

In the eyes of certain biologists, these considerations might suggest the idea of polygenism, namely the scientific theory that the various human races derive from parallel lines that separated from a common stock before attaining the human level. But this, it must be said, is a theory for which at present there is no shadow of scientific proof. A sounder conception is that all the hominids derive from a single stock that had already attained a human level, and thereafter various lines would have become rapidly established, all more or less parallel. They produced the different fossil and present-day types. This is a form of monogenism (Vandebroek 1953, 140).

Here Vandebroek still used the terms polygenism and monogenism much as they had often been used in the nineteenth century. The version of “monogenism” he preferred had humanity descending from a single “stock” (*souche*), but not necessarily from a single couple; as was the case in Amann’s 1946 discussion, this excessively inclusive definition actually allowed for the possibility of polygenism in the sense that Teilhard and Robert de Sinéty used the term.

The immediate context for *Humani generis* clearly included a growing undercurrent of receptivity to polygenism even if it was not expressed with terminological precision. Garrigou-Lagrange’s strong opposition was also well-known. As historian Michael Kerlin has argued, although there is no direct evidence that Garrigou-Lagrange helped to ghost-write the encyclical, “it is plain that he had a major role in its gestation” (Kerlin 2007, 111). Just as Pius X’s *Pascendi* condemned “modernism” in 1907, *Humani generis* took aim at *nouvelle théologie* and would make manifest Garrigou-Lagrange’s conviction that polygenism was not a theologically acceptable facet of human evolution.

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