

## Article

# Contemporary Version of the Monogenetic Model of Anthropogenesis—Some Critical Remarks from the Thomistic Perspective

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**Abstract:** This article refers to the debate between proponents of mono- and polygenism. After clearly defining these two positions in reference to the distinction between mono- and polyphyletism, it presents the scientific consensus in favor of polygenism as the default model of speciation. Taking this into account, the remaining part of the article concentrates on the monogenetic model of human speciation. Approaching this topic from the Aristotelian–Thomistic perspective, it delineates the three main theological arguments and one more scientifically grounded contention in favor of monogenism and offers a critical evaluation of Kenneth Kemp’s contemporary model of theological monogenism grounded in biological polygenism. While viable, consistent, and remaining in line with the most recent paleoanthropology and human genetics, it needs to be cleared of its voluntaristic and dualistic undertones and reformulated in a way that avoids its implicit assumption of a metaphysically dubious substantial change taking place at the last step of the origin of *Homo sapiens*.

**Keywords:** anthropogenesis; Aquinas; Aristotle; evolution; *Humani generis*; hylomorphism; Kenneth Kemp; monogenism; origin of man; polygenism



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## 1. Introduction

It is commonly acknowledged that the most emotional reaction to evolutionary theory on the side of the Christian tradition, and the Catholic Church in particular, came in response to the Darwinian view on anthropogenesis, which posed a considerable challenge to both biblical exegesis and theological anthropology. One of the most important aspects of the conversation between scientific and religious worldviews on the topic of hominization is the debate between the proponents of mono- and polygenism. In this article I will concentrate on the former view, which strives to remain faithful to the more traditional interpretation of the biblical story of human origins.<sup>1</sup>

Approaching this topic from the Catholic, Aristotelian–Thomistic perspective, I will proceed in the following way. First, I will provide a terminological clarification, defining mono- and polygenism and distinguishing them from mono- and polyphyletism. In the following section, I will present the scientific consensus in favor of polygenism as a default model of speciation. Next, I will delineate the main three theological arguments and one more scientifically grounded contention in favor of monogenism. The subsequent section will concentrate on Kenneth Kemp’s contemporary model of theological monogenism grounded in biological polygenism—the position he develops in correspondence to earlier speculative analysis coming from Andrew Alexander and Camille Muller. In the next step I will offer my critical evaluation of Kemp’s position. I will argue that while his model can be regarded as a viable and consistent version of monogenetic anthropogenesis that remains in line with the most recent paleoanthropology and human genetics, it needs to be cleared of its voluntaristic and dualistic undertones, and reformulated in a way that avoids its implicit assumption of a metaphysically dubious substantial change taking place at the last step of the origin of *Homo sapiens*. A short conclusion will close the article.

## 2. Terminology

The distinction between mono- and polyphyletism was introduced by Haeckel in 1876. By 1866 he was using the word “phylon”, in the sense of “stem”, as a root for both terms, which he used to differentiate between two distinct scenarios – one in which all living things originate from one common ancestor, and the alternative one, in which they are traced back to several independent places of origin:

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 Monera 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) (Haeckel 1876, 2: 45).

The distinction between mono- and polygenism entered the conversation within the context of evolutionary reinterpretation of anthropogenesis. At the beginning of the debate in the nineteenth century, “polygenism” was defined as the claim that there were multiple very ancient origins for distinct human races that should be classified as separate species. This inspired advocates of slavery, especially in the United States, who used polygenism ideologically to claim that humanity was indeed made up not only of distinct races but even of distinct species (see Hofmann 2020, pp. 102–7).<sup>2</sup> Monogenism was the contrary view that racial distinctions are insignificant with respect to the unity that humanity owes to its singular origin, i.e., single human lineage (rather than a single couple).

These definitions of poly- versus monogenism might be interpreted as referring, in fact, to poly- versus monophyletism. As notes Hofmann, it was in 1928 that the French Jesuit entomologist and historian Robert de Sinéty introduced a terminological shift. It seems that, independently of the ongoing discussion of racial origins, he proposed a new application of the terms “monogenism” and “polygenism” to the descent of humans from either a single couple or a larger population (see De Sinéty 1922, col. 1793–1848). Consequently, we may say that the appropriate list of terms in the debate on this particular aspect of evolutionary anthropogenesis includes:

- (1) Polyphyletism—it assumes that the human species originates from several ancestor species. Human speciation is thus a result of convergent evolution in more than one region (ecological niche). Few scientists support this view as of today.<sup>3</sup>
- (2) Monophyletism—it assumes that the human species originates from one common ancestral species. This theory is favored by contemporary comparative anatomy and paleoanthropology.
- (3) Polygenism—it assumes that the first humans came from many pairs of ancestors (within one population). In other words, the last step of speciation that gives rise to species  $S_2$  takes place in an entire group of organisms that belong to species  $S_1$ .
- (4) Monogenism—it assumes that the human species derives from one pair of hominins. In other words, the last step of speciation giving rise to species  $S_2$  takes place in just one or two organisms that belong to species  $S_1$ .

## 3. Scientific Point of View

The modern synthetic (as well as extended) theory of evolution supports monophyletism and polygenism. As notes Dobzhansky, “[S]pecies arise not as single individuals but as diverging populations, breeding communities and races which do not reside at a geometric point, but occupy more or less extensive territories” (Dobzhansky 1962, pp. 180–81).<sup>4</sup> From a biological point of view, the classical monogenetic scenario would require a minimization of the genetic variation within the population, causing an effect similar to the so-called “bottleneck effect”, i.e., a sudden decrease in the size of the transitional and the newly emerged population, and then—after several generations of a minimal size—its increase to a considerable size. This scenario is highly improbable due to at least two

reasons: (1) an extremely high level of inbreeding, which radically weakens the genetic material, and (2) a minimal chance of the survival and the immense reproductive success of the first humans. Moreover, even if it occurs, it does not assume a population of exactly two individuals but, rather, a larger group of organisms, which does not fit into the strictly monogenetic version of anthropogenesis. As Dennis Venema and Scot McKnight note:

It is technically possible that a species could be founded by a single ancestral breeding pair, just as it is technically possible that a new language could be founded by two speakers. This is not what one would usually expect, however. . . . Put most simply, DNA evidence indicates that humans descend from a large population because we, as a species, are so genetically diverse in the present day that a large ancestral population is needed to transmit that diversity to us (Venema and McKnight 2017, pp. 46, 55).

According to Nicholas Lombardo, the genetic evidence “not only challenges this view [strict monogenesis] but makes it completely unsustainable” (Lombardo 2018, p. 523). It does so on the account of our genetic variability, which requires a much larger group of ancestors to give an origin to our species. In his discussion of this scientific fact, Kemp refers to the example of the DRB1 gene (contributing to the immune system). It turns out that thirty-two of the fifty-eight variants (alleles) of this gene are found in both humans and chimpanzees. Because it is highly unlikely that the same mutations occurred independently in both species, they must date back to before the lineages split. Since no individual can carry more than two alleles of one gene, a population bottleneck of a single couple is way too narrow to channel these many variants (see Kemp 2023, p. 30).

Consequently, with regards to human evolution, our ancestral population size is estimated at about 7000—in the case of the African groups—and at least 3000 in non-African groups. The new approach, which is based not only on the comparison of humans with other primates but refers to the analysis of genetic diversity solely within our species (through mapping and cataloguing single nucleotide polymorphisms and analyzing linkage disequilibrium), continues to support the conclusion that:

humans, as a species, are descended from an ancestral population of at least several thousand individuals. More importantly, the scalability of this approach reveals that there was no significant change in human population size at the time modern humans appeared in the fossil record (~200,000 years ago), or at the time of significant cultural and religious development at ~50,000 years ago (Venema 2010, p. 175)

Naturally, all this becomes challenging for the theological interpretation of anthropogenesis within the camp of theistic evolutionism. In the remaining part of the article, I will list and discuss arguments in favor of monogenism and the contemporary version of this position.

#### 4. Arguments in Favor of Monogenism

We can think about at least three theological arguments and one more scientifically grounded contention in favor of monogenism that have been proposed and are discussed in the context of the debate on biological, philosophical, and theological notions of anthropogenesis.

##### 4.1. Scripture, Patrology, and Scholasticism

The first of those arguments builds upon the three foundational sources of the classical tradition in theology. It departs from Scripture passages that, at least indirectly, can be interpreted as supporting the position of monogenism. The standard points of reference include: (1) Genesis 2–4—telling the story of the two first representatives of the human family—Adam and Eve; (2) Wis 10:1–2—thus speaking about personified Wisdom: “She preserved the first-formed father of the world when he alone had been created; And she raised him up from his fall, and gave him power to rule all things.”; (3) Acts 17, 26a—where

we read about God who “made from one the whole human race to dwell on the entire surface of the earth” (it is worth noting that the text does not contain the noun “human,” hence some have suggested that it may refer to one hominin family); and (4) Rom 5:17 and 1 Cor 15:21–22—Paul’s analogical typology of one Adam and one Christ.<sup>5</sup>

Naturally, this raises the question of how literal our exegesis of the Scripture should be. However, even if spiritual and metaphorical (allegorical) senses of the Bible were introduced already in early patristic literature, the proponents of monogenism assure us that the way in which the majority of the fathers of the Church commented on both accounts of the origins in Genesis leaves no doubt that they believed that humanity began with one man and one woman. One may refer to (1) Irenaeus clearly stating: “[T]he Lord took dust from the earth and formed man.” (Irenaeus 1885, book III, chapter 21, no. 10); (2) Tertullian reminding us: “[Y]ou have both the clay made glorious by the hand of God, and the flesh more glorious still by His breathing upon it.” (Tertullian 1885, VII, page 962); (3) Basil the Great asserting that “Creation of man goes beyond all other things. For he took (says Scripture) dust from the earth and shaped man.” (Basil the Great 1888, p. 40); or (4) Ambrose declaring that “... woman was made out of the rib of Adam. She was not made of the same earth with which he was formed ...” (Ambrose 1961, chapter X, page 327).

Building upon Scripture and the patristic tradition, scholastic theologians seem to share the same doctrine of the direct formation of the bodies of the first humans by God. Aquinas thinks that the body of the first man must have been shaped by God, because it could not arise from entities belonging to a different species: “The first formation of the human body could not be by the instrumentality of any created power, but was immediately from God” (Aquinas 1946, ST I, 91, 2, co.). Hence, the proponents of monogenism may suggest that, if his theology can be reconciled with an evolutionary view of anthropogenesis, it has to embrace their position, which traces the history of the human species back to Adam and Eve.

#### 4.2. Pius XII and *Humani generis*

A very important voice in the conversation on mono- versus polygenism came from Pius XII in his encyclical letter *Humani generis*. Opening the possibility for Catholic scholars and other faithful to think about some aspects of human origins in evolutionary terms,<sup>6</sup> the pope expressed his skepticism about the polygenetic model of human speciation. Most importantly, he related the question of mono- versus polygenism to the dogma of the original sin in Adam and the redemption in Christ:

When, however, there is question of another conjectural opinion, namely polygenism, the children of the Church by no means enjoy such liberty. For the faithful cannot embrace that opinion which maintains that either after Adam there existed on this earth true men who did not take their origin through natural generation from him as from the first parent of all, or that Adam represents a certain number of first parents. Now it is in no way apparent how such an opinion can be reconciled with that which the sources of revealed truth and the documents of the Teaching Authority of the Church propose with regard to original sin, which proceeds from a sin actually committed by an individual Adam and which, through generation, is passed on to all and is in everyone as his own (Pius XII 1950, p. 37).<sup>7</sup>

As notes Simon Gaine, theologians in the period before the encyclical had gone so far as to judge monogenism not only “certain,” but even as “proximate to faith”, or *de fide*, by way of the ordinary and universal magisterium (See Gaine forthcoming).<sup>8</sup> Nevertheless, despite such confidence on the part of those theologians, it is rather certain that Pius XII did not solemnly define monogenism or even indicate that it was definitively taught. Rather, he left its proposal at the level of the ordinary magisterium. In itself, this restraint was sufficient to suggest that theologians should restrict its theological note at the most to

theologically certain. Gaine also mentions that, as at Vatican I, a preparatory draft for Vatican II (1962–65) included a definition concerning monogenism, but the doctrine did not reach the final documents (see [Gaine forthcoming](#)).

Having said this, we must acknowledge that St. Paul's analogy between one Adam and one Christ, and soteriology built upon it, are deeply entrenched into the fabric of the Christian tradition. Hence, even if Pius XII did not solemnly define monogenism, he definitely did not see an acceptable reinterpretation of this tradition. At the same time, we might assume that if such an interpretation were worked out and widely accepted, it could significantly shift the mono- versus polygenism debate.<sup>9</sup>

#### 4.3. Paul VI

In 1966 pope Paul VI delivered an address to the participants of a symposium on original sin. His position on the issue of mono- versus polygenism seems to be even stronger than the one expressed by Pius XII in *Humani generis*. The pope points out that some modern authors start “from the undemonstrated hypothesis of polygenism” and give “explanations of original sin” which are “irreconcilable with Catholic doctrine.” They deny “that the sin from which” our many ills are derived “was first of all the disobedience of Adam, ‘the first man’, a figure of the man to come—a sin that was committed at the beginning of history.” He emphasizes that “The sin of the first man is transmitted to all his descendants not through imitation but through propagation.” It “means privation and not just an absence of holiness and justice” (Pope Paul VI 1966, pp. 229–35).<sup>10</sup>

Interestingly, John Paul II quotes this passage in one of his 1986 catechisms, saying it is valid and yet it should serve not as a conclusive opinion but as “a stimulus for further research” for those who engage in “evaluating, with the wisdom of faith, the explanations offered by science about the origins of humanity” (John Paul II 1986, no. 4).

#### 4.4. Mitochondrial Eve and Y-Chromosomal Adam

The fourth argument in favor of monogenism, proposed by some scholars, is grounded, somewhat surprisingly, in evolutionary biology and genetics. Based on the scientific research, it has been suggested—in the late 1980s for the “mitochondrial Eve” and in the early 1990s for the “Y-chromosomal Adam”—that human mitochondrial DNA coalesces, leading to one common female ancestor in the recent past (170,000 years ago), while the human Y-chromosome sequences also coalesce to one common male ancestor even more recently (~50,000 years ago) (see [Ingman et al. 2000](#); [Thomson et al. 2000](#)).

Because the names alluding to the biblical narrative in Genesis were used by scientists, the theory of “mitochondrial Eve” and the “Y-chromosomal Adam” received considerable attention outside of the scientific community—where it was regarded by many as a scientific proof for monogenesis.<sup>11</sup> However, it has been demonstrated that such a conclusion is rather mistaken and ungrounded. As notes Venema, the reason for such rapid coalescence of mitochondrial and Y-chromosome sequences is that these particular sequences are inherited in a distinct way, when compared with (non-Y) chromosomal DNA. The mitochondrial sequence is passed only through mothers (hence ends abruptly if a mother has only sons), while the Y-chromosome sequence is passed only through fathers to their sons (hence ends abruptly if a father has only daughters). However, Venema adds that, in both cases, non-Y chromosomal DNA lineages continue, i.e., both fathers and mothers pass chromosomes to offspring of both genders. Consequently:

Though our mitochondrial DNA lineage coalesces to “Mitochondrial Eve” in the relatively recent past, present-day variation of human chromosomal DNA indicates that she was but one member of a substantial breeding population. The same logic, *mutatis mutandis*, applies to the inheritance of the Y-chromosome and the coalescence of human Y-chromosome variation to a single “Adam” in the recent past. While the rapid coalescence of these specially inherited DNA sequences is interesting in its own right, such sequences are not useful measures

of ancestral human population sizes because of their unique modes of inheritance (Venema 2010, p. 176).<sup>12</sup>

## 5. Contemporary Version of the Monogenetic Scenario

Those who claim that strict theological monogenism requires just as strict biological monogenism face the challenge of evolutionary biology and biological anthropology, which—for the reasons mentioned above—favor the polygenetic scenario of the human speciation. One way of avoiding this difficulty is to assume special (miraculous) divine intervention(s) that enabled both evolutionary origin and extraordinary reproductive success of exactly one or two first human beings, eliminating all negative effects of the high level of inbreeding within the first generations of this new species. This scenario, however, is not favored by those who envision human speciation as a natural process that needs to remain in agreement with the scientific data and refer to the classical theological argument emphasizing the dignity of creatures as secondary and instrumental causes “in the hand” of God.<sup>13</sup>

Consequently, most recent advocates of monogenism feel obliged to search for a more moderate and scientifically informed version of this model of human speciation, one that could be reconciled with a more traditional reading of Genesis and the doctrinal teaching of the Church.<sup>14</sup>

### 5.1. Andrew Alexander and Camille Muller

The most prominent contemporary version of the mitigated monogenetic view of anthropogenesis was developed and defended by Kenneth Kemp. It is based on the trifold distinction of biological, philosophical, and theological notions of the human species (see Kemp 2011, p. 230).<sup>15</sup> In the delineation of his argument, Kemp refers to Andrew Alexander, who introduced this classification in the 1960s (Alexander 1964, pp. 350–51), thus defining the three categories in question:

1. The biological species is the population of interbreeding individuals.
2. The philosophical species is the rational animal, i.e., a natural kind characterized by the capacity for conceptual thought, judgment, reasoning, and free choice.
3. The theological species is, extensionally, the collection of individuals that have an eternal destiny. The *Catechism of the Catholic Church* says “God created man in his image and established him in his friendship” (CCC, no. 396).

Camille Muller, a botanist at the University of Louvain, had already introduced a preliminary version of this idea in 1951. He assumed that Adam and Eve coexisted with a wider biologically human population (he did not identify this population with reference to a more precise scientific nomenclature). In his scenario, the conclusive step of the hominization hinges on God’s elevating of the human soul through the gift of sanctifying grace, which developed in the first “theological humans” a disposition or receptivity to the divine will and thus raised them to the supernatural order. Offering his hypothetical “less strict” form of monogenism, he claimed that:

Through the successive unions of the descendants of several primitive couples (including the initial couple of Genesis), a very limited number of generations would be enough for all men to be descended from the first man of which Genesis speaks (without requiring marriages between brothers and sisters), and, just as likely perhaps, for all modern humanity (the only ones the Fathers of the councils would have considered) to be tainted by original sin and saved by Christ. Would not this still be monogenism, less strict, but equally efficacious? (Muller 1951, p. 304).

The main difficulty of Muller’s position is his assumption that, before God bestowed the gift of supernatural grace on the particular exemplar(s) of hominins, the wider population to which they belonged consisted of creatures which both biologically and metaphysically speaking were “fully” human (*Homo sapiens*). This would mean they had immortal

human souls. If we assume (as classical theology does) that sanctifying grace is a supernatural gift, Muller's position appears to suggest the existence of an entire population of human beings, in the state of pure nature (*natura pura*), before the bestowal of the gift of grace on some chosen representatives of this group. This would bring him back to polygenism, unless he assumed that supernatural grace is somehow constitutive for human nature, and only those who possessed it were truly humans. However, this proposition, which we might classify as theological monogenism within biological polygenism, puts into question the Christian understanding of divine grace as transcendent with respect to human nature, a free gift of God, which elevates and perfects it, but does not belong to its natural fabric.

### 5.2. Kenneth Kemp

Hence, leaving aside Muller's early formulation of the position he himself embraces and further develops, Kemp concentrates on its reformulation as offered by Alexander, and says:

The distinction between the biological species concept and the theological one is important, since they are not necessarily co-extensive. Two individuals, one theologically human and the other not, would remain members of the same biological species as long as they were capable of producing fertile offspring. While it would certainly be a theological error to exclude any members of the biological species now living from the philosophical or theological species man (i.e., to hold that they lacked rational souls, or that they were not among those to whom God had offered His friendship), there can be no theological objection to the claim that some one (or two) members of a prehistoric, biologically (i.e., genetically) human species were made sufficiently different from the others that they constituted a new theological species, e.g., by being given a rational soul and an eternal destiny (Kemp 2011, pp. 230–31).

Most importantly, on this account the emergence of a “fully,” i.e., theological human species does not require the development of a barrier for sexual reproduction, which biologists assume takes at least around a thousand generations. To the contrary, a lack of sexual isolation allows the first “theological” human(s) to grow in number, through reproduction with hominins. According to Kemp, this assumption makes the monogenetic scenario plausible.

Note that Kemp speaks about the first human being(s) as “being given a rational soul.” On another occasion he uses the category of “infusion” or “infusionism” (Kemp 2023, pp. 33–34). This formulation supports, in my opinion, a dualistic notion of human soul as added to human body—an imprecise and confusing terminology that, regrettably, is still prevalent in Catholic philosophical and theological anthropology. That Kemp favors this articulation of the final step of human speciation becomes clear from an alternative version of Alexander's scenario that he proposes. Alexander saw the final step towards rationality in a particular and crucial genetic mutation, which nonetheless did not establish biological barriers to reproduction (i.e., did not give an origin to a new biological species).<sup>16</sup> He speculated that the new trait it introduced would manifest in the phenotype of the offspring, born as the first representative(s) of *Homo sapiens*, descending from an organism whose genome was changed. If the gene carrying the new trait were dominant, the trait would spread quickly.<sup>17</sup>

Kemp thinks Alexander's idea of the “crucial mutation” is misplaced as it would have to spontaneously affect two organisms, male and female. However, it remains unclear to me (1) why he presupposes that the mutation in the organism of one parent would not have been sufficient, and (2) why the same mutation could not occur in two organisms (today we know that many mutations are very specific, targeting precise loci in particular parts of genomes). Nevertheless, having criticized Alexander's position, Kemp offers a new variant of the same view:

There is an alternative use of Alexander’s distinction which does the work of reconciliation without entailing the problems that his view faces. That account can begin with a population of about 5000 hominids, beings which are in many respects like human beings, but which lack the capacity for intellectual thought. Out of this population, God selects two and endows them with intellects by creating for them rational souls, giving them at the same time those preternatural gifts the possession of which constitutes original justice. Only beings with rational souls (with or without the preternatural gifts) are truly human. The first two theologically human beings misuse their free will, however, by choosing to commit a (the original) sin, thereby losing the preternatural gifts, though not the offer of divine friendship by virtue of which they remain theologically (not just philosophically) distinct from their merely biologically human ancestors and cousins (Kemp 2011, pp. 231–32).

In his more recent publication, Kemp once again delineates his position as follows:

Stage 1—The Foundation: The evolutionary emergence of a biological species having perceptual powers sufficiently complex to *allow* the infusion of a created human (rational) soul, but able to live an ordinary animal life (with perceptions and emotions, but no intellect) without it. This I will call merely biological man.

Stage 2—Anthropogenesis: Divine creation of rational souls and their infusion into exactly two of those merely biologically human beings, without thereby affecting their interfertility with the rest of the biological species. This produced beings that are philosophically human because they are rational beings, and theologically human because they are, in a conceptually distinguishable sense, beneficiaries of God’s special grace. They are, that is to say, fully human beings.

Stage 3—Succeeding Generations: (1) A certain amount of interbreeding between the fully human beings and their merely biologically human “cousins,” and (2) infusion of rational souls into all (or at least most) of the beings that have even one fully human parent, so that, within a few centuries, the entire biological population will, as a matter of practical, if not mathematical, certainty, be fully human.

The resultant population will be biologically (genetically) polygenetic (because there was never a population bottleneck of just two individuals) but theologically (or, genealogically) monogenetic (in the sense that all of the fully human beings who ever lived will be genealogically descended, though not exclusively, from one single first human couple) (Kemp 2023, p. 33).<sup>18</sup>

The scenario proposed by Kemp finds further grounding in the evidence of early *Homo sapiens* being able to interbreed with Neanderthals and Denisovans. As notes Austriaco:

This replacement [of Neanderthals in Europe and western Asia as well as other more ancient human-like species] was accompanied by interbreeding among these human-like species such that all non-African populations today inherited roughly 1.5–4 percent of their genomes from their Neanderthal ancestors, and all Melanesians today inherited between 1.9–3.4 percent of their genome from another extinct species of archaic humans called Denisovans. Clearly, our history as a biological species is shaped by migration, interbreeding, and unrelenting adaptation that has generated much diversity within the human population (Austriaco 2018, p. 345).<sup>19</sup>

## 6. Critical Evaluation of Kemp’s Position

The model developed by Kemp is perceived by many as a viable and consistent version of monogenetic anthropogenesis that remains in line with the most recent paleoanthropology and human genetics. While sharing this opinion, I would like to raise some critical



questions and offer some suggestions that are grounded in the Aristotelian–Thomistic framework of philosophy and theology.

What seems to be crucial in Kemp’s scenario is that God arbitrarily and without reference to any biological change selects two hominins and “endows them with intellects by creating for them rational souls.” Moreover, he also endows them with gifts that constitute original justice (Kemp does not specify them, but he most likely means supernatural grace and praeternatural gifts). I claim that this proposition, correct in its basic presuppositions, is nonetheless: (1) voluntaristic—as it depends on God’s arbitrary decision without a particular natural condition that enables the final step of hominization to occur, (2) dualistic—since human souls are added to otherwise almost rational human beings, which is not acceptable from the Aristotelian–Thomistic point of view, and (3) metaphysically dubious—as it suggests a very unusual case of substantial change of an already existing (biologically) human organism into a different living being that belongs to a new natural kind *Homo sapiens* (theological human)—without considerable changes in its physical dispositions (the soul of a hominin is “replaced” by the soul of the first representative of *Homo sapiens*).

My impression is that, concerning (2) and (3), Kemp’s position is not so much in a direct opposition to the classical thought but rather suffers from a lack of terminological precision. While in his most recent article he once again speaks about the “infusion [of human souls] into exactly two of . . . merely biologically human beings” (Kemp 2023, p. 33), he would most likely agree that, technically (metaphysically) speaking, the first human soul(s) actualized properly disposed primary matter in the substantial change that accompanied (or simply can be identified with) fertilization. Hence, the final step of human speciation did not involve an unusual (and metaphysically dubious) substantial change. Rather—from a biological point of view—it came as an unusual effect of a regular process of generation (and substantial change that accompanies it).

However, my criticism raised under (1) is more problematic as it seems to question the core of Kemp’s proposal. Divine voluntarism, typical of William of Ockham and some strains of post-Reformation theology, is rather foreign to the Thomistic understanding of divine action. According to this tradition, God’s agency takes into account the nature of things, and works through them as secondary and instrumental causes.

Hence, I consider it crucial to assume that God’s direct creation of the first human soul(s), corresponded to the proper disposition of primary matter within the complex process of speciation, as well as the procreative action of hominins, which enabled their gametes to meet and merge in fertilization. The latter, being a substantial change that gave origin to the first modern human being(s), was possible—once again—because of some decisive natural change in the biological material that prepared (disposed) it, and the primary matter that underlaid it, to enter such a change. Consequently, in trying to distance my own position on this matter from both occasionalism and deism, as well as divine voluntarism, I am inclined to follow Alexander’s position, which seems to go along with the model of human speciation that I offer in (Tabaczek 2019) and further develop in (Tabaczek 2023).<sup>20</sup>

There is one more issue that needs consideration in reference to the contemporary monogenetic account of anthropogenesis. Even if we assume that the first rational human being(s) was(were) able to procreate with nonrational—yet biologically human—beings, producing new representatives of *Homo sapiens*, we still face the difficulty of the extremely low probability of a new species of “theological humans” beginning from just one or two organisms (a challenge similar to the one that refers to the classical version of the monogenetic scenario). In other words, the first exemplar(s) of “theological humans” was(were) also a biological organism(s) that had to survive and achieve reproductive success. Here the possibility to interbreed with hominins might not have been enough. There must have been something—be it a psychological, mental, or a spiritual feature—that helped them succeed while various other species of hominins went into extinction.

One could speculate that the crucial change which completed hominization—even if physiologically and phenotypically insignificant—gave the first rational human being, or

a pair of the first rational human beings, a significant advantage and tools—most likely intellectual dispositions—that enabled them to enhance their perception of reality. Another possible explanation refers to the praeternatural gifts bestowed by God on the first human being(s). In any case, whatever the nature of the advantageous feature(s) characterizing the first human beings, it(they) must have provided them with considerable superiority and prevalence, possibly a strong supremacy over the entire population, which helped them to survive and grow in number. They would have then achieved evolutionary success descending from just one organism or one pair of parental organisms—something that according to population genetics is on the verge of being impossible.

Those who do not find this argument convincing might suggest that, at the end of the day, the monogenetic scenario of hominization seems to require a direct divine intervention, not only in creating human souls specifically for only one or two first human beings, but also in providing for their reproductive success. This scenario might be considered plausible and need not stand in opposition to science. God is omnipotent and he might have directly intervened in this particular and unique evolutionary transition. At the same time, the argument emphasizing the dignity of natural causes and the notion of God's primary and principal action in nature through secondary and instrumental causation of his creatures (mentioned above) might speak against it. The debate between the two positions continues.

## 7. Conclusions

The arguments in support of monogenism and the contemporary version of this position—developed by Muller, Alexander, and Kemp—face a number of meaningful and quite appealing counterarguments on the side of the advocates of polygenism. In their scriptural analysis, they tend to concentrate on (1) the meaning of the Hebrew *ādām* in Genesis, (2) theological repercussions of the account of Genesis 3 speaking about the fellowship of Eve and Adam in their rejection of God's gift of sanctifying grace, and (3) the importance of the correct translation of Romans 5:12 for an accurate understanding of Paul's analogy between one Adam and one Christ.

On the side of the dogmatic teaching of the Church, they spend a considerable amount of time arguing that Pius XII's opinion shared in his *Humani generis* (Pius XII 1950, p. 37) leaves the debate on mono- versus polygenism open. They claim their position on this point finds support in another Church document issued by the International Theological Commission in 2004, entitled *Communion and Stewardship*, where we read:

While the story of human origins is complex and subject to revision, physical anthropology and molecular biology combine to make a convincing case for the origin of the human species in Africa about 150,000 years ago in a humanoid population of common genetic lineage. . . . Catholic theology affirms that the emergence of the first members of the human species (whether as individuals or in populations) represents an event that is not susceptible of a purely natural explanation and which can appropriately be attributed to divine intervention (International Theological Commission 2004, no. 63, 70).

I discuss these and other arguments in favor of polygenism in my upcoming monograph (Tabaczek 2023, chapter 8). Whether these arguments will find wider support and approval is not clear yet. The research of the theological literature on anthropogenesis suggests that while polygenism is conditionally tolerated, monogenism remains still a preferred opinion among Catholic thinkers. Hence, the debate continues. I hope that the critical evaluation of the contemporary, scientifically informed version of monogenism—offered in this article—brings a meaningful contribution to this conversation.

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## Notes

- 1 The first version of this article was presented at the conference *The Origin of Life and Nature Before Sin: Scientific and Theological Perspectives* organized by the Thomistic Institute (Project for Science and Religion) at the Pontifical University of Saint Thomas Aquinas in Rome (1–2 April of 2022). An extended version of the text presented here will be published as part of the last chapter in my upcoming monograph (Tabaczek 2023). My research benefited greatly from a number of important publications, including: Hofmann (2020), Hofmann (2021), Kemp (2020), and Flaman (2016). I am especially indebted to all three authors.
- 2 Some would even go as far as to disunite the species of distinguishable human races to no longer be compelled to submit to any principle of unity whatsoever. They saw the race of slaves as inferior by its very nature to the race of masters and therefore, justified the enslavement of the inferior race as some sort of an edict of the natural law. It is to these ideologically determined ideas that the terms “polygenism” and “monogenism” first came to be applied by the Harvard professor Louis Agassiz in the 1840s, and Samuel A. Cartwright and Georges Gliddon in the 1850s. In the modern debate, they are distinguished as “racial polygenism” and “racial monogenism.” More information on this topic can be found in Haller (1971), Gould (1996), and Livingstone (2011).
- 3 Historians of science note that polygenism was expressed already in 1655 by Isaac de la Peyrère, who suggested that this theory of origin (he called it “Pre-Adamitism”) was necessary to explain the existence of remote families of humans (e.g., Greenlanders). His book was translated into English in 1656. For references see Kemp (2023, pp. 29–30, 42).
- 4 This position was held already by Darwin who, in his book on anthropogenesis, claims that “when the principles of evolution are generally accepted, as they surely will be before long, the dispute between the monogenists and the polygenists will die a silent and unobserved death” (Darwin 1871, p. 235). Concerning monophyletism we find him saying that there is “no doubt that all the races of man are descended from a single primitive stock” (ibid., p. 229). Although it was initially opposed by Vogt and Haeckel, his view on this issue became prevalent at the beginning of the twentieth century.
- 5 Concerning more recent scientifically informed theological defenses of biblical monogenism, see Craig (2021) and Swamidass (2019). The former, in reference to paleoneurology and archaeology, makes a cumulative case to classify our species within the larger human family that includes Neanderthals and Denisovans and argues that the “historical Adam” is to be located around 500,000 or more years ago within *homo heidelbergensis*, the hominin population ancestral to Neanderthals, Denisovans and *homo sapiens*. The latter suggests that Adam and Eve were a fresh creation by God some few thousand years ago who then interbred with an already existing population of hominins, leading eventually to the descent of every individual in the global population from this single couple.
- 6 “[T]he Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter—for the Catholic faith obliges us to hold that souls are immediately created by God” (Pius XII 1950, no. 36).
- 7 Hans Madueme acknowledges that scientific data in neuroscience, evolutionary psychology, and behavioral genetics have “the cumulative effect of casting doubt on traditional formulations of original sin.” Following an early voice in this debate, coming from Frederick Robert Tennant (1908, pp. 78–115), he adds that “Evolution offers the ingredients or ‘material’ of sin (e.g., fear, anger, emotion, appetite), but these are morally neutral as they are part of common human nature. They become sin when our individual free will acts on that inert material” (Madueme 2014, pp. 226–27, 229).
- 8 The draft version of the canon condemning polygenism prepared for Vatican I stated: “Si quis universum genus humanum ab uno protoparente ortum esse negaverit: anathema sit” (“If anybody denies that the whole human race is descended from one first ancestor, let him be anathema”). The canon has never been promulgated (I quote its formulation after Schoonenberg 1965, p. 175).
- 9 Attempts at developing an interpretation of the dogma on original sin that is more attentive to the knowledge coming from contemporary science in general, and the theory of evolution in particular, are numerous. The majority of them lean towards various versions of a polygenetic model of human speciation. A detailed analysis of the challenges posed by evolutionary theory to the theological account of original sin (both *peccatum originale originans* and *peccatum originale originatum*) goes beyond the scope of this paper. The relevant literature of this subject includes: (Tennant 1908; Schoonenberg 1965; Rahner 1967; de Chardin 1969; Haag 1973; Vanneste 1976; McDermott 1977; Duffy 1988; Henrici 1991; Wiedenhofer 1991; Connor 1968; Zimmerman 1998; Schwager 2006; Berry and Noble 2009; Pendergast 2009; Fitzpatrick 2012; Halloran 2012; Madueme 2014; Flaman 2016; Suarez 2016; Wilcox 2016; Cavanaugh and Smith 2017).
- 10 Paul VI is naturally referring back to the canons on original sin from the Council of Trent, which introduced the phrase “by propagation, not by imitation.” It is worth noting that it goes back to Augustine and his anti-Pelagian stance. Moreover, the term “propagation” is not specified, which—according to the proponents of polygenism—leaves us freedom to develop its socio-cultural rather than strictly biological interpretation.
- 11 Young earth creationists developed a considerable number of materials on this topic. To give an example, Carl Wieland, who is the founding editor of *Creation* magazine and one of the pioneers of the modern creation movement in Australia, states that,

“Creationists have enthusiastically welcomed the ‘mitochondrial Eve’ hypothesis (i.e., that all modern humans can be traced back to one woman) because it clearly supports biblical history and contradicts evolutionary scenarios” (Wieland 2006). He develops his theory in Wieland (1998) and defends it against evolutionary data that suggests that mitochondrial Eve lived much earlier than 6500 years ago (Wieland 2006). A Christian apologist and chemist by training, John Oakes, sees the argument based on the notion of mitochondrial Eve as a proof for the reality of the biblical flood: “If we assume that two of each unclean animal was on the ark and that these were literally the only survivors of the flood, then the mDNA of all the subsequent animals came from a single female” (Oakes 2007).

- 12 Swamidass agrees with Venema and states “Does the evidence of Mt-eve demonstrate that the total population of our ancestors dipped to a single couple? Some think the answer is yes, but this is not true. Even in a large population, an Mt-eve is *expected* to appear ... We *expect* Mt-eve to arise, even if our ancestral population never drops in size. . . . Is Mt-eve unique, the only ‘mother of all mothers’? Some think the answer is yes, but this is not true. She is not unique. Mt-eve’s mother and maternal grandmother, for example, are also universal ancestors in the same way she is. Mt-eve is only the most recent of a long lineage of women that are also ‘mother of all mothers’” (Swamidass 2019, p. 37). See also *ibid.* 36–40; Dawkins (1995, pp. 44–57). One could argue that yet another scientifically grounded argument in favor of monogenism comes from Niels Eldredge and Stephen Jay Gould’s theory of punctuated equilibrium (Eldredge and Gould 1972). However, geologically rapid events of branching speciation (cladogenesis) that brake long periods of little morphological change (*stasis*)—assumed by this theory—are still considerably extended in time, which might not support all presuppositions of the monogenetic scenario of anthropogenesis.
- 13 The theological argument in question is often grounded in Aquinas who states that “God’s immediate provision over everything does not exclude the action of secondary causes; which are the executors of His order” (Aquinas 1946, ST I, 22, 3, ad 2) and adds that “[God] governs things inferior by superior, not on account of any defect in His power, but by reason of the abundance of His goodness; so that the dignity of causality is imparted even to creatures” (Aquinas 1946, ST I, 22, 3, co.). See also (Aquinas 1946, ST I, 19, 6, ad 3; I, 19, 8, co.; I, 23, 5, co.; I, 105, 5, ad 2; I-II, 10, 4, ad 2; Gilson 1956, pp. 176, 182–84; te Velde 1995, pp. 170–75).
- 14 The contemporary version of monogenism discussed in this and the following section offers a possible logical explanation which requires further development, critical evaluation, and confirmation coming from natural science.
- 15 Similar to Kemp’s is the view shared by Flaman (2016, pp. 573–5) and Austriaco (2016, pp. 171–75). Other positions that support various versions of monogenism within broader polygenetic framework are discussed in Flaman 2016.
- 16 It is important to remember that Alexander seems to speak about the last step of an evolutionary transition, which might include only one mutation while being preceded by numerous genetic changes at the former stages of the same process. The question concerning the number of mutations necessary for speciation is continually debated. On the one extreme we find those who claim that even one mutation can be sufficient (see, e.g., Orr 1991, pp. 764–69). A more prevalent view suggests that speciation in more complex plants and animals involves differentiation across many genetic regions (see, e.g., Nosil et al. 2021, pp. 777–79).
- 17 Benedict Ashley proposes a similar hypothesis. He claims that “In current evolutionary theory, it is not individuals but populations which evolve from one species to another” and considers truly human intelligence to be a unitary, “all or none”, trait. He speculates about how this could have come into a population by a mutation in a subhuman individual who then had a child that was the first human being. This human interbred with other members of the population, producing more human children. Ashley speculates that “the origin of that final genetic trait responsible to produce a human brain capable of functioning at the human level depended on the mutation of one dominant gene that occurred in the germ-cells of a primate ancestor, which was not itself human but which then bred with another primate of its own kind to produce a male and female child who were genotypically the first human beings having fully human brains, and who by interbreeding became the ancestors of the entire human race. Either this or the former explanation is consistent with the interpretation of *Genesis* which is not concerned with the exact way in which the human species came into existence and began as a single interbreeding and intercommunicating species to have a history determined by a primordial act of human choice [i.e., original sin]” (Ashley 1985, p. 377). Flaman classifies Ashley’s position as punctiliar monogenism occurring within a gradual polygenism.
- 18 Note that Kemp departs not only from Alexander, but also from Muller who claimed that most likely “biological” and, certainly, “philosophical humans” (to use Kemp’s categories) would already have had human souls, yet not elevated by the gift of the sanctifying grace (which would leave them in the state of mortality). In Kemp’s account, “truly” human, i.e., immortal souls, are created and bestowed on selected hominins. Matthew Ramage notes that Kemp’s position finds support in the thought of young Ratzinger who had already stated in 1964 that “[E]ven if it is highly probable that hominization occurred within a biological population in a polygenic manner, it is possible that the brilliant flash of transcendence occurred for the first time in one or two individuals. Biological polygenism and theological monogenism are therefore not necessarily mutually exclusive antitheses, because the level of their questions does not fully coincide. ... [I]t is clear that biological polygenism is largely a theologically neutral theme because it does not overlap directly with the theological poly- or monogenism” (Ratzinger 1964, p. 194; quotation after Ramage 2022, pp. 190–91, note 76). More recently, Kemp’s proposal is followed by Lombardo. Having rejected strict monogenism, he states: “Since new genetic traits do not usually appear in more than one individual in the same place at the same time, the genetic traits necessary for ensoulment probably appear in a single individual and then spread by reproduction. (It is theoretically possible that the genetic traits could have appeared in two or more individuals at the same time by purely natural processes. Statistically, however, such an occurrence would have been extremely improbable)” (Lombardo 2018, p. 526).

- <sup>19</sup> Moreover, states Ramage, “there is now strong evidence that these other two archaic humans [Neanderthals and Denisovans] were rational and that bona fide intelligence dates as far back as two million years ago with *Homo erectus*, for this species made sophisticated stone tools and possibly also possessed a capacity for symbolic thought and language that enabled its members to sail across large bodies of water” (Ramage 2022, p. 188). Kemp suggests that already *Homo heidelbergensis* (a common ancestor of Neanderthals and *Homo sapiens*) might have been rational. He says our classification depends on the definition of the species we accept and concludes stating that “The *homo factus est* of the Nicene Creed refers to the natural species, rational animals; any attempt to restrict it to *H. sapiens* as currently defined would be anachronistic” (Kemp 2023, p. 38).
- <sup>20</sup> My view finds support in the—somewhat more dualistic—account of evolutionary anthropogenesis proposed by Nicholas Lombardo: “[If we] hold that the human body is intrinsically oriented toward the human soul and vice versa, it follows that the bodies of the first humans must have been different from the bodies of their nonhuman ancestors. The bodies of the first humans could not have been identical to the bodies of their immediate ancestors. There must have been something about their bodies fitted to their souls. And if there was something about their bodies fitted to their souls, there must have been something new and different about their genetic traits. If we accept this conclusion—if we accept the idea that the human body and the human soul are intrinsically fitted to each other, and that this intrinsic orientation implies that human bodies are different from all nonhuman bodies—then we must also conclude that the genomes of the first humans were different from the genomes of their immediate ancestors” (Lombardo 2018, p. 525).

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