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Human Origins Revisited: On the Recognition of Rationality and the Antiquity of the Human Race

Historical background

Since its inception, the Church maintained that the human species began to exist as a single couple, Adam and Eve, who were created directly by God—Adam from the dust of the earth and Eve from Adam's side. This early Christian teaching contains two important truths. Firstly, it affirms that the Genesis account of man's creation is the literal and historical account of human origins, and not simply a metaphor or figure of speech. Secondly, it shows that despite different interpretations of Genesis 1–3, the understanding of how humans originated was completely uniform among orthodox authors.[1]

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[1] For evidence to support this claim, see Michael Chaberek, *Catholicism and Evolution: A History from Darwin to Pope Francis*, (Kettering, OH: Angelico Press, 2015), Appendix.

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This view was challenged in 1859, when Charles Darwin published his theory on the natural origin of species through random variation and natural selection. Due to the explicit tension between the two accounts of human origins, some Catholic scholars started to wonder how any evolutionary theory could be harmonized with the Christian doctrine of Creation. The first Catholic books incorporating evolution into Catholicism were published as early as the 1870s. However, the official position of the Magisterium maintained, at least implicitly, the "special creation"[2] of man, according to both soul and body, until the Encyclical *Humani Generis* by Pius XII (1950).[3] Pius XII however, did not resolve the issue, but merely allowed that discussions on the origin of the human body took place, while reaffirming the direct creation of the human soul. Moreover, Pius XII emphasized that both sides of the debate should be heard, that nobody should claim that the evolution of the human body from the lower "living matter" had been proven, and he also forbade the teaching of polygenism.[4]

The 1950 Encyclical has impacted theology in two major ways. Firstly, the permission to discuss the evolutionary origin of the body implied that the special creation of the human body was no longer held

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[2] By "special creation" (Lat. *peculiaris creatio*), we mean the supernatural divine work without the use of active secondary causes.

[3] The Synod of Cologne (1860) condemned the possibility of an evolutionary origin of the human body and confirmed the immediate creation by God (Cf. *Acta et decreta Concilii Provinciae Coloniensis*, Coloniae: 1862, 30). The 1880 encyclical *Arcanum* by Leo XIII confirmed the creation of Adam from the dust of the earth and the miraculous formation of Eve from his side (Leo XIII, "Arcanum divinae sapientiae," in *Acta Sanctae Sedis*, 12 (1879), reprint 1968, 386). The Pontifical Biblical Commission's document from 1909 confirmed that "the special creation of Adam" and "the formation of the first woman from the first man" described in the Genesis account of creation should be understood literally and historically. Works by several Catholic authors who proposed some forms of theistic evolution (e.g., Dalmase Leroy, Raffaello Caverni) were placed on the Index of Forbidden Books.

[4] Pius XII, "Humani Generis," in *Acta Apostolicae Sedis*, 42(1950), 576–577.

as the ordinary Catholic teaching, but just an alternative hypothesis to be weighed against the evolutionary hypotheses. Secondly, the pope's prohibition of polygenism was tied to the difficulty in explaining how original sin could have been spread through the human population if polygenism were true. Therefore, an influential group of theologians took the prohibition as an invitation to investigate ways in which polygenism could be harmonized with the doctrine of original sin. In the years that followed, the theological and philosophical underpinnings of the special creation of the human body were eventually forgotten or ignored and the entire debate on human origins shifted towards new theories of original sin, especially its ways of spreading through the human population.[5]

Because the current debate on original sin assumes scientific consensus about polygenism, which in turn is derived from the evolutionary account of human origins, we are not going to discuss these issues here. Rather, we would like to take a step back and ask whether there is sufficient evidence supporting an evolutionary origin of man to justify its accommodation within Catholic theology. Therefore, this paper will resume the intense and unresolved debate on evolution that occurred during the period between the publication of Darwin's *Origin of Species* (1859) and Pius XII's *Humani Generis* (1950).

According to Kenneth W. Kemp, the post-Darwinian theories of anthropogenesis fall into three categories.[6] The first comprises hypotheses claiming that "evolutionary processes are sufficient to account for the origin of the human race."[7] These were advanced by the so-called "agnostics" such as Charles Darwin, Robert Chambers, and Thomas H. Huxley, or by materialistic monists such as Ernst Haeckel. Leaving

[5] Cf. James R. Hofmann, "Catholicism and Evolution: Polygenism and Original Sin (Part II)," *Scientia et Fides* 9 (1) 2021, 63–129.

[6] Kenneth W. Kemp, "God, Evolution and the Body of Adam," *Scientia et Fides*, 8 (2) 2020, 139–172.

[7] Kemp, "God, Evolution," 148.

aside some differences in detail, these hypotheses claimed that the animal body, once adequately transformed by evolution into the human form, becomes man. The soul is not considered in this view, because the intellectual capacity is entirely dependent on the complexity of its organs (e.g., brain). At higher levels of organic composition, the organ "automatically" (i.e., by the sheer fact of its increased complexity) acquires human faculties, such as reasoning, and an animal is thus transformed into a human.

The second category of transformism was advanced by Catholic biologists such as Filippo de Filippi and St. George J. Mivart. These scholars claimed that an animal body evolved until it was capable of receiving the human soul and, once it reached the level of adequate organization, God created the human soul which He infused into the body.[8] In this view therefore, while the human body evolved naturally, the human soul was created directly.

Theories within the third category of transformism assume that "the human body is partially, but only partially, the product of evolutionary processes."[9] Kemp recognizes as the proponents of this view Alfred R. Wallace (known for his version of "theistic evolution" as opposed to "Darwinian evolution") and Cardinal Zeferino González. According to these authors, the evolutionary process was insufficient to fully dispose the animal body to receive the human soul, so God transformed the animal body into a "fully human" body at the moment He infused the human soul. In Ernst Messenger's version of the argument, the human body could not have evolved naturally, so God accelerated (presumably supernaturally) the process of evolution and, as it were, helped matter reach the disposition to receive the human soul.[10] The positions in the

[8] St. George J. Mivart, *On the Genesis of Species* (London: Macmillan 1871).

[9] Kemp, "God, Evolution," 153.

[10] Ernst C. Messenger, *Evolution and Theology: The Problem of Man's Origin* (New York: Macmillan Company, 1932), 93.

third category are essentially evolutionary, but assume some divine supernatural work in the origin of man. We will call this option "special transformism" as opposed to "special creation." In the former view, God transformed "living matter" (e.g., an ape or a "hominid") into a human being by replacing the substantial form, whereas in the latter view, God transformed "non-living matter" (clay, dust or slime of the earth) by infusion of the directly created human soul which became the substantial form of the body.[11]

To summarize: The first category of transformism denies the existence of the immaterial human soul, which contradicts Pius XII's encyclical, making it unacceptable to Catholics. The latter two categories however, are "theistic" forms of transformism which adopt some kind of "hominization" by ensoulment. Therefore, we will focus on these two latter categories and place them side by side with special creation, which we will refer to as the "traditional view."

Both evolutionary views assume that human beings are connected to non-human (or sub-human) beings by a line of descent (continual biological generation). The usual view among evolutionists is that evolution proceeds gradually, so we should find many intermediate forms between different species ("Natura non facit saltum" was Darwin's motto). Consequently, evolutionary theories tend to diminish the taxonomical gap between humans and animals and propose many fossils of so-called "intermediate species," whose existence in the past is more or less supported by paleontological evidence.[12] The traditional view, on the other

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[11] Strictly speaking, special creation as described in Genesis is a type of special transformism. However, the essential difference between special transformism and special creation is that in the former case there is a biological continuity of generation from non-human to human beings while in the latter the human being is created *de novo*. This difference has important theological and philosophical consequences that we will not discuss here.

[12] It is important to mention that some modern authors have emphasized that the evolutionary process is not necessarily gradual and can produce big changes such as

hand, favors the existence of an ontological chasm between humans and other animals. This conclusion follows from the text in Genesis 2 and from the metaphysical conviction that the rational soul is the substantial form of the body, making human a complete, original and separate nature. In what follows, we will point out a few problems with the theistic types of evolution as proposed by Catholic authors after Darwin.

The "catch 22" problem of hominization

Leaving aside their differences, all evolutionary theories assume that man emerged through the process of gradual transformations from previous animal species. This transition would entail the loss of many adaptive features present in apes e.g., thicker fur, higher strength, and limbs highly adapted to tree climbing. This is problematic because, according to the very logic of evolutionary theory, new variations are selected only when they are adaptive i.e., confer a survival or reproductive advantage. The human body, however, has the sort of characteristics we would not expect to be favored by selection. For example, human bipedalism makes our upper limbs almost useless during normal locomotion which translates into relatively slow or inefficient mobility.[13] Our body also lacks claws, fur, horns, or any natural weaponry, but rather possesses thin and fragile skin, and fingers that are too weak to efficiently climb trees. Despite these limitations, man is able to fly high-

chromosome and genome duplications. However, these proposed genetic mechanisms should not be sufficient to modify an ape into a human in a single step or a few steps, given the morphological disparities between the two, which will be discussed below. See Eugene V. Koonin, "The Origin at 150: is a new evolutionary synthesis in sight?" *Trends Genet*. November 2009, 25(11), 473–475.

[13] Some studies claim human superiority over quadrupeds in that the energetic efficiency of human walk matches or even excels that of animals. But these studies fail to

er and faster than any bird, swim deeper and faster than any fish, and kill predators despite their physical superiority. Although we lack fur, we produce clothes allowing the colonization of a much broader spectrum of climates than most animals could ever adapt to. We lack claws, but we produce spears, arrows, and knives to protect ourselves and hunt other animals. These behaviors and achievements are possible because man has an intellect that enables him to produce tools, which make up for the apparent "deficiencies" in his bodily constitution.

In the evolutionary scenario, therefore, we encounter a problem—which comes first? The human body, or the human soul? A body with human characteristics could not have evolved first, because it would have required the human soul to compensate for its weaknesses. But the human soul could not have been infused into a non-human body either, because the human soul is the substantial form of the human body. The first scenario is contrary to the assumptions of evolutionary theory, while the second is contrary to classic metaphysics.[14] We call this contradiction the "catch 22" problem of hominization, implying that the human body and soul had to be created at the same time.

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mention that the energetically efficient mode of human locomotion is also very slow (compared to other animals). We can see this disadvantage in an experience from daily life—it is hard for a human to catch up with even much smaller and lighter animals such as cats and dogs, not to mention cheetahs. But in a survival context, speed is everything. Humans also have another mode of locomotion which is running. Running adds to speed, but the energetic efficiency dramatically drops (27% below a mammal of comparable size). Consequently, human bipedalism is efficient only when walking, which is too slow to give any survival advantage, while it is dramatically inefficient during running and still too slow to escape most natural enemies. Cf. Erin Wayman, "Energy Efficiency Doesn't Explain Human Walking?" *Smithsonian Magazine*, September 17, 2012, https://www.smithsonianmag.com/science-nature/energy-efficiency-doesnt-explain-human-walking-39161215/ (accessed Feb. 15, 2022).

[14] By classic metaphysics we understand Aristotelian-Thomistic principles of being. For a proper exposition, see *The human soul is the substantial form of the body below*.

One could think of a few ways of theoretically resolving this problem. It could be said that the loss of adaptive features in ape populations could have come about by very gradual changes, each one being either neutral or only slightly harmful to fitness. While we can conceive that some harmful variations could have escaped selection being fixed by genetic drift, this would be unlikely over a long process requiring a vast number of changes building upon the previous changes. Therefore, the idea of an ape's body losing specific animal traits and acquiring the "universality" typical of humans is contrary to assumptions underpinning the theory of biological macroevolution.

Another hypothetical solution would be to propose that God infused the human soul into an animal body. If that was the case, human beings now possessing an intellect would have been able to produce tools which would compensate for future losses in natural weaponry thus allowing the body to accommodate itself to the rational soul. One could argue that these losses would have been adaptive in the same way that the loss of eyes in some fish inhabiting caves, or the loss of flight in insects inhabiting remote islands, is said to be adaptive by reducing energy consumption.[15] The problem with this solution is its incompatibility with classic metaphysics—the human soul cannot animate the non-human body, because the matter of the non-human body is not disposed to receive the human soul.

Still another possible attempt to resolve the problem (outside of the traditional doctrine) is to propose that an irrational animal was instantaneously transformed by God into the first man. This option is metaphysically acceptable, because when God produces a new substantial form in matter, He also produces the disposition in matter for the adop-

[15] Daphne Soares, Matthew L. Niemiller, "Extreme Adaptation in Caves," *The Anatomical Record*, 2018(303), 15–23. https://doi.org/10.1002/ar.24044 and Leihy Rachel I. and Chown Steven L. (2020), *Wind plays a major but not exclusive role in the prevalence of insect flight loss on remote islands*. Proc. R. Soc. B.287: 20202121. https://doi. org/10.1098/rspb.2020.2121.

tion of that particular form.[16] By this kind of action, God can instantaneously transform a fork into a knife or water into wine.[17] This concept is nominally identical to special transformism, but it differs from the scenario proposed by early Catholic evolutionists in an important way: There would be no room for the intermediate forms between apes and humans (the so-called "hominids"). Consequently, the act of hominization would be clearly detectable on the empirical level. There would be a time and a place when one individual of a given species (e.g., ape) would be miraculously transformed into the first man. This is the only biologically and metaphysically acceptable position that avoids the "catch 22" indicated above.

However, the problem with this type of special transformism is that it postulates not just an "ontological" but also a "physical leap" in the evolutionary process, meaning that the physical continuity (the basic assumption of scientific evolutionary theories) would be broken.[18] For this reason, this theory cannot be deemed evolutionary in any relevant sense. If anything, it is closer to the idea of special creation but in

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[16] According to St. Thomas Aquinas: "Between the operation of a creature and that of God there is this difference, that, to bring about an effect, God's activity does not need matter or any material disposition, for by his activity he produces not only the form but also the matter. However, he does not make the form without matter or without a disposition, but he can make matter and form together in one operation, or he can transform the matter, however unfit, to the proper disposition which is needed for the perfection which he gives" *De Veritate*, q.12, a.4, co. "God, though he is absolutely immaterial, can alone by his own power produce matter by creation: wherefore he alone can produce a form in matter, without the aid of any preceding material form." Thomas Aquinas, *Summa Theologiae*. I, 91, 2 co.

[17] To be precise, transformation of water into wine or one thing into another is just changing an individual of one species into an individual of another species. Whereas creation is not just a transformation, but also the coming to be of a new species, a new nature, in this case the human nature, that is exemplified by the first man. In this sense, the power of transformation is a necessary but not a sufficient condition for the creation of a new species.

[18] In his 1996 *Address to the Pontifical Academy of Sciences* (no. 6), John Paul II distinguishes an *ontological leap* that happens in the transition from non-human to human

which God, instead of dust (Gen 2:7, Gen 2:19), utilized a body of another animal to create a human being. This entails a twofold problem: on the one hand, special transformism strays from the biological theory of macroevolution, and on the other it raises theological objections: Why would anyone favor "living matter" over "non-living matter" as the substrate for divine creation if the Bible consistently refers to the latter?

Thus, the only metaphysically acceptable solution (apart from special creation) is not compatible with evolutionary theories proposed in biology. For these and other reasons, this kind of special transformism has not been advocated by Catholic evolutionists.

Some recent attempts to resolve the problem of hominization

In this section, we will present three groups of theories on the evolutionary origin of humanity as proposed by Catholic scholars after Pius XII's encyclical *Humani Generis*. It does not follow that these views are unique to these individuals or that they were the first to propose them. Rather, the origin of these ideas can be traced back to the series of publications on polygenism during the 1960s.

(1) Andrew Alexander speculated that the transition from the non-human to the human physical body happened when a key mutation

from a physical continuity that is preserved by the evolutionary process. Special transformism excludes this kind of scenario, because the "ontological leap" caused by the ensoulment must entail a "physical leap", i.e., a change in the disposition of matter. See: John Paul II, "Address to the Plenary Session on 'The Origins and Early Evolution of Life' (22 October 1996)," *Papal Addresses to The Pontifical Academy of Sciences 1917–2002 and to The Pontifical Academy of Social Sciences 1994–2002*, (Vatican City: The Pontifical Academy of Sciences, 2003), 370–374, 373.

occurred in one individual.[19] This physical change made Adam suitable for hominization by ensoulment and then (owing to the transmission of the mutation to posterity) his descendants remained human thanks to the introduction of souls by God into each individual.[20] Recently William L. Craig revived this idea by postulating that the first human being was *Homo heidelbergensis* due to a "regulatory mutation," perhaps "divinely caused," that effected a change in brain functioning.[21] In Craig's account, humans emerged through the physical development of their bodies (primarily brains) which correlated with the increase in their cognitive capacity.

The advocates of this account assume that a body identical to a human one comes about by way of natural evolution. Since these scholars associate the emergence of the intellect with the development of the brain, the pre-humans are said to gradually acquire all human natural faculties (including the intellectual ones) until they become "true" humans, which happens by the divine addition of the soul.

(2) According to Kenneth W. Kemp, Alexander's association of mutation and hominization is "too close" and the mutation itself, which had to occur independently in both a male and a female about the same time, is "extremely unlikely."[22] Building on Alexander's theory, Kemp proposes that human beings evolved from a population of about 5,000 hominids which in many respects were similar to human beings, but lacked intellectual thought. Out of this population, God selected two individuals to

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[19] Andrew Alexander, "Human Origins and Genetics," *The Clergy Review*, 49 (1964): 344–353.

[20] Cf. Hofmann, "Catholicism and Evolution" 76.

[21] "One can imagine a scenario in which a regulatory mutation, perhaps divinely caused, occurs in a member or members of a population belonging to *Homo heidelbergensis*, effecting a change in the functioning of the brain that results in a significantly greater cognitive capacity." William L. Craig, *In Quest of the Historical Adam: A Biblical and Scientific Exploration*, (Grand Rapids: William B. Eerdmans Pub. Co., 2021), 337.

[22] Kenneth W. Kemp, "Science, Theology, and Monogenesis," *American Catholic Philosophical Quarterly*, Vol. 85, No. 2, 217–236, 231.

be endowed with intellects by the infusion of the human souls. Only the descendants of this primal couple would have rational souls, but they would continue to interbreed with individuals from the hominid population, until they replaced the "non-intellectual hominids."[23] Kemp does not tell us whether the endowment of the soul entailed any material transformation. However, given that (a) he sets his theory apart from Alexander's, and (b) he says hominids were "in many respects similar" to humans—meaning they were also different in many other respects—we can infer that his account would require more material transformation than just the single mutation proposed by Alexander. If our interpretation of Kemp's position is correct, his solution does not differ from special transformism as proposed by Wallace and González except in that he adopts a more modern understanding of genetics. However, in a later article Kemp modified his position to suggest that evolutionary processes can create a "level of perceptual complexity sufficient to allow the abstraction of concepts."[24] Adam, according to this account, could have emerged from an irrational animal by natural evolution with "modest divine supplementary modifications." This later, modified view, would fall into the first category (1).

(3) The third type of theories can be traced back to a very influential article (followed by a book) by Zoltán Alszeghy and Maurizio Flick published in 1966.[25] The authors proposed that humanity emerged when the natural process of evolution culminated into human-like creatures with full human capacity. The leap [orig. *salto*], specifically different from those that occurred previously in the course of evolution, only happened when God vivified man by grace.[26]

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[23] *Ibid*., 231–232.

[24] Kemp, *God, Evolution*, 168.

[25] Zoltan Alszeghy, Maurizio Flick, "Peccato Originale in Prospettiva Evoluzionistica," in *Gregorianum*, 47(1966), 201–225. Idem, *Il Peccato Originale*, Biblioteca di Teologia Contemporanea 12, (Brescia: Queriniana, 1972).

[26] Alszeghy, Flick, *Peccato Originale in Prospettiva Evoluzionistica*, 215.

Recently, Antoine Suarez proposed a similar explanation:

> God selected one couple among all the individuals of the species *Homo sapiens* and transformed them into persons [...] He bestowed the animals with spiritual powers (intellect and free will) strong enough to perfectly master their selfish Darwinian tendencies and even overcome pain and illness [...] God then continued to transform all the other living *Homo sapiens*, and from this moment bestowed each newly conceived individual with personhood.[27]

Suarez does not speak of a transition from animal to man but rather from *Homo sapiens* to person. To him, those who are the subjects of divine salvation are *Homo sapiens*, i.e., rational creatures that evolved naturally, whose spiritual powers were enhanced by God. The strengthening of those powers in the first couple was the act of granting personhood to *Homo sapiens*. After the Fall, all other *Homo sapiens* were transformed into persons in the same way. From then on, each newly conceived *Homo sapiens* was endowed with personhood.

Finally, in a 2016 paper (followed by a book), Andrew T.E. Loke proposed that hominids evolved until they became "anatomical *homo sapiens*" i.e., creatures biologically identical to man, capable of all human activities including religion, moral choice and sin.[28] What set them apart from "true human beings" is that they did not possess the "image of God" (*imago Dei*)—a feature that God chose to grant to

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[27] Antoine Suarez, "Transmission at Generation: Could Original Sin Have Happened at the Time When Homo Sapiens Already Had a Large Population Size?" *Scientia et Fides* 4 (1) 2016: 253–293, 271. Cf. idem, "Can we give up the origin of humanity from a primal couple without giving up the teaching of original sin and atonement?" in *Science and Christian Belief* (2015) 27: 59–83, 74.

[28] According to Loke: "There are evidences (*sic*) that *Homo sapiens* engaged in religious activities about 50,000 years ago, but this does not imply that they are necessarily human beings, for there is no Scriptural basis for asserting that only human beings are

Adam and Eve by which they became first "true humans."[29] However, this does not require Adam to be the first anatomical *Homo sapiens*, because anatomy is not what defines a human being.[30] According to Loke, the "image of God" is a set of faculties that includes the potential for a unique kind of dominion over, and responsibility for, other creatures, and the potential "to be made conformed to Christ."[31]

The common theme in this third category is that the threshold between non-human and human individuals is not defined by biological constitution, or even rationality, but by spiritual gifts and grace. The consequence of this approach is that if we went back in time, we would see a population of individuals who looked alike, could interbreed, performed the same rational activities, but some of them were human, while others not.

Some unresolved issues with the current theories of hominization

It is important to notice that evolutionary theories within the three categories described above still face the "catch 22" problem of hominization. After all, regardless of how and when the last leap between an irrational animal and man happened, a transition from a "more adapted" to a "less adapted" body would still be required by the evolutionary

capable of religious behavior." Andrew T. E. Loke, "Reconciling Evolution and Biblical Literalism: A Proposed Research Program," in *Theology and Science*, Vol. 14, no. 2, 160–174, 168. Cf. idem, *Evil, Sin, and Christian Theism* (Routledge, 2022).

[29] Loke, "Reconciling Evolution," 167. A similar view is supported by BioLogos: "God established a unique relationship with humanity by endowing us with his image and calling us to an elevated position within the created order. Science cannot judge our spiritual capacities or divine calling, so there is no contradiction." https://biologos.org/common-questions/how-could-humans-have-evolved-and-still-be-in-the-image-of-god.

[30] Loke, "Reconciling Evolution," 165.

[31] *Ibid*., 167.

process. In this, the modern theories do not differ from their 19th century predecessors. In the following section, we will discuss a few more general problems facing modern explanations of hominization. The first two challenges come from biology and the latter two from classic metaphysics.

"GENOCENTRISM" IS OUTDATED

What strikes us the most (especially regarding the first group) is the assumption that changes in the genome can lead to any kind of biological transformation. In the 1950s when the structure of DNA and the basic life process of gene-protein translation were discovered, it was indeed widely claimed that the "mystery of life" had been unraveled. Ever since then, research has been showing that genetic information alone is not sufficient to produce an organism. As Stephen C. Meyer puts it:

> Other sources of information must help arrange individual proteins into systems of proteins, systems of proteins into distinctive cell types, cell types into tissues, and different tissues into organs. And different organs and tissues must be arranged to form body plans.[32]

To use a computer analogy: the genome is like a database which contains information that can be used by the cell.[33] The genome does not control its own expression, nor the time in which it is expressed, nor the three-dimensional arrangement of protein structure and their interactions with other proteins and compounds. DNA is an inert molecule,

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[32] Stephen C. Meyer, *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design* (HarperOne 2013), 276–277.

[33] For very illuminating discussions on this topic see Denis Noble, *The Music of Life: Biology Beyond the Genome* (Oxford: Oxford University Press, 2008) and James Shapiro, *Evolution: A View from the 21st Century* (Chicago: Cognition Press, 2022).

which can be shown by a human embryo requiring epigenetic factors from the mother in order to initiate its development. This is also clear from the simple observation that every cell in the early stages of embryo development contains the same DNA sequence yet differentiates in a multitude of organs performing different functions. Therefore, there must be something other than DNA guiding organismal development and maintaining homeostasis in the adult state. This is one of the reasons why evolution could mutate a genome indefinitely without ever obtaining a new kind of organism.

How scientifically plausible is it, then, to believe that a genetic mutation made a hominid's brain apt to thinking or receiving the human soul? This strictly "genocentric" approach is biologically inadequate and outdated. The analogy between the "genocentrism" adopted by contemporary evolutionary theologians and the "geocentrism" of past theologians goes beyond just the similarity of names.

MATTER CANNOT EVOLVE THE INTELLECT

A largely unchallenged evolutionary assumption is that larger brains correlate with higher intelligence. For example, Craig claims that *Homo habilis* was "almost certainly not human," given its brain size of 550–687 ccm.[34] He offers many cumulative criteria for the recognition of humanity, but all of them are quantitative. The hidden assumption is that the fundamental difference between humans and irrational animals is one of degree (in intelligence, skillfulness, cultural achievements, etc.) rather than kind. Following this logic, one would predict that shorter individuals, because they typically have proportionally smaller skulls, would be on average less intelligent, but we do not see such correlation.[35] With respect to *Homo habilis*, while his cranial capacity was

[34] Craig, *In Quest of the Historical Adam*, 261.

[35] One study found a weak correlation (r=0.1 to 0.2) between height and general cognitive ability (GCA) using a sample of 515 human males. https://www.ncbi.nlm.nih.gov/

indeed smaller than the average in *Homo sapiens* (though reconstructed based on scarce and incomplete evidence), he was also significantly shorter. His height is estimated to lie between 100 to 140 cm, which puts his relative cranial capacity within the range of *Homo sapiens* (ca 1400 ccm). On the other hand, the cranial capacity of Neanderthals averaged 1500 ccm, surpassing that of modern man, which is contrary to evolutionary assumptions.[36] After all, if there was a correlation between brain volume and intelligence, elephants and whales would be the most intelligent animals.

While the lack of empirical evidence for the above correlation is problematic, the main issue is that the entire argument is based on the philosophical assumption that manipulating bodily matter, such as increasing brain volume or complexity, yields greater intellectual capacity. It is difficult to call this position anything other than materialism.[37] In contrast, according to Christian anthropology, abstract thinking or reasoning, even though it draws on sensual experience, is not a faculty of the brain but of the soul. It follows that the size of the brain

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pmc/articles/PMC6425087/ (accessed Feb. 10, 2022). However, the GCA only reflects the ability to solve logical tasks, which cannot be equated with human intelligence or intellectual capacity *per se*. Moreover, even the weak correlation between height and cognitive ability within human species would not be evidence for the gradual evolution from non-intelligent to intelligent species. It would only mean that the human races with smaller brains on average had slightly lower GCA.

[36] Neither do we see a correlation between changes in skull shape and brain–body proportion in relation to tool technology. For example, even at the oldest tool sites (Olduvai Gorge) a small percentage of tools display a high degree of refinement, similar to what we find at much younger sites. We see therefore that even though brain size and body proportions in early humans changed, tool technology may have remained unchanged for millions of years. Moreover, many technologies found in today's indigenous tribes are identical to that of "hominids" from three and more million years ago. Cf. Piotr Lenartowicz, *Ludy czy małpoludy: Problem genealogii człowieka* (Krakow: Ignatianum, 2010), 249, 256, 273.

[37] To be more specific, it was Ernst Haeckel who associated brain development with intellectual capacity. He called himself a "materialistic monist" which is the philosophi-

should have no bearing on intellectual capacity.[38] This is supported by the fact that, despite the continuous increase in intellectual achievements over the last 10 thousand years, there has been a continuous decrease in the average cranial capacity across individuals (10% for males and 17% for females).[39] It could even be speculated that the reverse correlation is true: the more a culture shifts towards abstract thinking, the lesser the requirement for a big brain. Such a tendency should be explainable in the light of Christian anthropology.[40]

DISPOSITION OF MATTER DOES NOT PRODUCE THE FORM

As shown above, some theistic evolutionists defend the thesis that irrational creatures identical to humans with respect to their body and intellectual capacities could have evolved naturally. This implies that they either lacked a spiritual soul or that the soul was infused when the body

cal position that asserts that only matter exists, with the intellect being just one of its functions. Cf. Ernst Haeckel, *Monism as Connecting Religion and Science: A Man of Science*, trans. J. Gilchrist (London: Adam and Charles Black, 1895).

[38] Piotr Lenartowicz discusses many examples proving a lack of correlation between the cranial capacity and intellectual capabilities in humans or sensory capabilities in animals. Within current human populations, the cranial capacity varies from 700 ccm to 2000 ccm but there are known cases of intellectually healthy individuals below this range. Lenartowicz, *Ludy czy małpoludy*, 214.

[39] Maciej Henneberg, "Decrease of Human Skull Size in the Holocene," *Human Biology*, 60, no. 3 (1988): 395–405. http://www.jstor.org/stable/41464021 (accessed April 14, 2022).

[40] As a tentative explanation within Christian anthropology, we could propose that as long as humans were restricted to primitive tools, they had to make up for their tools' lack of complexity with dexterity. This led to greater development of the senso-motoric functions which are correlated with brain size because these are "material" activities. However, when man started making more efficient tools, he was free to engage in more abstract thinking, which is an activity of the soul rather than the brain. This could have led to a reduction in senso-motoric brain functions leading to smaller cranial capacity.

achieved the proper disposition. The former does not seem reconcilable with the idea of sanctification or the image of God. The latter, in turn, would imply what Filippo de Filippi and St. George Mivart postulated in the 19th century, namely, that evolution can dispose living matter up to the point of receiving the human soul, which is created directly by God. But this scenario is challenged by the principles of classic metaphysics which does not allow the actual existence of disposition in matter prior to, or outside of, the actual combination with the form to which the matter is disposed. We explained this problem in greater detail elsewhere,[41] so here we will provide just two quotations from St. Thomas Aquinas, who describes how the disposition and the form are related to each other:

> Forms are not consequent upon the disposition of matter as their first cause; on the contrary, the reason why matters are disposed in such and such ways is that there might be forms of such and such kinds. Now, it is by their forms that things are distinguished into species. Therefore, it is not in the diversity of matter that the first cause of the distinction of things is to be found.[42]

So long as the matter's disposition to the form remains, the form itself remains, and when the disposition goes, the form also goes.[43]

From these passages we can conclude that in real being, matter's disposition to form cannot exist without form. It follows that since the soul is the substantial form of the body, the body cannot be properly disposed before the soul is infused. The "catch 22" of hominization

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[41] Michael Chaberek, "The Metaphysical Problem for Theistic Evolution: Accidental Change Does Not Generate Substantial Change," *Forum Philosophicum*, 26/1, Spring 2021: 35–49, DOI: 10.35765/forphil.2021.2601.04.

[42] Thomas Aquinas, *Summa contra Gentiles*. II, 40, 3.

[43] Thomas Aquinas, *Sententia De anima*, lib. 1, l.9, n.13.

described earlier is just a biological offshoot of this metaphysical principle.

THE HUMAN SOUL IS THE SUBSTANTIAL FORM OF THE BODY

In many theories of hominization, it is assumed that humanity begins when a particular element in the body achieves a satisfactory level of complexity (first category, p. 258–259) or by the acquisition of some bodily or spiritual feature, quality or faculty by the human ancestor (third category, p. 260). These could be the "special grace" provided by God (Alszeghy, Flick), the endowment with the "image of God" (Loke), or the ability to enter an "immediate relationship with God" (J. Ratzinger).[44] The problem is that all of these fall within the category of metaphysical accidents which implies that human beings differ from their non-human ancestors only accidentally. But the creation of a new substance (that is, human from non-human) would require a substantial change because the human soul is the substantial form of the human body. No amount of accidental change will ever yield a substantial change when "true" or "perfect" substances are considered.[45] Therefore, these theories deny a substantial difference between human and non-human animals and/or they contradict the substantiality of the human soul. That the soul is the substantial form of the body is not just a tenet of a particular metaphysical system that can be easily dismissed by an appeal to another system, but a solemn Catholic teaching proclaimed at the council of Vienne and later confirmed by the Fifth Lateran Council. According to both councils, denying this principle is heretical.[46]

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[44] Joseph Ratzinger, in *Creation and Evolution: A Conference with Pope Benedict XVI in Castel Gandolfo*, ed. Stephan Otto Horn and Siegfried Wiedenhofer (San Francisco: Ignatius Press, 2008), 15–16.

[45] For a justification of this claim, see Chaberek, *The Metaphysical Problem*.

[46] The Council of Vienne (1311–1312) pronounced against the errors of Pietro Olivi: "We reject as erroneous and contrary to the truth of the catholic faith every doctrine or

How to establish the origin of man?

In what has been said we have shown some biological and philosophical difficulties which necessarily accompany the theories of hominization as they were presented by Catholic proponents of evolution after Darwin and *Humani Generis*. Now, it can be asked whether it is possible to know when humanity began based on our scientific knowledge, or whether we are stuck with many disparaging theories each arguing for its own criteria for "detecting humanity."

We think it is possible to make some progress on this front. However, in order to know when humanity began, we first need to define what it means to be human. According to the traditional Christian and classic philosophical definition, man is a rational animal (*animal rationale*). Therefore, the difference between man and other animals (*differentia specifica*) is to be found not in bodily constitution (e.g., brain) but in rationality, even if rationality requires a special type of body. Besides, Christian anthropology (which we will follow here) teaches that the intellect resides in the soul and it is immaterial, so we cannot detect its presence other than indirectly, that is, by the marks and effects that it left in matter. Now, the only data we have from ancient creatures are bones and artifacts, so only these two kinds of remains can be used as "hard" evidence for the presence of a rational soul.

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proposition rashly asserting that the substance of the rational or intellectual soul is not of itself and essentially the form of the human body... we define that anyone who presumes henceforth to assert, defend, or hold stubbornly that the rational or intellectual soul is not the form of the human body of itself and essentially, is to be considered a heretic." (https://www.papalencyclicals.net/councils/ecum15.htm [accessed Feb. 17, 2022]).

The definition proposed by the Fifth Lateran Council reads: "The soul not only truly exists of itself and essentially as the form of the human body, ... but it is also immortal [...]." The Fifth Lateran Council, Session 8, 19 December 1513 (http://www.papalencyclicals.net/councils/ecum18.htm [accessed Feb. 17, 2022]).

Conjectures about customs, laws, art, behavior and skin color or facial expressions are highly speculative and cannot trump the evidence from bones and artifacts.[47]

In order to establish which creatures were rational (i.e., had a rational soul), we will discuss paleontological findings of bones and artifacts separately in the two following sections. While pursuing our arguments, we will draw extensively on the work of the Polish Jesuit, biologist and philosopher, Piotr Lenartowicz.[48]

Bones

Two different characteristics between apes and humans that can be established from remaining bones are the mode of locomotion and the mode of mastication. However, while mastication allows us to conclude whether an individual has an ape-like or human-like bite, it does not tell us much about its rationality. In contrast, we will argue that human bipedalism has much to do with rationality.

First, we need to observe that bipedalism is a peculiar trait in humans analogous to trunks in elephants, feathers in birds, or quills in hedgehogs. Many animals can occasionally stand or walk small distances upright, but it does not follow that they are bipedal. For example, while a dog can be trained to walk on its hind legs, the same dog will chase a rabbit on all fours. Similarly, a human can crawl or walk on

[47] Although we can reconstruct the general appearance of the face based on the skulls, when it comes to facial expressions, small changes in remodeling can have a dramatic effect on whether the individual looks more "human-like" or "ape-like." This in turn can be heavily influenced by theoretical bias.

[48] An excellent book by Lenartowicz summarizing a few decades of his studies was published two years before his death in 2012. Unfortunately, the book is unavailable in English. See: Lenartowicz, *Ludy czy małpoludy*.

all fours but when chased by a bull he will run upright. By "normal" or "primary" locomotion we mean the most efficient mode used by an animal e.g., when chasing prey.

There are other animals that are naturally bipedal, but here we need to be aware of an equivocation regarding the word "bipedal." When comparing humans and apes, "bipedal" means being potentially capable of walking on four limbs (i.e., quadruped) but using only two limbs in normal locomotion. By this definition, only humans are bipedal. Other "bipedal" animals, such as ratites (ostriches, kiwi birds et al.), do not fall under this definition of bipedalism, because even though they have four limbs, only two can potentially be used for walking. Their two upper limbs are non-functional (rudimentary) wings that are incapable of avian locomotion (i.e., flying). Ratites use all limbs (capable of locomotion) for walking and in this way, they do not differ from other animals including apes that also use all limbs for their primary mode of locomotion. This is also why ratites' locomotion, even though "bipedal," is not less energetically efficient than that of other animals. Having clarified the equivocation, we now compare great ape and human locomotion since apes are commonly believed to be our closest living relatives.

The most efficient and natural mode of locomotion in great apes is using all four limbs with the knuckles of the upper hands being used as a body support, which leaves quadruped footprints. In contrast, man has a completely different mode of locomotion. His upright posture demands specific anatomic configurations in all main parts of his skeleton, including the foot, knee, femur, pelvis, spine and skull base. Lenartowicz addresses each of them separately showing how man's posture and mode of locomotion necessitates a particular shape for each bone.[49] Just by way of example, let us consider the femur.

[49] Lenartowicz, *Ludy czy małpoludy*, 104–108.

The human upright posture creates a challenge with respect to balance due to the high center of gravity being anchored by a very small base. In order to make walking possible, the human femur is angled so that the hip joints are relatively distant from each other but the legs touch at the level of the knees.[50] The angled attachment of the human femur requires a specific morphology for both the pelvis and the knee joints—characteristics absent from ape skeletons. For this reason, finding a femur, or even a part of it, allows scientists to determine with a high degree of certitude whether an individual was bipedal or not. Consequently, establishing the mode of locomotion should be a clear-cut way of identifying whether a fossil belongs to an ape or a human.

As stated above, human reason is the feature that compensates for slow or energetically inefficient bipedal locomotion.[51] While a bipedal non-rational animal would be negatively selected in nature, a bipedal and rational animal would gain advantage over other species thanks to the free hands that can perform a variety of useful activities including the use of tools. The dominance of the human species, therefore, is a consequence of the harmony between the human body and the rational soul.

Artifacts

Most archeologists and Catholic philosophers typically assess the intellectual skills of putative human ancestors based on how advanced their

[50] The angle of the femur, one feature that helps in establishing bipedalism, was 15° in *Australopithecus*. In modern man it is 11°, in great apes 4–6°. In a way, *Australopithecus* was "more bipedal" than modern man and definitely more distant from apes than we are. (Lenartowicz, *Ludy czy małpoludy*, 118–119).

[51] See footnote 13. Cf. Lenartowicz, *Ludy czy małpoludy*, 99–100.

tool production was. They usually refer to the "mode 1–5" scale proposed by archeologist Grahame Clark in 1969 or some other system.[52] However, these classifications assume that the development of early technology occurred linearly with smooth transitions from one type of tools into another. The consequence of this approach is that, as Kenneth W. Kemp admits,

> it is not always easy to determine what behavior would require rationality.[53]

For example, Kemp speculates whether rationality would be required for the production of *mode one* tools (i.e., pebble cores and flake tools), or maybe *mode two* (i.e., large bifacial cutting tools made from flakes and cores) without providing a definitive answer.[54]

William L. Craig postulates that *Homo heidelbergensis* were the first "true" humans, but his justification of this choice rely on several criteria drawing on undetermined terms. For example, he tells us that humanity can be identified by the possession of a "larger brain" (but how large we are not told), "much more refined forms of artifacts" (but there are different levels of refinement and Craig does not say why the degree of refinement he chooses is the decisive one), "more elaborate techniques for tool production" (but why less elaborate techniques would not require rationality we are not told), "improved hunting technology," etc.[55] We can see that attributing archeological findings to

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[52] Grahame Clark, *World Prehistory: A New Synthesis* (Cambridge: Cambridge University Press, 1969). John J. Shea, *Stone Tools in Human Evolution: Behavioral Differences Among Technological Primates* (Cambridge: Cambridge University Press, 2016).

[53] Kenneth W. Kemp, "Science, Theology, and Monogenesis," *American Catholic Philosophical Quarterly*, vol. 85, no. 2: 217–236, 234.

[54] Kemp, *Science, Theology*, 234.

[55] Craig, *In Quest of the Historical Adam*, 334.

"real" humans becomes arbitrary because the adopted criteria for the evaluation of human achievements are quantitative. However, quantitative criteria are only appropriate if we assume that the difference between humans and non-humans is one of degree rather than kind. This approach is at odds with the Christian anthropology we adopt here. Therefore, another type of criteria is needed, one that reflects, not different "degrees" in human development, but rather the unique character of human achievements. In other words, we need to switch from a quantitative to a qualitative mode of assessment. We therefore propose four criteria that should allow us to distinguish between non-human instinctive activity and human rational activity:

1. Animals use natural objects whereas humans make artifacts. Human tools need to be specially prepared in an action that is disconnected (timewise and spacewise) from the use of the tool itself. The clearest and sufficient condition for establishing that the tool has been prepared is identifying whether its preparation required another tool.
2. Humans, unlike other animals, use tools universally, i.e., in different applications and space-time contexts. In other words, humans use one tool for different purposes.
3. Humans store tools for further use and carry them to distant sites.
4. The production and use of tools must be regular and natural rather than occasional or induced by very specific circumstances (e.g., by conditioning in a laboratory).

To identify typically human activity with confidence, all four criteria must be met together. We shall now evaluate and compare non-human behaviors with tool production by humans in light of the proposed criteria.

In recent years, New Caledonian crows have been observed to taper leaves and use them to retrieve insects from trunks. This led some scientists to proclaim them the leaders in "tool technology" among all ani-

mals.[56] However, chimpanzees outperformed New Caledonian crows in all studied categories confirming their superiority over all other irrational animals.[57] Therefore, if we want to compare human and animal "achievements" in terms of tool use and production, we should focus on chimps.

Although chimp behavior is complex and they often make use of objects, we will focus on three activities which are considered more "human-like."[58] (1) Chimps (and other apes) can use rocks to crack open nuts or other fruits, sometimes using another rock as an anvil. There have been anecdotal reports of chimps stabilizing the "anvil" with a third rock. (2) Chimps use "spears" i.e., cracked twigs, to hunt galagos and other small mammals. (3) Chimps "fish" for termites using probes. These are made by stripping a twig from its leaves, peeling off the bark, clipping one end and fraying the other. They then insert the probes into holes in termites' nests and retrieve termites that attach to the probe.

These are the most human-like behaviors that have been observed in the wild. Nevertheless, in the first two cases only the fourth criterion is met, albeit not fully. In the third case, the first criterion is met only partially, because there is no use of another tool to prepare the probe.[59] The

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[56] William C. McGrew, "Is Primate Tool Use Special? Chimpanzee and New Caledonian Crow Compared," *Philosophical Transactions of The Royal Society B*, Available at: https://pubmed.ncbi.nlm.nih.gov/24101630/ (accessed Feb. 15, 2022). Nota bene, if the New Caledonian crow excelled chimpanzees in intelligence, this fact would not support the human evolutionary hypothesis because chimps are considered our closer living relatives.

[57] McGrew, *Is Primate Tool Use Special?*, 6.

[58] Other chimp activities look more like gestures in combination with natural objects. See McGrew, *Is Primate Tool Use Special?*, 3–5.

[59] There have been many experiments conducted with apes in which they were taught to crack rocks using other rocks. But these artificially induced behaviors do not persist in the wilderness. This has been confirmed by Toth et al.: "Modern apes are not known to flake stone intentionally in the wild." (Nicholas Toth, Kathy Schick, Sileshi Semaw,

second and the third criteria are not met, and the fourth looks fulfilled at first glance. However, it is important to mention that retrieving termites with a probe (as well as nut-cracking) in chimpanzees is very limited and not universal across different populations. They usually go about their activities without the help of any objects.[60]

Now, when we consider the behavior of putative human ancestors, we notice that even the earliest so-called hominids were capable of producing and using tools in accordance with all four criteria. As an example, let us consider the Oldowan technology, which is the oldest tool technology (2.6–1.7 mya) thoroughly described in the literature.[61]

Criterion 1: Oldowan tool sites revealed that the earliest humans used tools to make other tools. For example, hammerstones found at these sites were pieces of rocks used as hammers to create percussion fractures on another rock to create sharp blades (stone flakes) and stone cores. We see therefore the use of one tool in order to make another which is the best confirmation of tool production.

"Comparative Study of the Stone Tool-Making Skills of Pan, Australopithecus, and Homo Sapiens." In *The Oldowan: Case Studies Into the Earliest Stone Age*, edited by Kathy Schick, Nicholas Toth (Bloomington: Stone Age Institute and Indiana University, 2006), 156–222.

[60] There are many examples of behaviors induced by researchers in animal laboratories, but we need to be aware of an equivocation that can be easily smuggled into this kind of observations. We can induce a chimp to take a hammer and drive a nail into a piece of wood. But we can also teach a dog to "give us the hand" when it sees us after a period of absence. This does not mean that the dog actually welcomes us, but simply that it imitates a behavior that we humans understand as welcoming. Similarly, the fact that a chimp can be taught to imitate human behaviors does not mean that they actually perform these behaviors.

[61] In recent years, even more ancient tools (3.3 mya) have been found in Kenya. Cf. Michael Balter, "World's oldest stone tools discovered in Kenya," *Science*, 14 April 2015, doi: 10.1126/science.aab2487, https://www.science.org/content/article/world-s-oldest-stone-tools-discovered-kenya, (accessed Feb. 15, 2022),

Criterion 2: Hammerstones were not only used to create tools but also (as it was revealed by residues of bones and skins on the blades) to process meat from game. The flakes served as blades to cut skin and meat but also to cut bones and access the marrow. We see therefore universality—one tool is applied for different goals.

Criterion 3 and 4: Early humans were not only selective when choosing raw materials to produce their tools, but also transported materials over long distances (10–20 km). Some tools were made at the same site where rocks were retrieved and then taken to the site of use. Sometimes however, raw material was taken and worked out at the site of use and storage.[62] That tools were stored and reused many times is confirmed by the degree of wear. For an instance, many rock blades went dull likely because of repetitive use for cutting bones, and those that remained sharp were probably used to cut softer materials.[63]

Much more could be said about the differences between human tools and object use in animals. However, these few examples are sufficient to reveal crucial information. Firstly, we see that, assuming the qualitative criteria, non-rational animals do not actually produce tools in a strict sense of the word.[64] Secondly, whoever made the Oldowan tools was certainly rational, i.e., human.

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[62] Cf. Lenartowicz, *Ludy czy małpoludy*, 262.

[63] Cf. *Ibid*., 250–254.

[64] Unfortunately, a great portion of the literature discussing the "use of tools by animals" is driven by evolutionary assumptions which force authors to overstate their cases. For example, an unaware reader may think that when researchers use the word "spear" with respect to chimps they actually mean refined artifacts. However, the so-called "spears" are simply broken twigs which are often crooked, unsharpened, and simply clipped. When researchers describe chimps using hammers, they actually mean chimps picking a piece of rock (not prepared in any way) and hitting an object.

Who were the first humans?

Having looked at the importance of both bipedalism and tool use for the characterization of human beings, we can speculate which of the many proposed "intermediate species" were actually human. The more common opinion among anthropologists is that bipedalism in Australopithecines was facultative and clearly different from bipedalism in modern humans. According to the same scholars, the earliest uncontested evidence of bipedalism belongs to *Homo erectus*,[65] who lived in between 1.8 to 0.5 mya. Thus, following our criterion associating humanity and bipedalism, human origins would have occurred at ~2 mya with *Homo erectus* as the first evidence for humanity.

This common claim, however, encounters a serious difficulty which our study has educed. With respect to toolmaking, the earliest well-described tool industry (Oldowan) was identified at sites in Ethiopia that were dated at around 2.6 mya. Recently, an older tool industry (Lomekwi) has been discovered in Kenya and has been dated at around 3.3 mya. Given our axiom (toolmaking implies rationality, which in turn implies bipedalism and humanity), it is virtually certain that the current consensus will ultimately be abandoned. The reason is that there must have existed rational creatures (i.e., humans) who made tools starting three and more million years ago.

There is a minority of scientists who claim that *Australopithecus* was characterized by bipedal locomotion identical to modern

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[65] For a review see: Casey Luskin, "Missing Transitions: Human Origins and the Fossil Record," in *Theistic Evolution: A Scientific, Philosophical, and Theological Critique*, ed. James P. Moreland, Stephen C. Meyer et al. (Wheaton, Illinois: Crossway Books, 2017), 437–474.

[66] Carol V. Ward, William H. Kimbel, Donald C. Johnson, "Complete fourth metatarsal and arches in the foot of Australopithecus afarensis," *Science*, 331(6018), 750–753. doi.org/10.1126/science.1201463 (accessed April 21, 2022). Jeremy M.

humans.[66] However, the association of Australopithecines and the oldest tool sites (Oldowan, Lomekwi) is just circumstantial (i.e., they were present at the correct geological time). Therefore, we are left with one of the two possible solutions: 1) there were other rational creatures, who were undoubtedly bipedal, who lived three or more mya, and produced the oldest tools but whose fossilized bones have not yet been found; or 2) the broadly accepted claim that *Australopithecus* did not have human locomotion is mistaken and the opinion of the minority of scholars will ultimately prevail.

Mistakenly naming human fossils as 'southern apes' (i.e., Australopithecus) may have been additionally motivated by the evolutionary assumption that 'real' humans could not have originated three or more million years ago. Such a scenario would completely confound the theoretical account of gradual transition from ape-like to human-like behavior and locomotion, because it would enforce the inclusion of virtually all known "linking forms" into one human species, pushing back the origin of man at least two million years beyond the currently accepted threshold. Proving that such an old humanity descended from apes would require finding new "missing links" dating back over four mya—a task that seems quite improbable if not impossible at this point. Moreover, *Sahelanthropus tchadensis* i.e., a skull with human characteristics that have not been contested by scientists, has been dated at seven mya. Again, this skull implies erect posture, which on our assumptions would testify to the rationality and humanity of this species. If this finding is confirmed (by other bones from the same period), the antiquity of man would need to be pushed back another three

DeSilva, "Functional morphology of the ankle and the likelihood of climbing in early hominins," *Proceedings of the National Academy of Sciences*, 106 (16), 6567–6572. https://doi.org/10.1073/pnas.0900270106 (accessed April 21, 2022). Lenartowicz, *Ludy czy małpoludy*, 112–137.

million years, invalidating all currently accepted evidence for intermediate forms between apes and humans.

While we focused on tool-production and bones because these are the only "hard facts," we can also extrapolate that the early humans had human language, produced art (dance, music), had laws and customs, and most of all were moral beings capable of good and evil. All these characteristics are found in modern indigenous people. It is interesting to imagine what archeological remains from indigenous cultures will be found by archeologists millions of years into the future—probably not much more than what has been found for early "hominids."

Indigenous tribes are a better point of reference in assessing the intellectual achievements of ancient people than apes and the only reason why this has not been done is due to the assumption that humans descended from apes. This assumption leads to the constant downplaying of our ancestors' behavioral and intellectual skills. For example, in computer animations, their appearance is very often reconstructed as crude, dull or ape-like, with no justification in the "hard facts." Moreover, virtually any discovery about early humans is received with surprise or borderline incredulity. Let us quote a single fragment from the Wikipedia entry on the discovery of Neanderthal constructions from 176 thousand years ago:

> The discovery shows that early Neanderthals were capable of building more elaborate structures than previously realized, and that they had a more complex social organization than previously thought.[67]

This would not come as a surprise had the authors adopted an adequate anthropology.

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[67] This entry refers to the Bruniquel Cave in Southern France that contains the remains of the oldest currently known constructions. See: https://en.wikipedia.org/wiki/Bruniquel_Cave (accessed Feb. 15, 2022).

Another interesting phenomenon is the constant re-dating of known facts about the early humans. Over years of research, the first controlled use of fire and axe and shelter construction were radically pushed back in time.[68] There is little doubt that this tendency will continue due to new discoveries. However, those who adopt the correct anthropology will have realized that, irrespective of how many millions of years human origins is pushed back in the past, the culture of our earliest relatives will not be substantially different from today's indigenous people.

All of this is not to say that humans have not "evolved" over the millennia. Surely they have, and most probably the variety of human races was much greater in the past than we have today, and included dwarf and giant races (which also occur in many other species). Our point is that intermediate species between humans and apes have not been found and we have ample evidence of rationality in even the earliest human-like forms.

Conclusion

We began our inquiry into human origins by presenting different evolutionary hypotheses proposed by Catholic scholars right after the publication of Darwin's *Origin of Species* and then after Pius XII's encyclical *Humani Generis*. As we have shown, each of these hypotheses, with the exception of special transformism, faces the "catch 22" problem of hominization: evolution could not have produced the human body because this would have required multiple losses in adaptive traits without the human soul to compensate for the handicaps. However, the human soul could not have been infused into a non-human body due to a meta-

[68] Cf. Lenartowicz, *Ludy czy małpoludy*, 268.

physical impossibility. Hence evolution from an ape-like body to a human-like body is impossible. The only remaining option, special transformism, does not help to accommodate the traditional view of human origins with evolution either, because it necessarily involves a dramatic "physical leap" which is unacceptable from the evolutionary standpoint.

We see therefore that each of the currently proposed theories of hominization ends up in one of three propositions: (1) the non-human soul animates the human body, (2) the human soul animates the non-human body, or (3) the soul is not the substantial form of the body. (1) and (2) are refuted by classic metaphysics, and (3) by both metaphysics and the Church's teaching. It follows that contemporary theologians have not offered a viable alternative to the traditional Catholic teaching on human origins. We propose instead that the so-called "hominids" were either apes or humans, i.e., rational animals, and the latter should be considered equal to indigenous peoples. The process of discovering the humanity of our distant ancestors began decades ago, and every new finding takes us closer to that conclusion. The adoption of an adequate (i.e., non-reductive, non-materialistic) anthropology allows us to reach this conclusion even before the paleontological evidence enforces it.

Unfortunately, the adoption of an evolutionary scenario of human origins pushes scientists to postulate ever new "sub-human" species and belittle their achievements. We should not forget that many early evolutionists considered black communities in Africa to be more closely related to apes than to European men. This discrimination led to the exposition of a pigmy boy (Ota Benga) in a New York zoo, and also the first genocide of the 20th century, when the German empire ethnically cleansed the Herero people. While this kind of extremism no longer happens today (or so we hope), modern scholars have proposed that there could have been creatures that exercised all human activities (including art and religion), interbred with humans, and yet were not humans. This kind of discrimination is no less repugnant than the dis-

crimination against indigenous tribes by the colonizers during early modernity. Because they were driven by lowly desires of exploitation, the colonizers did not want to admit the "full humanity" of native peoples. The Church, however, stood up for the natives by defending their dignity in both theory and practice. Similarly, today's evolutionists, driven by materialistic bias, do not want to acknowledge the "full humanity" of our ancestors from millions of years ago. It is therefore the obligation of Catholic scholars to stand up and defend their dignity in the light of our best science and philosophy.

Human Origins Revisited: On the Recognition of Rationality and the Antiquity of the Human Race

SUMMARY

Soon after Charles Darwin proposed his theory of the origin of species (1859), Catholic theologians set out to harmonize the evolutionary account with the traditional Christian doctrine of creation. While there have been several attempts at achieving this, all of them encountered philosophical or theological problems. After *Humani Generis* (1950), the debate among Catholic scholars shifted to questions related to polygenism and the propagation of original sin. In this paper, we show that these new theories adopted philosophically or theologically problematic concepts of hominization. We also argue that there is ample paleontological evidence from anatomy and tool-making to support the claim that the so-called fossil hominids should be categorized as either apes or human beings (Homo sapiens). This postulate invites a new look at human origins, one that remains compatible with modern science as well as traditional theology and metaphysics.

Keywords: hominization, evolution, anthropology, soul, origins

REFERENCES

Acta et decreta Concilii Provinciae Coloniensis, Coloniae: 1862.

Alexander, Andrew. "Human Origins and Genetics." *The Clergy Review*, 49(1964): 344–353.

Alszeghy, Zoltan and Mauricio Flick. "Peccato Originale in Prospettiva Evoluzionistica." *Gregorianum*, 47(1966): 201–225.

Alszeghy, Zoltan and Mauricio Flick. *Il Peccato Originale*, Biblioteca di Teologia Contemporanea 12. Brescia: Queriniana, 1972.

Balter, Michael. "World's oldest stone tools discovered in Kenya." *Science* Apr 14, 2015, doi: 10.1126/science.aab2487.

"Bruniquel Cave," accessed Feb 15, 2022, https://en.wikipedia.org/wiki/Bruniquel_Cave.

Chaberek, Michael. *Catholicism and Evolution: A History from Darwin to Pope Francis*, Kettering, OH: Angelico Press 2015.

Chaberek, Michael. "The Metaphysical Problem for Theistic Evolution: Accidental Change Does Not Generate Substantial Change." *Forum Philosophicum* 26/1, Spring 2021: 35–49, DOI: 10.35765/forphil.2021.2601.04.

Clark, Grahame. *World Prehistory: A New Synthesis*. Cambridge: Cambridge University Press, 1969.

Craig, William L. *In Quest of the Historical Adam: A Biblical and Scientific Exploration*. Grand Rapids: William B. Eerdmans Pub. Co., 2021.

The Decrees of the Council of Vienne, accessed Feb. 17, 2022, https://www.papalencyclicals.net/councils/ecum15.htm.

The Decrees of the Fifth Lateran Council, Session 8, 19 December 1513, accessed Feb. 17, 2022, http://www.papalencyclicals.net/councils/ecum18.htm.

DeSilva, Jeremy M. "Functional morphology of the ankle and the likelihood of climbing in early hominins." *Proceedings of the National Academy of Sciences* 106(16): 6567–6572. https://doi.org/10.1073/pnas.0900270106.

Haeckel, Ernst. *Monism as Connecting Religion and Science: A Man of Science*. Trans. J. Gilchrist, London: Adam and Charles Black 1895.

Henneberg, Maciej. "Decrease of Human Skull Size in the Holocene." *Human Biology* 60, no. 3 (1988): 395–405.

Hofmann, James R. "Catholicism and Evolution: Polygenism and Original Sin (Part II)." *Scientia et Fides* 9 (1) 2021: 63–129.

John Paul II, "Address to the Plenary Session on 'The Origins and Early Evolution of Life' (22 October 1996)." *Papal Addresses to The Pontifical Academy of Sciences 1917–2002 and to The Pontifical Academy of Social Sciences 1994–2002*, 370–374. Vatican City: The Pontifical Academy of Sciences, 2003.

Kemp, Kenneth W. "God, Evolution and the Body of Adam." *Scientia et Fides* 8 (2) 2020: 139–172.

Kemp, Kenneth W. "Science, Theology, and Monogenesis." *American Catholic Philosophical Quarterly* vol. 85, no. 2: 217–236.

Koonin, Eugene V. "The Origin at 150: is a new evolutionary synthesis in sight?" *Trends Genet*. November 2009, 25(11): 473–475.

Lenartowicz, Piotr. *Ludy czy małpoludy: Problem genealogii człowieka*. Kraków: Ignatianum 2010.

Leo XIII, "Arcanum divinae sapientiae." *Acta Sanctae Sedis*, 12 (1879), reprint 1968.

Loke, Andrew T.E. "Reconciling Evolution and Biblical Literalism: A Proposed Research Program." *Theology and Science*, vol. 14, no. 2: 160–174.

Loke, Andrew T.E. *Evil, Sin, and Christian Theism*. Routledge, 2022.

Luskin, Casey. "Missing Transitions: Human Origins and the Fossil Record," *Theistic Evolution: A Scientific, Philosophical, and Theological Critique*, edited by James P. Moreland, Stephen C. Meyer, et al., 437–474. Wheaton, Illinois: Crossway Books, 2017.

McGrew, William C. "Is Primate Tool Use Special? Chimpanzee and New Caledonian Crow Compared." *Philosophical Transactions of The Royal Society B* doi:10.1098/rstb.2012.0422.

Messenger, Ernst C. *Evolution and Theology: The Problem of Man's Origin*. New York: Macmillan Company, 1932.

Meyer, Stephen C. *Darwin's Doubt: The Explosive Origin of Animal Life and the Case for Intelligent Design*. HarperOne 2013.

Mivart, St. George J. *On the Genesis of Species*. London: Macmillan 1871.

Noble, Denis. *The Music of Life: Biology Beyond the Genome*. Oxford: Oxford University Press, 2008.

Pius XII, "Humani Generis." *Acta Apostolicae Sedis*, 42 (1950).

Ratzinger, Joseph. *In Creation and Evolution: A Conference with Pope Benedict XVI in Castel Gandolfo*, ed. Stephan Otto Horn and Siegfried Wiedenhofer, 15–16. San Francisco: Ignatius Press, 2008.

Shapiro, James. *Evolution: A View from the 21st Century*. Chicago: Cognition Press, 2022.

Shea, John J. *Stone Tools in Human Evolution: Behavioral Differences Among Technological Primates*. Cambridge: Cambridge University Press, 2016.

Soares Daphne, Niemiller, Matthew L. "Extreme Adaptation in Caves." *The Anatomical Record*, 2018 (303): 15–23.

Suarez, Antoine. "Can we give up the origin of humanity from a primal couple without giving up the teaching of original sin and atonement?" *Science and Christian Belief* (2015) 27: 59–83.

Suarez, Antoine. "Transmission at Generation: Could Original Sin Have Happened at the Time When Homo Sapiens Already Had a Large Population Size?" *Scientia et Fides*, 4 (1) 2016: 253–293.

Thomas Aquinas, *De Veritate*, https://isidore.co/aquinas/english/QDdeVer12.htm#5.

Thomas Aquinas, *Summa Theologiae*, https://www.newadvent.org/summa/1091.htm.

Toth, Nicholas, Kathy Schick and Sileshi Semaw. "Comparative Study of the Stone Tool-Making Skills of Pan, Australopithecus, and Homo Sapiens." *The Oldowan: Case Studies Into the Earliest Stone Age*, edited by Kathy Schick, Nicholas Toth, 156–222. Bloomington: Stone Age Institute and Indiana University, 2006.

Vuoksimaa, Eero, et al. "Brain structure mediates the association between height and cognitive ability." *Brain Struct Funct* 2018, 223(7): 3487–3494. doi:10.1007/s00429-018-1675-4.

Ward, Carol V., William H. Kimbel, and Donald C. Johnson, "Complete fourth metatarsal and arches in the foot of Australopithecus afarensis." *Science* 331(6018): 750–753. doi.org/10.1126/science.1201463.

Wayman, Erin. "Energy Efficiency Doesn't Explain Human Walking?" *Smithsonian Magazine* September 17, 2012. Accessed Feb. 15, 2022. https://www.smithsonianmag.com/science-nature/energy-efficiency-doesnt-explain-human-walking-39161215/.