

Nothing entirely new was afterwards made by God, but all things subsequently made had in a sense been made before in the work of the six days. Some things, indeed, had a previous experience materially, as the rib from the side of Adam out of which God formed Eve.²

Note that for St. Thomas, other species like the mule existed beforehand in their matter as well as in their causes:

Some things, indeed, had a previous experience materially, as the rib from the side of Adam out of which God formed Eve; whilst others existed not only in matter but also in their causes, as those individual creatures that are now generated existed in the first of their kind. Species, also, that are new, if any such appear, existed beforehand in various active powers; Again, animals of new kinds arise occasionally from the connection of individuals belonging to different species, as the mule is the offspring of an ass and a mare; but even these existed previously in their causes, in the works of the six days. Some also existed beforehand by way of similitude, as the souls now created.³

What is important is that the creation of each one of these new species has to refer back ultimately to God's creative activity. God creates through evolution.

Nicanor Pier Giorgio Austriaco, O.P.

2. *ST* I, q. 73, a. 1, ad 3.

3. *Ibid.*

❖ CHAPTER 25

The Historicity of Adam and Eve (I: Theological Data)

One of the most controversial disputed questions in the dialogue between evolution and Christian faith today involves the historicity of Adam and Eve. Did they *really* exist? Does it even matter to the Catholic faith whether they existed? Why or why not?

In the next several chapters, we will answer these questions as an exercise of faith and reason that seeks to be faithful to the Catholic dogmatic tradition. Here, we will begin by laying out the theological context that establishes the Church's teachings on the origins of our species. In the next chapter, we will summarize the doctrine of original sin because these dogmatic statements are at the heart of our discussion. In the third chapter, we will summarize the scientific data that supports the narrative for the evolution of *Homo sapiens*. Finally, in the fourth chapter, we will propose a conceptual synthesis that seeks to be faithful to both the theology and the science.

For Catholic theologians, the most recent statement of the magisterium of the Catholic Church on the historicity of Adam and Eve is the papal encyclical, *Humani Generis*, promulgated by Pope Pius XII in 1950. In that letter addressed to the bishops of the Catholic Church, the Holy Father taught the following:

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.¹

Some Catholic theologians and lay faithful take this papal statement as definitive magisterial teaching that affirms the historical existence of a single original couple from whom all human beings are descended. To put it another way, they think that this encyclical definitively rules out polygenism, which is the theological theory that human beings are descended from several original first couples. The theological theory that human beings are descended from a single original couple is called monogenism.

However, these same theologians and lay faithful often fail to consider the rest of the paragraph in the same encyclical where Pope Pius XII explains his reasoning for his conclusion that polygenism cannot be embraced by the Catholic Christian. The Holy Father taught:

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

1. *Humani Generis*, §37.

Adam and which, through generation, is passed on to all and is in everyone as his own.²

In other words, at face value, Pope Pius XII ruled out polygenism because he could not imagine how an account of several original first couples could be reconciled with the Church's teaching on original sin. As we will discuss in the chapters that follow, this was not surprising because scientists in 1950 believed that the human race was descended from several original first non-human couples who were scattered throughout the planet.

As we will also see, however, scientists today now think that our species is descended from a population of hominins living in the same geographical area. Therefore, in the chapter on the historicity of Adam and Eve, I will propose that this contemporary scientific account on human origins can be reconciled with the Church's teaching on original sin. In fact, I will go even further by suggesting that we can still defend the historicity of Adam as the single and first human being from whom all of us are descended. ✓

Significantly, notice that Pope Pius XII makes no mention of the Genesis text in his encyclical, because for Catholics, the disputed question over the historicity of Adam and Eve does not involve a debate over whether the biblical text should be interpreted literally or not. As we have discussed in earlier chapters, for the Catholic Christian, biblical interpretation is a work of both faith and reason that seeks to read the sacred text in line with all truth, theological and scientific, both of which have their source in God. It is a task that is guided by the Holy Spirit who continues to work within and through his Catholic Church. ✓

2. *Ibid.*

Finally, it is important to acknowledge that the International Theological Commission chaired by then Cardinal Joseph Ratzinger, now Pope Emeritus Benedict XVI, has published a theological statement on evolution that is open to polygenism. In its document, *Communion and Stewardship: Human Persons Created in the Image of God*, published in 2004, the Commission acknowledges that the scientific evidence points to a polygenic origin for our species:

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.³

We will discuss this scientific evidence in Chapter 27.

The Commission then makes the following theological claim:

Catholic theology affirms that 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.⁴

This suggests that both monogenism and polygenism remain viable theological opinions for Catholic theologians seeking to be faithful to the doctrinal tradition.

Nicanor Pier Giorgio Austriaco, O.P.

3. *Communion and Stewardship*, §63.

4. *Ibid.*, §73 (emphasis added).

✦ CHAPTER 26

The Historicity of Adam and Eve (II: The Doctrine of Original Sin)

In his book, *Christianity in Evolution: An Exploration*, Jesuit theologian and Catholic priest Jack Mahoney, S.J., has proposed that the truths of evolutionary biology have made the Catholic Church's traditional teachings on human origins obsolete: "I argue that with the acceptance of the evolutionary origin of humanity there is no longer a need or a place in Christian beliefs for the traditional doctrines of original sin, the Fall, and human concupiscence resulting from that sin."¹

Mahoney is not alone in holding this view, and there are many other scholars, both Catholic and Protestant, who think that these traditional Christian doctrines, especially the doctrine of original sin, need to be jettisoned.

In this chapter, I respond to these theologians by arguing that the doctrine of original sin is an integral part of divine revelation that not only emerges from our understanding that God is good but also explains our lived experience of human brokenness. In this chapter and the chapters that follow on the historicity of Adam and Eve, I will also show that it is a doctrine that is not incompatible with an evolutionary account of creation.

What is the doctrine of original sin? It is an explanation from divine revelation for the lived experience of our brokenness. As my students at Providence College will quickly acknowledge, human beings are broken. We do things that we know will hurt us in the long run, and we do not do things that we know will make us happy, again in the long run. They echo the Apostle Paul, who declared: "I do not understand my own actions. For I do not do what I want, but I do the very thing I hate."² Why is this?

According to the *Catechism of the Catholic Church*, our God who is goodness Himself created everything good. He created them flawless so that they would reflect his infinite wisdom and goodness.³

For the same reason, according to the *Catechism*, our original parents were not only created good, they were also established in friendship with their Creator and in harmony with themselves and with each other and with creation around Him.⁴ Theologians call this original state of harmony, the state of original justice. It is a state of original goodness that was given to our first parents by a God who is good.

The "mastery" over the world that God offered to the original human beings in the state of original justice was realized above all within themselves. Our first parents had mastery of self. Aquinas would explain this mastery of self as follows:

We saw above that man was originally constituted by God in such a condition that his body was completely

1. Jack Mahoney, *Christianity in Evolution: An Exploration* (Washington, DC: Georgetown University Press, 2011), p. 71.
2. Rom. 7:15.
3. See CCC, §339.
4. See *ibid.*, §374.

subject to his soul. Further, among the faculties of the soul, the lower powers were subject to reason without any rebelliousness, and man's reason itself was subject to God. In consequence of the perfect subjection of the body to the soul, no passion could arise in the body that would in any way conflict with the soul's dominion over the body. Therefore, neither death nor illness had any place in man. And from the subjection of the lower powers to reason there resulted in man complete peace of mind, for the human reason was troubled by no inordinate passions. Finally, owing to the submission of man's will to God, man referred all things to God as to his last end, and in this his justice and innocence consisted.⁵

In other words, God gave our first parents who were in the state of original justice the sanctifying grace that justified them and made them righteous. Our human parents were friends of God.

God's supernatural gift of sanctifying grace, according to Aquinas, was also accompanied by three other gifts, called the preternatural gifts, that were given to our first parents to perfect them by remedying their natural weaknesses.

First, human beings by their very nature as creatures made of spirit and matter are inherently corruptible. In other words, because we are made of two things, spirit and matter, we naturally are prone to their separation. There is nothing inherent to spirit and to matter that would keep them together forever. This separation of spirit and matter is called death. The gift of immortality was given to the human beings in the state of original justice to perfect this inherent corruptibility so that they would live forever.

5. *Compendium of Theology*, §186.

Second, human beings by their very nature are prone to interior disarray because what we are inclined to know, what we are inclined to choose, and what we are inclined to desire often do not coincide. We lust after pleasures that are often at odds with what we know are reasonable. The gift of integrity was given to our first parents to perfect this interior disorder so that they would be more apt to act well in grace to attain their holiness. This preternatural gift orders persons so that their reason is subject to God, their desires are subject to their reason, and their bodies are subject to their souls.

Third, human beings by our very nature are inherently limited in knowledge because we know things through contingent realities and we learn about them in a gradual fashion. In Aquinas' view, the gift of infused knowledge was given to our first parents to remedy this weakness. It would have included all truths, both natural and supernatural, necessary for human beings to direct their lives and the lives of others, ordering everything to God.

Finally, because they had the gifts of immortality, of integrity, and of infused knowledge, the original human beings, according to Aquinas, were also impassable. In other words, they were not able to experience bodily or spiritual suffering.

Building upon this Thomistic theological account, I have also proposed that it would have also been fitting for God to have given the first human beings, several gifts that I have called the preteradaptive gifts as soon as they had evolved to perfect them not only as persons made of body and soul but also as persons who have evolved from non-personal primate ancestors.⁶

6. Nicanor Austriaco, O.P., "A Theological Fittingness Argument for the Historicity of the Fall of *Homo Sapiens*," *Nova et Vetera*, Vol. 13, No. 3 (2015): pp. 651-668.

These preteradaptive gifts would include gifts, among others, to counter the evolved adaptations we inherited from our primate ancestors, to infidelity, to violence, and to biased and false knowledge. These gifts would have given the first human beings the capacity to love faithfully, to peace, and to know truth.

In sum, in the state of original justice, our original parents would have been given everything that they would have needed to live in a state of harmony with themselves, with each other, with all of creation, and most significantly, with God their Father who created them.

And yet, we are broken! We are inclined to actions and to inactions that hinder us from the happiness that God had intended to give us from the very beginning. Why is this?

According to the *Catechism*, our existential brokenness can be explained by positing a historical event in the distant past when our first parents rejected God and all of his gifts. The Bible reveals that the original human beings were put to a test, a test that they failed through an act of disobedience. This was the original sin.

Some may wonder, why did God even test our first parents? Aquinas explains that God gave our original parents an explicit command that they had to obey so that they would learn from the very beginning to follow God's will.

When our first parents disobeyed God with the original sin, they rejected him and with Him, all of his gifts. Without the preternatural and the preteradaptive gifts, these fallen human beings thereafter became subject to death, to suffering, to error-filled knowledge, to weakness of will, and to disordered desire. In other words, they became subject to the interior struggle that is the source of our brokenness.

Notice that this account of original sin sees the effect of original sin, not as an addition to or a corruption of human

nature—certainly not as a tendency to evil or a perversion that makes the human being evil as such—but as a privation of that nature, an absence, a lack, a wound, that leaves human beings struggling with the consequences of their nature as it had been created and evolved. It is this struggle that makes the human person prone to evil acts though he himself is not inherently evil.

Significantly, the Catholic Church teaches, as Aquinas had explained, that God had intended our first parents to give their descendants the blessings of original justice. When they lost the gifts, however, they could not give it to their posterity. Thus, the Council of Trent (1546) would teach that original sin is transmitted by propagation and not by imitation.

Note that some may read this statement by the Council of Trent—that original sin is transmitted by propagation and not by imitation—as a claim that original sin is transmitted biologically. However, the consequences of original sin are privations in the soul of the human being. Because of the original sin, his soul lacks grace and the preternatural gifts. Thus, when the Council of Trent teaches that the consequences of the original sin—our fallen human nature—are transmitted by propagation and not by imitation, we should understand this as a metaphysical and not a biological claim. As immaterial spirit, our soul and its properties are not determined by our genes. Instead, when God creates our souls when we are conceived, he creates them without the graces and gifts that we should have inherited from our original parents.

In conclusion, to summarize the Catholic Church's teaching on original sin, the *Catechism* puts it as follows:

The transmission of original sin is a mystery that we cannot fully understand. But we do know by Revelation that Adam had received original holiness and justice not for himself alone, but for all human nature. By yielding to

the tempter, Adam and Eve committed a personal sin, but this sin affected the human nature that they would then transmit in a fallen state. It is a sin which will be transmitted by propagation to all mankind, that is, by the transmission of a human nature deprived of original holiness and justice. And that is why original sin is called "sin" only in an analogical sense: it is a sin "contracted" and not "committed"—a state and not an act.⁷

Thus, the doctrine of original sin explains why we are broken. However, it is also the grounds for our salvation because "after his fall, man was not abandoned by God."⁸ Thus, it should not be surprising that the *Catechism* concludes: "The Church, which has the mind of Christ, knows very well that we cannot tamper with the revelation of original sin without undermining the mystery of Christ."⁹

Nicanor Pier Giorgio Austriaco, O.P.

7. CCC, §404.

8. See *ibid.*, §410.

9. *Ibid.*, §389.

❖ CHAPTER 27

The Historicity of Adam and Eve (III: Scientific Data)

In Chapter 25, I summarized the theological data that establishes the Catholic Church's teachings on the origins of the human race. A believer seeking to be faithful to the Catholic tradition and to divine revelation would need to take this theological data into account as he or she strives to respond to concerns raised by theologians who question the historicity of Adam and Eve.

In this chapter, I will summarize the scientific data that grounds the scientific explanation for the origins of our species, *Homo sapiens*. Basically, I will outline the evidence for what biologists call the Out-of-Africa model for human origins. In Chapter 28, I will then propose a theological narrative, an exercise of both faith and reason, that synthesizes the theological and scientific data into a coherent whole.

In 1950, when Pope Pius XII published his encyclical, *Humani Generis*, scientists thought that the human race had evolved independently from different non-human populations that had existed in different regions in the world before the appearance of *Homo sapiens*. These archaic non-human populations were members of the species, *Homo erectus*.

According to this Multi-Regional Model for human origins, native Africans had evolved from archaic non-humans in Africa, native Europeans had evolved from archaic non-humans in Europe, native Asians had evolved from archaic non-humans in Asia, and native Australians had evolved from archaic non-humans in Australasia. Though there was some interbreeding between these evolving human populations over the course of history, according to this explanation for human origins, the peoples of Africa, of Europe, of Asia, and of Australasia evolved into modern human beings relatively independently.

From a theological perspective, according to this multi-regional model for human origins, it is hard to see how every human being who ever lived could have shared a common fallen human nature that would eventually be assumed and redeemed by Christ. For example, if the historic event of the fall had taken place in Africa, how could this event have affected the human natures of the individuals who had evolved independently in Australia, by propagation and not by imitation? It is not clear. Therefore, as we saw in Chapter 25, it is not surprising that Pope Pius XII had taught that,

it is in no way apparent how [polygenism] 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.¹

With the Multi-Regional Model, there could never have been an original Adam or an original Eve.

1. *Humani Generis*, §37.

By 2010s, the science had changed dramatically. Today there is robust evidence from both the fossil record and genetic data that anatomically modern humans—creatures that looked like us—evolved in Africa between 200,000 and 150,000 years ago, and that they migrated out of Africa about 60,000 years ago.²

According to this Out-of-Africa Model, anatomically modern humans evolved about 150,000 to 200,000 years ago in southern Africa, and then about 100,000 years ago spread to other regions of Africa. Several tens of thousands of years later, a small group of humans exited northeastern Africa and continued this expansion throughout Europe, Asia, Oceania, and eventually the Americas.

Notably, anatomically modern humans lived alongside human-like, yet still non-human bipedal species, creatures called archaic hominins by scientists, including the Neanderthals and the Denisovans, who have since gone extinct. There is strong evidence that these species interbred with our own such that 1 percent to 4 percent of the DNA of human beings living today who are not of African ethnic descent is of Neanderthal origin, and between 3 percent to 5 percent of the DNA of Melanesians and Aboriginal Australians is from the Denisovans.

How many original human beings were there? Studies suggest that the ancestral effective population size for anatomically modern humans in Africa is about 10,000 breeding individuals. In other words, one would need to posit the existence of 10,000 original humans to properly account for the genetic diversity that we see among the seven billion human beings living today.

Note that it is unlikely that these original humans lived in the same community, because without agriculture—which only

2. Brenna M. Henn, L.L. Cavalli-Sforza, and Marcus W. Feldman, "The great human expansion," *Proceedings of the National Academy of Sciences USA*, Vol. 109, No. 44 (2012): pp. 17758–17764.

appeared about 14,000 years ago—they would not have been able to find enough food to support a single tribe larger than several hundred members.

At this point, however, I need to make a critically important distinction between anatomically modern humans—bipeds who looked like us—and behaviorally modern humans—bipeds that not only looked like us, but also behaved like us as well. Though anatomically modern humans evolved around 200,000 to 150,000 years ago, behaviorally modern humans did not appear until much later.

This critical transformation from anatomically modern to behaviorally modern human beings—called the Great Leap Forward by evolutionary biologist Jared Diamond³—is revealed by a rich archeological record of painting, engraving, carving, bodily decoration, notation and music. The earliest archaeological evidence for such modern behavior has been linked to artifacts found in Blombos Cave in modern-day South Africa dating to about 75,000 years ago.

Biologically, this transformation from anatomically modern to behaviorally modern human beings is often attributed to the evolution of brain structures that would have facilitated the use of language. Ian Tattersall, Curator Emeritus of the American Museum of Natural History has noted, “If we are seeking a single cultural releasing factor that opened the way to symbolic cognition, the invention of language is the most obvious candidate. Indeed, it is perhaps the only plausible one that it has so far proved possible to identify.”⁴

3. Jared Diamond, *Guns, Germs, and Steel* (New York: W.W. Norton & Company, 2005), pp. 39ff.

4. Ian Tattersall, “How We Came to Be Human,” *Scientific American—Special Edition: Becoming Human*, Vol. 16, No. 2 (2006): pp. 66-73.

Strikingly, Noam Chomsky, whom many consider the father of modern linguistics, has proposed that this cognitive transformation that changed a non-linguistic to a linguistic primate occurred in a single individual:

It looks as if—given the time involved—there was a sudden “great leap forward.” Some small genetic modification somehow that rewired the brain slightly [and] made this human capacity [for language] available.... Mutations take place in a person, not in a group. We know, incidentally, that this was a very small breeding group—some little group of hominids in some corner of Africa, apparently. Somewhere in that group, some small mutation took place, leading to the great leap forward. It had to have happened in a single person.⁵

For Chomsky and his colleagues, the human capacity for language is best explained if it first appeared in one individual – the first behaviorally modern human – who himself was one member of the larger population of anatomically modern humans. Interestingly, there is also data that suggests that all human languages are derived from a single proto-language that dates to about 100,000 years ago in central and southern Africa, though this claim is controversial.⁶

Finally, why is this transformation from anatomically modern to behaviorally modern humans so important for our discussion of the historicity of Adam and Eve? It is critically important

5. Noam Chomsky, *The Science of Language: Interviews with James McGilvray* (Cambridge: Cambridge University Press, 2012), p. 14.

6. Quentin D. Atkinson, “Phonemic Diversity Supports a Serial Founder Effect Model of Language Expansion from Africa,” *Science*, Vol. 332, No. 6027 (2011): 346-349.

because, philosophically, this transformation can be understood to be archeological evidence for the appearance of the rational soul in human evolution. Theologically, this transformation would be a sign of the arrival on the stage of world history of the *imago Dei*, the creature made in the image and likeness of God with intellect and with will.

Nicanor Pier Giorgio Austriaco, O.P.

✻ CHAPTER 28

The Historicity of Adam and Eve (IV: A Theological Synthesis)

In the previous three chapters, we examined the theological and the scientific data that need to be reconciled by faith and reason if we are to remain faithful both to divine revelation and to authentic scientific inquiry. In this chapter, I propose a theological narrative that seeks to do precisely this by bringing together themes that we have explored throughout this book. Note that this narrative remains only a hypothetical one that attempts to reconcile the data of faith and reason into a coherent whole.

From all eternity, the Triune God, Father, Son, and Holy Spirit, desired to share their life with persons who were not God. As such, they chose to create angelic and human persons who were destined to become like God by participation in the divine nature.

As pure spirits, the angelic creatures were created immediately. At their creation, some of them chose for God while others chose against Him. The former we call the angels; the latter we call the demons. As spirit-matter composites, the human creatures were created and are still being created over time. It was fitting for God, as we discussed in an earlier chapter, to create not only human beings but also all living material beings through

an evolutionary process that better revealed his glory. It was then and remains now a process that is moved and directed by Divine Providence.

From a theologian's perspective, biological evolution was a 3.5 billion-year process, directed by God, to advance living matter until it was apt to receive a rational soul. This critical point in evolutionary history occurred about 100,000 years ago in Africa among a group of anatomically modern human beings when an individual hominin was conceived with the inherent neurocognitive capacity for language.

How exactly this happened will always be a matter of speculation. As Noam Chomsky has proposed, a single mutation acquired at conception could have altered the structure of an individual anatomical modern human's brain in a way that gave him the capacity for language. In my view, for reasons I cannot develop at this time, this capacity for language would have gone hand in hand with the capacity for abstract thought. As the first speaking primate, this individual would have also been the first rational animal. He was the first anatomically modern human to have the capacity to form abstract concepts, to reason, and therefore, to construct an internal map of his world. As he matured, he would have used this linguistic capacity to speak to himself and to God. This first speaking human is the original human we call Adam.

Moreover, since every human being today possesses the same linguistic capacity, each one of us must have inherited that capacity from him.¹ Each one of us must therefore be descended from this first speaking human. Adam would not only have been the

1. It is known that it is statistically very unlikely, if not impossible, for novel mutations of this kind to appear more than once in a hundred thousand-year period.

first speaking human, he is also the father of all speaking humans, which is all of us.

As we discussed in Chapter 26, it would have also been fitting for God to have given this original speaking biped—this behaviorally modern human named Adam—the supernatural graces and the preternatural gifts that he would have needed to attain his destiny to share the life of the Triune God. Adam would have been conceived in a state of original justice with the preternatural gifts that allowed him to order his instincts to his eternal destiny. Tragically, we know that this original human being ultimately disobeyed God in some way, forfeiting these supernatural and preternatural gifts he had been given, not only for himself, but also for his progeny.

Nonetheless, in the fullness of time, this original speaking biped and all of his descendants would be redeemed by Jesus Christ, the Savior of the World, so that they would be able, once again, to share in the inner life of the Trinity, and so, to live forever.

I am often asked three questions in response to this theological narrative. First, what about Eve? What can we say about her? In response, science can only speak about an original human individual who acquired a mutation that gave this person the linguistic capacity. Its interrogatory power is limited. Science cannot even tell us if that original human was a man or a woman. In this narrative, I have relied on the revelation of sacred Scripture to propose that the first speaking human was male. He was Adam. In the end, that this first speaking human was male and not female is a theological and not a scientific claim. It is a proposal of both faith and reason.

Furthermore, though science can affirm that there was an original human and that we are all descended from this person, it cannot tell us more about *how* that happened. There are many

possible scenarios. All of them cannot be confirmed one way or the other by the scientific enterprise.

It could have been that God providentially ordered evolution so that two hominins, a male and a female, were conceived in the same community and at the same historical time with the mutations to be linguistic creatures. This is the option that I prefer because it is the most theologically fitting of all the scenarios I describe here. Significantly, it preserves the equal dignity of the man and the woman revealed in sacred Scripture since both of them were created at the same time and at the same place. It could also have been that God created Eve *from* Adam as the scriptural text describes. Both of these scenarios would preserve the historical narrative of an original human couple. They would have had children all of whom were speaking primates. They would have had children who were all human just like us.

It could also have been that God allowed Adam to mate with a non-speaking human female, with whom he had children. Some of these children would have been able to speak while others would not have been. Some of their children would have been human like us, while the non-speaking offspring would not have been. The children who spoke to each other would have mated among themselves giving rise to more speaking children.

Nonetheless, with all the possible hypothetical scenarios described above, given the advantage of speech that allow us to cooperate and to organize ourselves, the speaking individuals who would have been born would have come to dominate the entire population of *Homo sapiens*. In technical biological terms, the mutation that gave Adam the linguistic capacity would have become fixed in the human population.

Second, does this account not endorse sibling incest? This problem is not a new one. As Aquinas himself recognized, any theological account of a single original couple would have

entailed sibling marriage to ensure the survival of the human race. Thus, he acknowledges that only parent-child relationships are excluded by the natural law. Brother-sibling relationships, though excluded today by law, would have been necessary early in the history of our species.²

Third, how should we understand the interbreeding that took place between behaviorally modern humans and their archaic hominin contemporaries, the Neanderthals and the Denisovans? This would have been matings between individuals who were both biological human but not both human persons like us. Theologically understood, these would be instances of bestiality of a sort. However, because of the similarities in appearance and in behavior among these closely-related hominin species, again both of whom are biologically but not personally human, the genetic similarity would have also made these matings fruitful in a way not possible today. In my view, the taboo against bestiality may not apply here precisely because of their biological compatibility.

Nicanor Pier Giorgio Austriaco, O.P.

2. See *ST III*, q. 54, a. 4.