

Evolution and Creation—A Response to Michael Chaberek’s Critique of Theistic Evolution

MARIUSZ TABACZEK, O.P.

*Pontifical University of St. Thomas Aquinas
Rome, Italy*

Translated by Monika Metlerska-Colerick

Introduction

Michael Chaberek’s critique of my “Afterword” to the Polish edition of *Thomistic Evolution: A Catholic Approach to Understanding Evolution in the Light of Faith* is essentially focused on three points. First of all, Chaberek questions my thesis supporting the compatibility of evolutionary theory with the Christian faith in creation. Secondly, he discounts the possibility of reconciling evolution with the Aristotelian-Thomistic philosophical tradition. Finally, he provides arguments undermining the theory of evolution as the best scientific explanation for the diversity of species observable in the world.¹ Because I do not undertake an analysis

¹ Both my Afterword (in English) to the Polish Edition of *Thomistic Evolution: A Catholic Approach to Understanding Evolution in the Light of Faith* (1st ed. 2016) by Nicanor Pier Giorgio Austriaco, O.P., James Brent, O.P., Thomas Davenport, O.P., and John Baptist Ku, O.P. and Chaberek’s critique of it, “Where do Substantial Forms Come From?—A Critique of the Theistic Evolution of Mariusz Tabacek,” are published in this issue of the English edition of *Nova et Vetera*, on 225–37 and 239–54, respectively. My response was originally published in Polish as Mariusz Tabacek, “Ewolucja a dzieło stworzenia—odpowiedź na polemikę Michała Chabereka z teistycznym ewolucjonizmem,” *Roczniki Filozoficzne [Annals of Philosophy]* 68, no. 4 (2020): 217–49, while his critique was published as Michał Chaberek, “Skąd pochodzą nowe formy substancjalne?—Polemika z teistycznym ewolucjonizmem w ujęciu Mariusza Tabaczka,” *Roczniki Filozoficzne [Annals of Philosophy]* 68, no. 4 (2020): 199–215. The

of strictly biological problems in the “Afterword,” in the present response I will concentrate on the first two points only.² I trust that engaging in a discussion with Chaberek’s views in this respect provides an opportunity to broaden and clarify my position regarding the issue which is the subject of our dispute. To begin with, I would like to stress that, in exploring the topic from the perspective of the Aristotelian-Thomistic tradition of philosophy and theology, I am moving in the sphere of possible interpretations and new approaches. Therefore, I do not treat the aforementioned tradition in an inflexible and dogmatic manner.³

English translations were sponsored by the Templeton Foundation (Grant ID 61360 *Thomistic Evolution and the Defense of Faith and Reason: Engaging Catholic Families, Philosophers, and Theologians*). Some of the original Polish bibliography references were changed and updated to make the text more relevant for an English-speaking audience. All three pieces have undergone minor editing to conform to the journal’s style. Citations of all three use the page numbers of the publications in the present journal issue, and abbreviations for the references to the works of Aristotle, Augustine, and St. Thomas, including published critical editions and English-translation editions used in citations, can be found in the bibliography section of the introduction to this interchange in the present journal issue. I would like to express my thanks to the editors of the Polish *Annals of Philosophy* for inviting me to respond to Chaberek’s critique of my take on theistic evolutionism. I would also like to express my gratitude to Krzysztof Ośko, O.P., for his valuable remarks and suggestions, as well as the shared reflection on some of the questions addressed in the present text.

I further develop ideas presented here in Mariusz Tabaczek, “The Metaphysics of Evolution: From Aquinas’s Interpretation of Augustine’s Concept of *Rationes Seminales* to the Contemporary Thomistic Account of Species Transformism,” *Nova et Vetera* 18, no. 3 (2020): 945–72; Tabaczek, “Does God Create through Evolution? A Thomistic Perspective,” *Theology and Science* 20, no. 1 (2022): 46–68; and in my latest monograph entitled *Theistic Evolution: A Contemporary Aristotelian-Thomistic Perspective* (Cambridge: Cambridge University Press, 2023).

- ² Without attempting to defend the theory of evolution on the ground of the natural sciences, I would only like to point out the basic methodological weakness of Chaberek’s argument. He bases his rejection of the macroevolution theory on the authority of science, claiming that his position is supported “with many facts discovered by contemporary science” (my translation from his original critique, “Skąd pochodzą nowe formy substancjalne?” [215], translated in this issue of *Nova et Vetera* as “with data provided by contemporary science” [243]). At the same time, the examples he gives are not so much a demonstration of facts, as their interpretation carried out by authors centered around the milieu of the proponents of the intelligent design theory—a minority group among scientists. Thus, the only conclusion which can be drawn from his argumentation is that, although there is a broad consensus as to the theory of evolution among scientists, one can indeed come across scholars who have some objections against it.
- ³ At this point, it is worth mentioning that an article taking issue with the thesis put forward by Chaberek has been recently published in *Theology and Science*, touching

The Definition of Creation

I should start my response to Chaberek's critique by invoking the definition of creation as elaborated by Aquinas. After all, it seems that the disagreement referred to in the present article focuses, to a large extent, on the comprehension of the divine act of creation. My views on this matter are not, in my estimation, a significant alteration of the teaching of St. Thomas. Rather, they are an attempt at drawing conclusions from some of his intuitions regarding creation, which appear in various sections of the body of his work.⁴

According to St. Thomas, the word "creation" (*creatio*) has two crucial and inextricably linked meanings: (I) creation in an active sense (divine action) and (II) creation in a passive sense (receiving divine action). Within the scope of the first meaning, St. Thomas distinguishes between: (Ia) the primary act of creation, defined as bringing the entirety of being into existence out of nothing (*ex nihilo*), without any prior existing matter, and (Ib) maintaining contingent beings in their existence and essence. The consequence of (Ia) and (Ib) is contingent beings' full dependence on God regarding what they are and the fact that they are (exist), which determines the essence of creation in the passive sense (II).

Regarding (Ia), St. Thomas—in a neo-Platonic vein, in support of the claim that nothingness cannot be the object of God's action in the act of creation—states that "we must consider not only the emanation of a particular being from a particular agent, but also the emanation of all being from the universal cause, which is God; and this emanation we designate by the name of creation" (*ST* I, q. 45, a. 1, corp.). It is worth adding here that, according to St. Thomas, the matter, which is the result of the act of creation, is not indefinite, as is assumed by Chaberek when he refers to creation as the bringing out of nothing "of a certain primordial matter of an indefinite form."⁵ On the contrary, Aquinas states explicitly that "primary matter was not created altogether formless, nor under any one common form, but under

on some of the questions addressed by me in the present response; see James Hofmann, "Some Thomistic Encounters with Evolution," *Theology and Science* 18, no. 2 (2020): 324–46.

⁴ Unlike my adversary, I believe that both the argumentation and the language used by St. Thomas Aquinas are not always fully precise, clear, and coherent, which is inevitable in the case of an author of a body of work of a magnitude similar to that of St. Thomas's, especially if we take into account the development of his thought over the course of his scholarly path, and the specificity of the method of practicing theology he employed.

⁵ Chaberek, "Where do Substantial Forms Come From?," 242 in the present journal issue. From the metaphysical point of view, the substantial form (SF) cannot be indefinite. Its essence relies on designation (being designated).

distinct forms" (*ST I*, q. 66, a. 1, corp., ad 2), enumerating, at this point, the forms of the four elements: earth, water, air, and fire.

In reference to (Ib), St. Thomas defines the divine act of maintaining contingent beings in existence and essence (in *the fact that* they are, as well as in *what* they are) as *conservatio rerum*. What is more, even though he emphasizes that "the preservation of things by God is a continuation of that action whereby He gives existence" (*ST I*, q. 104, a. 1, ad 4), Aquinas does not employ the currently popular concept of continual creation (*creatio continua*). It seems that another concept, appearing within the theology of creation, is closer to his philosophical thought, namely that of *conservatio a nihilo*—preserving contingent beings from slipping into nothingness.

Regarding (II), St. Thomas—stressing the crucial role of contingent beings' dependence on God in existence—claims that this fact is of the utmost importance for our understanding of what creation is. We read in *De potentia*, q. 3, a. 3, corp., that "creation is really nothing but a relation of the creature to the Creator together with beginning of existence."⁶ Formulated thus, the primary act of creation appears to be—to some extent—subordinate to the relation of the created being's dependence on God. *Prima creatio* is only the beginning of the existence of matter, whereas the essence of being created is the relation of the originated matter's (as well as, let us add, of the immaterial beings', i.e., angels') dependence on the Creator *secundum totam substantiam*.⁷

⁶ In response to objection 6 of the same article, St. Thomas explains: "Creation denotes this relation [of being dependent on God in existence] together with inception of existence: hence it does not follow that a thing, whenever it may be, is being created, although its relation to God ever remains. Yet even as the air as long as it is light is illuminated by the sun, so may we say with Augustine (*Gen. ad lit.* viii, 12) that the creature, as long as it is in being, is made by God. But this is only a distinction of words, inasmuch as creation may be understood with newness of existence or without." It should be emphasized yet again that even if we wanted to speak of the continual creation of a given contingent being, it should be understood as a continual dependence on God in existence, not as an occasionalist notion of a continual creation anew *ex nihilo* together with all the changes which, only in the eyes of the observer, might generate an illusion of the continuity of such a being's existence in space and time.

⁷ At this point, it is worth noticing that, while mentioning the status of being created in terms of (II), St. Thomas most often speaks of the dependence on God in existence as if omitting the fact of being dependent on God in essence. Assuming that the existence of created beings is not identical with their essence, the definition of creation in terms of (II) seems to be much more accurate, as a dependence on God in relation to the entire substance of a thing (both in terms of its existence, as well as essence). Among the few places, in which Aquinas argues in the above-mentioned way, see *ST I*, q. 45, a. 3, sc, where he speaks of creation, "whereby a thing is made according to its whole substance"

Evolutionary Processes and Creation

Keeping in mind St. Thomas's understanding of the divine act of creation in terms of (I) and (II), let us turn to Chaberek's criticism of the interpretation I suggested in the "Afterword" for *concursum divinum naturalis*, that is, the "cooperation" between the causality of God and that of his creatures in the origination of new species by way of evolution, understood within the Aristotelian-Thomistic philosophical and theological system. As stated in my "Afterword," I am of the opinion that, as such, this "cooperation" calls for an elaboration or clarification of St. Thomas's original position, at least in four of its essential aspects: (1) recognizing the possibility of the emergence of new species, that is, acknowledging that the perfection of the universe can increase every day not only in terms of the number of individual beings, but also as regards the number of species; (2) emphasizing the fact that God's initial act of creation is limited to the derivation of matter of the lowest degree of complexity out of nothing (*ex nihilo*); (3) recognizing the fact that the processes of chemical, biochemical, and biological evolution belong to the work of adornment (*opus ornatus*), whose subsequent stages spread out across the entire history of the universe and, therefore, are not limited to a finished and past time period; (4) acknowledging that God's direct intervention in the creation of the first representatives of plant and animal species (with the exception of man) is not necessary.⁸

Chaberek suggests that (1) and (3) are inconsistent with the ideas of Aquinas and with classical theism, accusing me of stating that "evolution continues," whereas "from the Christian perspective—the divine work of creation had already finished." This objection would be justified if we assumed that evolutionary processes are indeed of a creative character. I admit that words to that effect appear several times in the article that I published in the *American Catholic Philosophical Quarterly*, as well as in the introduction to my "Afterword" in the book written by the American Dominican friars.⁹ But a careful reading of both texts points to the direction my reflection is headed, namely toward drawing a fundamental distinction

(*secundum totam substantiam*), and *De potentia*, q. 3, a. 2, obj. 2, where creation is understood as an act "whereby a thing is made as to its entire substance" (*per quam fit [res] secundum totam substantiam suam*). See also *In II sent.*, d. 1, q. 1, a. 2, sc.

⁸ See Tabaczek, "Afterword," 234–35.

⁹ See Mariusz Tabaczek, "What Do God and Creatures Really Do in an Evolutionary Change? Divine Concurrence and Transformism from the Thomistic Perspective," *American Catholic Philosophical Quarterly* 93, no. 3 (2019): 462–66, 480–81; Tabaczek, "Afterword," 226.

between, on the one hand, evolutionary changes and the formation of new kinds of inanimate and animate beings from already existing matter, and, on the other hand, the divine act of creation, which results in—as already mentioned—the origination of the most simple material substances and of purely spiritual beings (angels) out of nothing. In other words, the processes of the continuous transformation of matter, as a result of which new beings emerge, whether belonging to the already existing natural kinds or originating new natural kinds, are not creative processes *sensu stricto*, but belong to the work of divine governance of the world (*gubernatio*). Were we to define them as creative processes, it would need to be immediately added that this is only in a metaphorical or analogical sense.¹⁰

In this way, my approach becomes essentially different from the stance taken by many theistic evolutionists who generally treat the processes of evolution as creative per se or refer to them as *creatio continua*, the latter of which is also inadequate in light of the theology of Aquinas, for whom *creatio continua* (a term that he himself does not employ) would signify maintaining contingent beings in existence (*conservatio a nihilo*) and not the formation of new beings from preexisting matter.¹¹ Consequently, we should consider inadequate and incorrect the view—popular among theistic evolutionists that the causal action of the already existing beings within evolutionary processes is participation in the divine act of creation. This view stands in clear contradiction to St. Thomas's position, as for instance when he says: "So therefore it is impossible for any creature to create, either by its own power or instrumentally—that is, ministerially" (*ST I*, q. 45, a. 5 corp.).¹²

¹⁰ St. Thomas agrees with the statement that the lack of a determined SF signifies nonbeing, but only in some respects. As a consequence, he is of the opinion that we should distinguish generation, "whereby a thing is made as to a part of its substance" (meaning a specific form, whose lack is a nonbeing, in some respects), from creation, "whereby a thing is made as to its entire substance" out of complete nonbeing (*De pot.*, q. 3, a. 2, obj. 2).

¹¹ For example, we could cite the views expressed by Denis Lamoureux, who claims that "the Father, Son, and Holy Spirit created the universe and life through an ordained, sustained, and [divine] design-reflecting evolutionary process." While formulating his ideas, Lamoureux states that the word order in the term "theistic evolution" is not the most fortunate one, because it "places the process of evolution as the primary term, and makes the Creator secondary as merely a qualifying adjective." Hence, he suggests that the terms "theistic evolution" and "theistic evolutionism" be replaced with "evolutionary creation" and "evolutionary creationism." See Denis O. Lamoureux, "Evolutionary Creation: Moving beyond the Evolution versus Creation Debate," *Christian Higher Education* 9, no. 1 (2009): 28–30.

¹² In *De pot.*, q. 3, St. Thomas devotes a whole article (8) to answering the question "whether God works in nature by creating; and this is to ask whether creation is

In this context (2) does not appear to be a baseless statement, as argued by Chaberek,¹³ if we assume that (in keeping with Aquinas's intuition expressed in his commentary on the *Hexameron* in the *Summa theologiae*) the emergence of plants and animals (as well as inanimate beings) is not a fruit of the creative act (they do not come into existence *ex nihilo*), but rather is a result of the substantial changes occurring in the already existing matter. As I have stressed in my publications on more than one occasion, it is of considerable significance that, when referring to *opus distinctionis* and the accompanying emergence of plants, and when referring to *opus ornatus* and the accompanying emergence of animals, St. Thomas makes use of the category of *productio* or *formatio* rather than *creatio*. This last category appears again in reference to the origin of man, which indeed is of a creative character, as regards the bringing forth into existence *ex nihilo* of the human soul that forms the primary matter (PM) in the organic human body.¹⁴

mingled in the works of nature." Addressing a problem posed thus, Aquinas states in sc 1: "The work of creation is distinct from the work of government and that of propagation. Now that which is done by the action of nature belongs to the works of government and propagation. Therefore creation is not mingled with the work of nature." My view on this issue is clarified and elaborated on in Tabaczek, "Does God Create through Evolution?"

¹³ Chaberek, "Where Do Substantial Forms Come From?," 242.

¹⁴ Man, indeed, is a being of a special kind. Both his coming to existence (origin) and his death differ from the creation or coming to existence of contingent beings, as well as from all of the changes they can be subject to. The creation of man differs from the creation of primordial matter, which—not being a change—consists in bringing out into existence *ex nihilo* both the primary matter (PM) and the SFs of elements in the state of substantial composition (on coming to existence, PM is formed by the SFs of elements). In the origin of man (the first parents and all of their descendants), we speak of the divine act of creation which is simultaneously accompanied by change. God creates *ex nihilo* the human immortal soul, which during the substantial change—i.e., fertilization—forms the PM underlying the gametes. As such, they cease to exist on giving rise to a new organism.

The death of a human, on the other hand, is not an ordinary substantial change in which the SF of substance S_1 ceases to form the PM which underlies it, which, in turn, becomes simultaneously formed by a new substantial form of substance S_2 . As a result of death, PM becomes indeed formed by a new SF, or rather many substantial forms of the substances that can be found in a corpse which strikingly resembles an organic human body, and is characterized by an accidental unity. At the same time, the Christian faith teaches us that—in contrast to the SFs of all the other inanimate and animate contingent beings—the human soul, crossing the boundary of death, continues to subsist, maintaining the substantial character and the individual identity that is a continuation of the identity of the human being which this particular soul used to animate. As a consequence, it appears that the human death should be treated as a separate category of change, situated, as it were, between the substantial and the

Of course, St. Thomas is not entirely precise and consistent in this regard. In his works, we come across places where, in reference to both the primary work of creation and the context of the origin of man, he makes use of the category of *productio*, and also places in which he describes *opus ornatus* in the categories of *creatio*.¹⁵ That is why the aim of (2) is to draw a clear and decisive distinction between the divine act of creation (*opus creationis*) and the processes in the course of which new beings emerge from the already existing matter (*opus distinctionis* and *opus ornatus*).

In my opinion, such clarity is what Chaberek's reasoning also lacks when he introduces the concepts of *prima creatio* and *secunda creatio*, referring to the latter as the shaping of a "primordial matter of an indefinite form."¹⁶ It needs to be observed that the shaping of the already existing matter is a change, whereas St. Thomas stresses clearly and distinctly that creation is not a change. What is more, such an understanding of *creatio*—which, as such, is *ex definitione* a divine act—would imply God's direct intervention in the natural causal chain, which is rightly criticized by Chaberek when he says that "there is no intervention in the work of creation."¹⁷

The same remark also serves as a response to the question concerning point (4), which is about "the grounds" on which I limit "God's direct creative action to only two moments: the first act of creation (*creatio ex nihilo*) and the creation of the human soul."¹⁸ My suggestion for introducing

accidental change. What approximates it to substantial change is the fact that the nature of the individual substance, which "passes" through it, undergoes a radical change. The thing that approximates it to the category of accidental change, on the other hand, is the fact that the identity of the same individual who "experiences" it is maintained. This indicates the unique metaphysical status of the human being.

¹⁵ For instance, in *ST* I, q. 45, a. 4, ad 3, we find a definition of creation as a production of the whole being (*creatio est productio totius esse*). In the introduction to question 90 of the same *pars* of the *ST*, while enumerating the points he is to address in it, St. Thomas speaks of "production of man [Adam] as such" (*de productione ipsius hominis*), both as regards his body and his soul (*de productione hominis quantum ad animam . . . quantum ad corpus viri*). He uses the same category in reference to the origin of the first woman (*quantum ad productionem mulieris*). In reference to the human soul, Aquinas also uses the term "making" (*utrum anima humana sit aliquid factum*), putting it together with creating (*supposito quod sit facta, utrum sit creata*). At the same time, when in *De pot.*, q. 5, a. 9, ad 8, St. Thomas mentions *opus ornatus*, which, in line with the reasoning presented above, is not creation *sensu stricto*, he refers to it as "the work of creation whereby the earth was adorned with animals and plants" (*opus creationis per ornatum animalium et plantarum*).

¹⁶ Chaberek, "Where Do Substantial Forms Come From?" 242.

¹⁷ Chaberek, "Where Do Substantial Forms Come From?" 243.

¹⁸ Chaberek, "Where Do Substantial Forms Come From?" 243.

a limitation in this respect is a consequence of being consistent in my use of St. Thomas's definition of creation, and is not grounded in science—in terms of relating to the natural sciences and being an attempt to “subordinate Christian faith to the theories of evolution”—which is what Chaberek implies.¹⁹ At the same time, with reference to the scriptural argument that he formulates at this point, it needs to be noted that, although Genesis indeed speaks of the “shaping of the world,” there is no mention there of the “creation of species and the first human body.”²⁰ A close reading of the Genesis's first creation narrative demonstrates that the term “creation” does not appear in relation to the origin of all species of plants and animals. It can be found, however, in the opening verse, in the context of the primary act of the creation of matter of the lowest possible degree of actualization.²¹ Furthermore, in the description of the origin of the human body, there is no mention of creating, but of the “making” of Adam and Eve (Gen 1:26),

¹⁹ Chaberek, “Where Do Substantial Forms Come From?,” 244. What should be noted here is the recurrent trait of Chaberek's texts, and one typical also for anti-evolutionist circles, namely the ease with which methodological naturalism is identified with the ontological naturalism proper to the natural sciences, and in an extreme variety of that (Chaberek uses the name “consistent naturalism”). Reasoning of this kind is a far-reaching simplification which does not take into account the complexity of the discourse within the natural sciences, the philosophy of science, and the philosophy of the particular fields of natural science, or of these in relation to theology.

²⁰ Chaberek, “Where Do Substantial Forms Come From?,” 244.

²¹ “Let the earth grow plant life. . . . Let the waters swarm with living things, and let birds fly above the earth up in the dome of the sky. . . . Let the earth produce every kind of living thing: livestock, crawling things, and wildlife” (Gen 1:11, 20, 24). It is true that, while relating the emergence of fish and birds (Gen 1: 21), the author employs the term “creation” (“God created . . .”); however, it seems that this term should be interpreted along with St. Augustine, in reference to the concept of the potentiality of matter. This interpretation stems directly from the Old Latin edition of the Book of Genesis, available to Augustine, in which the second description of creation (as translated to English in Douay-Rheims) begins in the following way: “These are the generations of the heaven and the earth, when they were created, in the day that the Lord God made the heaven and the earth: and every plant of the field before it sprung up in the earth, and every herb of the ground before it grew” (Gen 2:4–5). It is worth noting that this translation is closer to the Hebrew text than modern translations. The concept of the creation of beings before they appeared on earth can be applied to both plant and animal species. In the same vein, St. Augustine writes about the origin of man thus: “There can be no doubt, then, that the work whereby man was formed from the slime of the earth and a wife fashioned for him from his side belongs not to that creation by which all things were made together, after completing which God rested, but to that work of God which takes place with the unfolding of the ages as He works even now” (*Gen. ad lit.*, VI, 4).

or of forming the first man “from the topsoil of the fertile land” and of the woman being “fashioned” with the rib taken from Adam” (Gen 2:7, 22). All of the above should be interpreted in the categories of change, the object of which is preexisting matter.²²

Returning to St. Thomas, it is worth noting, at this point, that he himself does not draw a precise distinction between *prima* and *secunda creatio*, as is suggested by Chaberek, who says: “St. Thomas distinguishes between the first creation and the second creation, i.e., the supernatural shaping of the world over the course of time to which the Book of Genesis refers as the six days.”²³ Analyzing the references to St. Thomas’s works that accompany the argument provided by Chaberek, we notice that what is actually mentioned in *De potentia*, q. 3, a. 18, ad 12, is “the making of creatures” (*factione*) in terms of their formation (*formatione*) and “not as to their first creation” (*prima creatione*). In his reply to the eleventh objection of the same article, *prima creatione* is similarly distinguished from formation (*formatione*). In the collection of texts in the commentary on the *Sentences* II, d. 12, q. 1, a. 5, where the subject of creation appears indirectly, Aquinas refers only to the fact that “through the work of creation [*opus creationis*] the whole creation [*creatura*] was established with regard to its formless being [*esse suum informe*].” There is no mention here of the distinction between *prima* and *secunda creatio*, and *opus ornatus* is once again described in terms of production.²⁴ *De potentia*, q. 5, a. 9, ad 8, is an exception, because here, as I have already pointed out (see note 15 above), St. Thomas indeed speaks of “the work of creation whereby the earth was adorned with animals and plants,” Nevertheless, in order to be consistent with the above-mentioned definition of creation given by Aquinas, it needs to be acknowledged that, here, the term “creation” in reference to *opus ornatus* has an analogical meaning.

Does the Origin of a New Species Require Divine Intervention?

Distinguishing the work of creation (*opus creationis*) from the changes occurring within the already existing matter that result in the emergence of new kind of beings, St. Thomas refers to St. Augustine’s idea, expressed in his

²² Needless to say, this change is accompanied by the creation of the human soul *ex nihilo* (see note 14 above).

²³ Chaberek, “Where Do Substantial Forms Come From?” 242n7.

²⁴ As far as I know, St. Thomas never uses the concept of *secunda creatio* as a separate one and in contrast to *prima creatio*. The status of an unformed *esse* should be understood in the categories of existing in the potentiality of a primitive matter, which, simultaneously, is of a substantial character.

De Genesi ad litteram libri duodecim, that we should acknowledge that “God made everything together without any moments of time intervening” (*Gen. ad lit.* 5.11). Augustine then adds: “When God made all things together, [the world] had all things which were made in it, . . . not only heaven with sun, moon and stars, . . . but also the beings which water and earth produced in potency and in their causes before they came forth in the course of time” (5.21). In other words, in its first instantiation, the world was in a seminal state (see 5.40–41). Obviously, what St. Augustine makes reference to is the Stoic concept of *rationes seminales*, seminal reasons, through which he expresses his metaphysical intuition regarding the potentiality of matter.²⁵

As we know, in the *Summa theologiae*’s commentary on the *Hexameron*, St. Thomas follows the intuitions of St. Augustine, as noted in my “Afterword.”²⁶ What is especially challenging for both theologians is determining whether the actualization of *rationes seminales* occurs spontaneously in favorable environmental conditions, or whether it requires God’s direct intervention, which is—let it be stressed once again—nevertheless not of a creative character, but rather an expression of the special action of divine providence and divine governance of the world (*gubernatio*). Having considered both possibilities, St. Augustine states that they should be adopted simultaneously, also adding that man most certainly originated as a result of supernatural intervention on the part of God.²⁷

Aquinas claims that the origination of plants can be perceived to be a

²⁵ St. Augustine makes use also of other terms to refer to the seminal reasons: *causales rationes*, *rationes primordiales*, *primordia causarum*, and *quasi semina futurorum*.

²⁶ Tabaczek, “Afterword,” 232. In his theology of creation, Aquinas refers to two interpretational traditions of the *Hexameron*: (1) the more literal one, which he ascribes to St. Ambrose (this tradition was also followed by St. Irenaeus of Lyon, St. Gregory of Nazianzus, St. Gregory of Nyssa, and St. Basil the Great), and (2) the allegorical one, associated mainly with St. Augustine (this tradition was also followed by Athenagoras of Athens, Tertullian, St. Bonaventure, Albert the Great, and, among the later authors, Roger Bacon, and Nicolas Malebranche). The reading of St. Thomas’s works leaves no doubt that St. Augustine’s proposition is closer to his views. See *ST I*, q. 71, a. 1, corp.; *ST I*, q. 72, a. 1, corp.; *De pot.*, q. 4, a. 2, ad 28; *In IV sent.*, d. 48, q. 2, a. 1, ad 3; *ST I*, q. 62, a. 3, corp.; q. 74, a. 2, corp., ad 1 and ad 2.

²⁷ St. Augustine, in the spirit of Platonic dualism, differentiates the origin of the human body, which he describes in terms of formation, from the origin of the human soul, which is the result of creation *ex nihilo*. With reference to all the other organisms, Augustine states: “We must conclude, then, that [they] were created to exercise their causality in either one way or the other: by providing for the ordinary development of new creatures in appropriate periods of time, or by providing for the rare occurrence of a miraculous production of a creature, in accordance with what God wills as proper for the occasion” (*Gen. ad lit.*, VI, 14).

result of propagation (*propagatio*), which belongs to the domain of God's governance of the world (*gubernatio*), and therefore takes place as part of the natural processes to which matter is subject: "When [Genesis] says, *let the earth bring forth vegetation, plants yielding seed* (Gen 1:11), we are not to understand that at that time [on the third day] plants were produced [*producere*] in their proper nature. Rather, at that time the earth was given the germinative power [*virtus germinativa*] for the production [*ad producendum*] of plants in the work of propagation [*opere propagationis*]."²⁸

The question of Aquinas's views regarding the first representatives of animal species is a more complex one. On the one hand, in the *Summa theologiae*, St. Thomas appears to follow St. Augustine, saying that, "at the first beginning of the world the active principle was the Word of God, which produced animals from material elements, either in act [*in actu*], as some holy writers say, or virtually [*virtute*], as Augustine teaches"—which, as with the case of plants, can be interpreted as an actualization that does not require direct divine intervention.²⁹ On the other hand, St. Thomas asserts that "the first human body was of necessity made [*formaretur*] immediately by God," while his soul "can be made only by creation." Aquinas adds that this way of coming into existence "is not true of other [i.e., non-human] forms," which can be interpreted as a claim at least *allowing* for the possibility of new animal species emerging by way of a spontaneous actualization of the potentiality of matter by substantial forms (SFs) proper for a new natural kind.³⁰

Nonetheless, one might say that what St. Thomas means at this point is the origination of SFs belonging to the already existing natural kinds, which would not relate to the emergence of new species. Indeed, in another passage, Aquinas states that "the first hypostases were immediately created by God, such as the first man, the first lion, and so forth."³¹ Interestingly, in the very same place, St. Thomas simultaneously stresses that creatures cannot be causes, or exercise "causality over the whole species, as the sun is

²⁸ *In II sent.*, d. 14, q. 1, a. 5, ad 6. He continues here: "But to others it seems that at that time plants themselves were produced [*productae*] as well [as actualized]. In either of these approaches, however, the production of plants fittingly pertains to the work of distinction. For it is sufficient for their sprouting [*pollulatio*] that they have the power of heaven in place of a father and the power of earth in place of a mother, as the Philosopher says." See also *De pot.*, q. 4, a. 2, ad 28 (by Vincentius Castronovo). Obviously, the power of heaven, i.e., the celestial bodies, is, according to St. Thomas, a source of a special kind of causality—it does not seem, however, that Aquinas identifies it with the action of God himself.

²⁹ *ST I*, q. 71, ad 1. See also *In II Sent.*, d. 14, q. 5, ad 6.

³⁰ *ST I*, q. 91, a. 2, corp.; q. 90, a. 2, corp.

³¹ *In II sent.*, d. 1, q. 1, a. 4, corp.

a cause in the generation of a man or a lion,” which, once again, brings up the question concerning the character of the causality of celestial bodies (see note 28 above). If we assume that they are secondary causes, then this text from St. Thomas would suggest that they could be the causes of the origin of entire classes of beings (new species).

All of the above indicates the complexity of the topic, which does not receive an unambiguous and reliable answer (or interpretation) in the works authored by St. Thomas. This is why the general statement proposed by Chaberek, who attributes to Aquinas a thesis which suggests that the “shaping of the world over the course of time” is an entirely “supernatural” and “direct” action of God, appears to be a serious and unjustified simplification.³²

Aristotelian-Thomistic Substantialism

Moving to the domain of strictly metaphysical reflection, I would first like to address certain concerns formulated by Chaberek with respect to my understanding of substance—both in the individual aspect and in terms of species membership. I admit that my approach in this regard, as presented in the “Afterword,” is not sufficiently clear and precise.³³ Therefore, I would like to state explicitly that what I mean by “substance” is an autonomously (in contrast to accidents and parts) existing individual.³⁴ A material substance understood thus—metaphysically speaking—is a compound of PM and SF, the latter of which is the principle actualizing matter and determining what a given being is. A substance is further specified by *accidental forms* (AFs), which modify it “following upon” the SF and are of a “complementary” character in relation to the SF (*ST I*, q. 7, a. 3, corp.).³⁵ As far as belonging

³² See Tabaczek, “The Metaphysics of Evolution.” In “What Do God and Creatures Really Do in an Evolutionary Change?” (475–77), I reflect on the possibility of God’s direct intervention being necessary for the occurrence of speciation. It would consist in God granting unity to a complex network of cause-and-effect relationships within such a change. Regarding the role of the causality of celestial bodies in St. Thomas’s approach, also in the context of biological evolution, see Brian T. Carl, “Thomas Aquinas on the Proportionate Causes of Living Species,” *Scientia et Fides* 8, no. 2 (2020): 223–48.

³³ Among other things, on account of the limited size of that text and its popular-science character.

³⁴ See *ST I*, q. 3, a. 5, ad 1. “Primary substance” (*substantia prima*) understood thus needs to be distinguished from “secondary substance” (*substantia secunda*), which is nature in a general meaning.

³⁵ From the theological point of view, each individual being is a realization of an exemplary idea in the mind of God: “As an exemplar, . . . it has respect to everything made by God in any period of time” (*ST I*, q. 15, a. 3, corp.). Thus, according to Aquinas, exemplarism

to a particular species is concerned, in line with Aristotelian-Thomistic essentialism, it is determined by the fact that the SF of a given individual being is always the SF of a specific type, which means that it is characterized by certain strictly defined features and dispositions, that is, the principles of motion and rest (mutability and permanence), action and reaction.³⁶ Hence, species exist in reality, yet not as separate entities, but as specific ways of being and acting, realized in individual and changeable organisms immersed in time. Species realism understood thus is fundamentally different both from the extreme realism presented by the Platonic school, in which universals (i.e., species) are treated as separate entities, and from nominalism, which treats them as useful fictions.

Chaberek's position on this matter appears to suggest that beings belonging to the same species have numerically one SF present in them, but what is lacking in his reasoning is an explanation of how such "being present in" is supposed to operate. It would appear that what speaks for the above interpretation is Chaberek's distinction between "the individual form of a given being, . . . [which is altered by] various accidental changes" and the "substantial form, . . . [which is what] remains unchanged in the being," together with his accompanying assertion that "the substantial form of a given species really exists (*in re*) in every individual being."³⁷ This statement proves that Chaberek fails to understand what moderate realism is, in accordance with which there is no such category as the SF of a species, and one and the same being cannot possess two forms: an individual and a substantial/generic one (whichever way they should be understood, Chaberek does not provide a clear definition).

Along the same lines, in rejecting the concept of biological macroevolution, Chaberek defines it as resulting in "entirely new substantial

is of an individual character—it is not generic (species-oriented). At the same time, it needs to be stressed that exemplars are not identical to the SFs of particular beings. See Gregory T. Doolan, *Aquinas on the Divine Ideas as Exemplar Causes* (Washington, DC: Catholic University of America Press, 2008).

³⁶ The point of departure for such an understanding of the metaphysical approach to moderate realism regarding species is the observation of nature through the senses, which indicates that certain sets of individual beings have the same structure, or better still, the same set of key features determining their individual identity (whereby one and the same individual cannot change their species membership). As a consequence, the general names, given on the basis of discovering a specific structure or a set of features, express the essence of individual beings, which we classify as a separate systematic category.

³⁷ Chaberek, "Where Do Substantial Forms Come From?," 246–47.

forms, such as a cat, an eagle, or a whale.”³⁸ A similar way of thinking is also visible in his criticism of theistic evolution based on the example of a chicken’s death, when Chaberek claims that the death of a single chicken does not change the chicken species.³⁹ One must agree that the death of an individual chicken does not alter the essence that we recognize in particular chickens while forming a concept of a chicken. However, it does not follow that the inalterability of the content of the concept of “chicken” calls for the existence of an SF of a chicken species which would differ from the individual SFs of particular chickens. The mistake that Chaberek makes at this point consists in hypostatizing concepts and attributing to substantial form the characteristics of a universal. In this way, his views converge with the stance taken by Plato, which Chaberek wants to avoid.⁴⁰

In this context, we should bring up one of Chaberek’s key criticisms of my approach: “The above mistake is also made by Tabaczek, who expressly rejects the existence of substantial form in specific individuals. In the light of his interpretation, the substantial form exists in the mind of God and it becomes realized only in particular beings as changeable individual forms.”⁴¹ In formulating this criticism, Chaberek refers to the following statement from my “Afterword” regarding the SFs: “These forms are a realization of exemplary ideas in God’s mind.”⁴² Responding to this charge, I would first point out that what Chaberek assigns to me is a thesis I do not support.

³⁸ Chaberek, “Where Do Substantial Forms Come From?” 248.

³⁹ Chaberek, “Where Do Substantial Forms Come From?” 246.

⁴⁰ At this point, it is worth referring to the approach to this problem suggested by Giovanni Reale, who highlights Chaberek’s mistake with even greater clarity: “Yet it is appropriate to point out that the Aristotelian *eidos* has two aspects: one of these is *metaphysical* as we have seen, the other is the aspect that we may call *logical*. The Stagirite does not analyze and emphasize the two aspects and their relative differences, but he moves in various instances from one to the other without giving any sign of difficulty. We note also that for linguistic reasons we emphasize the differences because once again we are forced to translate *eidos* in two different ways: sometimes with the term *form* and at other times with the term *species*. In what concerns the metaphysical aspect of *eidos*, that is to say the form, Aristotle correctly states that it is not a universal. But what of the *eidos* in the logical sense of the species? Evidently the *species* is *precisely* *eidos insofar as it is conceived by the human mind*. And therefore it could be said that as the metaphysical structure or the metaphysical Principle, the *eidos* is not a universal; instead as it is conceived and constructed by the human mind, it becomes a universal. But let us repeat when Aristotle is concerned with emphasizing the first point he does not focus on the second aspect” (*A History of Ancient Philosophy II: Plato and Aristotle*, trans. John R. Catan [Albany: State University of New York Press, 1990], 284).

⁴¹ Chaberek, “Where Do Substantial Forms Come From?” 246.

⁴² Tabaczek, “Afterword,” 234.

Saying that SFs are realizations of ideas in God's mind is not equal to claiming that they exist in God's mind. Secondly, the argument put forward by Chaberek relies on the incorrect distinction that he draws between the hypostatized SFs and the individual forms, which he superimposes on my concept of SF.⁴³

In the context of the definition of substantialism, I would like to point to yet another crucial detail of Chaberek's argumentation. What I find completely incomprehensible is his thesis that "accidental changes alter the individual form of a given being."⁴⁴ In the classic version of substantialism, each being possesses numerically one individual SF, which is not, in any way, subject to change over the entire course of a given being's duration (existence). The only things that can alter are its accidental forms. Additionally, at this point, Chaberek makes the currently common mistake of describing causation via the post-Humean categories of causal events. According to him, what alters the "individual form" of a being are the "accidental changes." Such language is alien to classical philosophy, in which causality (that is, being a cause) belongs to the domain of entities (substances), not events.

Analogical Character of Being a Substance

Another significant aspect of Chaberek's stance on substantialism has to do with how to understand the analogical character of being a substance. From the outset, Chaberek stresses that this fact helps us to distinguish substances from "things," which "can be hardly called substances in the metaphysical sense."⁴⁵ From his subsequent argument, I conclude that his use of the colloquial expression "can be hardly called" derives from his understanding of analogy as an exclusion criterion. As a consequence, it seems that what we are looking at in the ontology proposed by Chaberek are two separate classes of material beings: substances and "things" that are not substances. Needless to say, the question that arises immediately is one concerning the metaphysical status of "things." If they are not substances, what are they? Unfortunately, Chaberek leaves this highly important point unclarified.

In this regard, Chaberek appears to be following the footsteps of a group of natural philosophers who propose to assign the status of substance only to

⁴³ Incidentally, the objections raised by Chaberek are mutually exclusive. While criticizing my position, he states that I separate the individual form from the substantial one, situating the latter in God. At the same time, he maintains that it is the very same mistake made by theistic evolutionists when they identify individual form and SF in the immanent order of the created world.

⁴⁴ Chaberek, "Where Do Substantial Forms Come From?" 246.

⁴⁵ Chaberek, "Where Do Substantial Forms Come From?" 247.

living organisms (humans, animals, plants) and elementary particles. We can use the example of Andrew G. van Melsen, who, adopting natural coherence in space and time as the criterion for a substance, claims that all inanimate beings with levels of organization higher than that of an elementary particle are the aggregates of elementary particles.⁴⁶ Chaberek's ontology lacks the precision of van Melsen's position, as well as a clear definition of the status of the beings classified as "things" that are not substances. Denying the status of being a substance to elementary particles (on his view "they are . . . elements, negations of substance"), Chaberek calls into question the ontological status of their combinations in inanimate nature.⁴⁷ The same question regards lower animals and plants, which are also denied the status of being a substance by Chaberek (contrary to van Melsen).

Returning to the question of the range of the class of beings characterized as substances, Chaberek first comes to the conclusion that it essentially constitutes a one-element set (a unit set). The only substance "in the strictest sense" is God. Giving God the status of substance, Chaberek—referring to the neo-Platonic doctrine of participation—simultaneously decides to extend the set of substances to practically all beings, claiming that "everything else is a substance only by way of participation." However, he does not clarify in what and how the said "everything else" (irrespective of how the meaning and scope of this colloquial expression should be understood) is supposed to participate.

In the subsequent steps of his reasoning, Chaberek decides to narrow down the class of substances once again. Having stated first (without any textual references) that, according to St. Thomas, the class of substances "extends from angels, past humans, animals, and plants, to compounds and elements," Chaberek adds that "elements are substances only in a very weak sense, to the degree that they, in fact, cannot be referred to as such."⁴⁸ Hence, among substances, one could count angels, all animate beings, and all inanimate beings (compounds), with the exception of elements (earth, water, air, fire).⁴⁹

⁴⁶ See chapter 4 of Andreas Gerardus Maria van Melsen, *The Philosophy of Nature*, 3rd ed. (Pittsburgh: Duquesne University Press, 1961).

⁴⁷ Chaberek, "Where Do Substantial Forms Come From?," 247–48.

⁴⁸ Chaberek, "Where Do Substantial Forms Come From?," 247. Speaking of compounds, Chaberek does not specify which compounds he refers to. As we know, the category of compounds in medieval nomenclature is different from the contemporary concept of a chemical or biochemical compound. Once again, Chaberek leaves us without providing a necessary definition.

⁴⁹ Probably, Chaberek classifies elements as belonging to the class of "things" that are not substances. Yet again, he does not take the opportunity to define their ontological status.

Still, Chaberek does not stop there. Going further, he states: “The first real substances, on the level of complex entities, are plants, and even more precisely, only the species of the so-called higher animals (or ‘perfect species’) are substances in the strict sense (St. Thomas exemplifies them with a lion and a man, hence one can infer that what he means are all mammals—probably also birds and reptiles).”⁵⁰ Thus, it transpires that, according to St. Thomas (at least in Chaberek’s interpretation), substances in the strict sense are only mammals, birds, and reptiles, which should be counted as “perfect species” (although there is no explanation in Chaberek’s text of what such perfection is supposed to consist in).⁵¹ When Chaberek speculates that birds and reptiles also belong to the “perfect species,” we find no indication as to why this should be assumed. Referring to the criteria of definitiveness, distinction, and indivisibility as the determinants of what constitutes a substance,⁵² Chaberek does not mention how they should be applied to defining the ontological status of these, as well as other types of material beings. After all, with respect both to all species of plants and animals and to artifacts, aggregates, and even elements, we can by all means speak of degrees of definitiveness, distinction, and indivisibility. Therefore, the fact that Chaberek denies some of these beings the status of a substance is arbitrary and unjustified.⁵³

Chaberek adds that the distinction, which he assigns to Aquinas, refers to “complex entities,” but he does not explain what kind of complexity he means. Is it the mereological composition described by empirical sciences, that is, the composition of artifacts and aggregates from simple inanimate beings, and the composition of living organisms from organs, tissues, cells and biomolecules, and so on? Or is it rather the metaphysical complexity? In the case of the mereological composition—setting aside the question of reducing complex beings to the sum of their parts, which is inconsistent with the Aristotelian-Thomistic approach—the boundary proposed by Chaberek is arbitrary and marked by ignorance of natural sciences. After all, what are

⁵⁰ Chaberek, “Where Do Substantial Forms Come From?,” 247.

⁵¹ St. Thomas appears to define the aforementioned perfection in relation to the diversity of organs: “Perfect animals have the greatest diversity of organs; plants, the least” (*SCG* II, ch. 72; see also *ST* I, q. 76, a. 5, ad 3; q. 76, a. 8). It must be admitted that a criterion defined thus is not very precise.

⁵² Chaberek, “Where Do Substantial Forms Come From?,” 247.

⁵³ In other words, when defining substance as what is “most definite, most distinct and most indivisible,” and the beings that are not substances as “most divisible, mixed and indefinite,” Chaberek does not specify the limits of definitiveness, distinction from other beings, or indivisibility, all of which, in his estimation, designate the scope of the substance class.

the grounds on which one might assume that reptiles are still substances (e.g., they are complex enough to have the status of being a substance), whereas amphibians, fish, lower animals, and the aggregates of inanimate beings are not? In the case of the metaphysically understood complexity, it needs to be pointed out that, for St. Thomas, a complex being is every being in which PM is actualized by SF (see *De ente*, ch. 2). Consequently, each material contingent being, according to Aquinas, has the status of substance (or of substance aggregate, in the case of mixtures and artifacts), in light of which the limitation introduced by Chaberek, along with his division into substances and “things” that are not substances, again proves to be a division that is arbitrary and devoid of any explanatory reasons (let us recall that Chaberek does not clarify the ontological status of “things” that are not substances).⁵⁴

As a result, in an attempt to refer to the analogy of participation (internal attribution) employed by St. Thomas in his theological reflection, Chaberek effectively causes its collapse, because the way in which the above analogy is constructed consists in a particular feature (perfection) of the primary analogate being present (to some extent) in the secondary analogates. In the case of the status of being a substance—in connection to the analogy of being (*analogia entis*) as presented by Aquinas—it should be stated that this perfection can be predicated of contingent created beings in reference to God, who is the necessary “simple substance which is first” (*De ente*, ch. 1).⁵⁵ Meanwhile, Chaberek understands analogy as an instrument allowing him to distinguish a class of beings that is granted the substance status, from

⁵⁴ Experts on Aquinas’s thought admit unanimously that, apart from humans, all animals and plants, as well as elementary particles (elements), the status of substance is also possessed, according to him, by—characterized by internal coherence—the aggregates of the latter, e.g., bronze. In *In I de an.*, lec. 1, no. 218, Aquinas concedes the substance status to inanimate beings: “Man and wood and stone are natural bodies, but a house or a saw is artificial. And of these the natural bodies seem to be the more properly called substances, since artificial bodies are made out of them.” See also Edward Feser, *Scholastic Metaphysics: A Contemporary Introduction* (Heusenstamm: Editiones Scholasticae, 2014), 164–71; Eleonore Stump, “Substance and Artifact in Aquinas’s Metaphysics,” in *Knowledge and Reality: Essays in Honor of Alvin Plantinga*, ed. Thomas M. Crisp, Matthew Davidson, and David Vander Laan (Dordrecht: Springer, 2006), 63–80; Michael J. Dodds, *The Philosophy of Nature* (Oakland, CA: Western Dominican Province, 2010), 29–39. In light of the above, the ontology proposed by Chaberek departs from that proposed by St. Thomas to a significant extent.

⁵⁵ When assigning the status of substance to God, one cannot forget that, as understood by Aquinas, God is simultaneously outside of all categories, including generic categories, and among them the genus of substance: “God is not in the genus of substance” (*Deus non est in genere substantiae*; *ST I*, q. 3, a. 5, ad 1). In other words, the

the other beings, which he classifies as “things” that are not substances. At the same time—let us reiterate—the question of what these “things” actually are remains unanswered.⁵⁶

Natural Species and Biological Systematic Categories

There is an alternative taxonomy that we come across in Chaberek’s texts, in which he refers to the so-called “natural species,” defining the phrase in the following way:

Natural species—natural kinds of living organisms, such as dogs, cats, cows, and horses. From a theological perspective, natural species could be identified with “kinds” mentioned in Genesis 1. From a metaphysical perspective, a natural species includes organisms that share the same nature. In this context “nature” is defined by Aquinas as “the essence of a thing as it is ordered to the proper operation.” From the same metaphysical perspective, natural species can be seen as living beings (composites of form and matter) that share the same substantial form. From the biological perspective these are organisms that belong to one taxonomic group of family or genus.⁵⁷

Without going into the intricacies and metaphysical difficulties of

status of being a substance in the case of God is incomparable to the status of being a substance of any other contingent being.

⁵⁶ In his argumentation, Chaberek provides a number of examples from the field of chemistry and physics (changes of the state of aggregation, crystallization, etc.), while making use of inconsistent and imprecise terminology. Denying the status of substance to beings which he classifies as “elements” and chemical “compounds”—within the ontology he proposes, they probably belong to the class of “things”—Chaberek claims that, at the same time, they are subject to accidental changes (“Where Do Substantial Forms Come From?”, 247). Keeping in mind that AFs serve the function of additionally specifying SFs, it is easy to notice the internal inconsistency of such a stance. Chaberek also refers to the category of emergence, once again without making an attempt at explaining what he understands by it. Such an attitude is indicative of a significant dose of ignorance on the part of my adversary regarding complex metaphysical studies in the area of the philosophy of chemistry, and in reference to the concept of emergence, especially in the context of the debate on the metaphysical criteria of being a substance as understood by contemporary natural sciences. See Howard Robinson, “Substance,” in *The Stanford Encyclopedia of Philosophy* (Spring 2020), ed. Edward N. Zalta, spring 2020 ed., plato.stanford.edu/Archives/spr2020/entries/substance/.

⁵⁷ Chaberek, *Aquinas and Evolution*, 21. See also Chaberek, “Where Do Substantial Forms Come From?”, 244–45, 253n22.

the above definition (e.g., defining “species” as a kind, as a collective set, or in reference to two separate taxonomic levels of family and genus), it should be pointed out that the concept of natural species gained popularity among Catholic theologians studying the theory of evolution at the turn of the twentieth century, in the context of considerable skepticism towards evolutionary theory on the part of the Church, as well as a negative assessment of the stance taken by theologians such as John Augustine Zahm, C.S.C. (1851–1921), and Marie-Dalmace Leroy, O.P. (1828–1905). After the year 1950, and particularly after the Second Vatican Council, when the climate of the dialogue between theology and natural sciences had changed, the theory of natural species was rejected as irreconcilable with the data provided by biological sciences. Otherwise, it would mean “freezing” the discussion of all evolutionary changes taking place on the level of an organism’s family or genus, which appears to contradict the fossil record. The concept of natural species is opted for by Erich Wasmann, Hermann Muckermann, Joseph Gredt, Richard P. Phillips, Mortimer Adler, Anthony C. Cotter, and Charles Kingsley (among others).⁵⁸

Where Do the SFs of the First Representatives of New Species Come From?

Turning now to the philosophical aspects of the theology of creation in its relation to the theory of evolution, I would like to address the question posed by Chaberek in the title of his critique: “Where do substantial forms come from?” The very way in which he formulates the problem is inadequate, pointing once again to his incorrect understanding of moderate realism. What Chaberek clearly has in mind is the origin of the “SFs of species,” regarding which we have already stated that they do not exist as a separate ontic category within the system of Aristotelian-Thomistic philosophy. Keeping in mind the subject of our dispute, I suggest modifying the question

⁵⁸ James Hofmann analyzes the history of the “natural species” concept, giving references to the works written by all of the authors mentioned in the main body of the text: “Erich Wasmann, S.J.: Natural Species and Catholic Polyphyletic Evolution during the Modernist Crisis,” *Journal of Jesuit Studies* 7 (2020): 244–62. Referring to the same category of natural species, Chaberek does not make reference to its historical roots, or critical assessment. The forthcoming collective work prepared under a grant that sponsors the translation of my polemic with Chaberek includes also my article entitled “Essentialist and Hylomorphic Notion of Species and Species Transformation,” in which I focus on the relevance of the essentialist approach to a complex debate regarding the definition of the biological species. In *Theistic Evolution*, 170–74, I also offer a more detailed criticism of the category of “natural species,” as defined by Chaberek.

by placing at its center the problem of the origin of the SFs of the first representatives of new biological species.

In an attempt to answer the question posed thus, one should first address the issue of the origin of new SFs in substantial changes, in which beings belonging to already existing species originate. Since SF determines the identity and the manner in which an individual material being functions, it is evident to St. Thomas that the new SFs are the actualizations of the potentiality of matter. The term employed by Aquinas here is “bringing out” or “educing” (Latin *educere*) SFs from the potentiality of primary matter in a substantial change: “It is not correct to say that the form is made in matter, rather should we say that it is educed from the potentiality of matter [*de materiae potentia educatur*]” (*De pot.*, q. 3, a. 8, corp.).⁵⁹ Asking about the efficient cause of this process (change), Aquinas distinguishes between two levels of agency, mentioning: (1) the operation of “an incorporeal principle on which the form directly depends” (implicitly, this principle being God), and (2) agency of “a corporeal agent whose action consists in moving something” (*De pot.*, q. 5, a. 1, corp.). Thus, the SFs of the newly emerging beings, even though their first and ultimate cause is God, are not “educed” by him from the potentiality of matter directly, but are derived through secondary causes.⁶⁰

Transferring this general model to the philosophy of biology and the changes occurring within the developmental lineage of living organisms, it needs to be stated that, in the process of reproduction, they do not pass on

⁵⁹ See also *De pot.*, q. 3, a. 4, ad 7 and ad 14; a. 8, ad 10.

⁶⁰ See *De pot.*, q. 5, a. 1, corp.: “Lower corporeal agents are . . . transmuting [*disponunt*] matter and educing the form from the potentiality of matter [*educunt formam de potentia materiae*]. Hence the form of the thing generated depends naturally on the generator in so far as it is educed from the potentiality of matter, but not as to its absolute existence [in this aspect they are dependent on God].” See also *In II sent.*, d. 1, q. 1, a. 4, ad 4, where, in (1) a polemic with position that assumes “hiddenness” (*latitationem*) of forms in matter and states that “generation is through aggregation or separation or through alteration alone,” as well as with (2) the Plato-oriented opinion voiced by Avicenna, who claimed that “all forms are from an intelligence and that a natural agent is nothing but what prepares matter for the reception of a form,” St. Thomas opts for (3) the solution proposed by Aristotle, in line with which “all forms are in potency in prime matter, but not actually, as those who posited hiddennesses said. He also said that a natural agent produces not the form but the composite by leading matter from potency into act, and that this natural agent in its action is, as it were, an instrument of God himself acting, who created [*condidit*] even the matter and gave it potency to the form. Hence, maintaining this opinion, it is not necessary for what generates to create a form or to make something from nothing, since it makes not the form but the composite.”

their own individual SF (in which case they would cease to exist), and do not copy or multiply it, but instead, acting (teleologically) as efficient causes, they “bring out” (“educate”) from the potentiality of matter the SF proper to the specific biological species to which they belong. This takes place during the process of substantial change, the result of which is the origination of a new living organism. In the case of sexual reproduction, the change in question consists in the fusion of gametes (i.e., fertilization), as a consequence of which the gametes cease to exist and a new organism comes into existence. Given the fact that gametes are separate beings, it can be suggested that they are secondary (instrumental) causes in relation to parental organisms.

Taking into consideration St. Thomas’s conviction, which follows St. Augustine’s thought, that new types of being (first instantiations of new species) come into existence as a result of changes occurring within the preexisting matter, it needs to be stressed that their SFs are also “educated” from the potentiality of this very same matter.⁶¹ If we assume that what lies at the foundation of formed matter is the PM understood as pure potentiality, then the range of the SFs that can be “educated” is also unlimited, at least in some sense (in reality, what limits it is the disposition of the PM, which I will discuss in greater detail below). The proposition put forward by Chaberek—who appears to be claiming that the emergence of a new species requires God to create *ex nihilo* a new “SF of a species,” which begins to form numerous individuals of a newly formed species—is an extremely Platonic one, and therefore alien to Aristotelian-Thomistic thought. What is more, even if we assume that what is necessary for the first representative of a new species to come into existence is God’s direct intervention—which we have seen above to be held by both St. Augustine and St. Thomas—such an intervention should be understood as the actualization of matter, that is, “educating” the first SF of a new type from the potentiality of matter, not its creation *ex nihilo*.⁶²

The above-mentioned distinction between two levels of agency helps

⁶¹ Here, the causal agents are God and the secondary causes, whose operation (movement, broadly understood) leads to a substantial change, in which the above-mentioned SF of a new type is “educated” from the potentiality of matter. Therefore, it is not true that, in my approach, “a new substantial form appears like a rabbit out of a magician’s hat as soon as matter acquires a suitable disposition, [where] what serves as the active (actualizing) factor is not form anymore, . . . but matter” (Chaberek, “Where Do Substantial Forms Come From?” 249).

⁶² Here, the exception being, needless to say, the origin of man, whose SF (the rational soul) is indeed created *ex nihilo* in the moment of his conception, primarily on account of its crucial intellectual and volitional dispositions, which transcend matter (understood not so much in relation to PM, as in relation to corporeality), and its

us to adapt to the context of speciation an essential aspect of St. Thomas's view which regards distinguishing between (1) being the cause of "educing" a particular type of SF from the potentiality of matter in the order of secondary causes and (2) being a (primary) cause of a given species per se (treated as a universal). Aquinas observes that, in bearing offspring of the same species, parental organisms, being the causes of the fact that the SF proper to the species they belong to "is in matter" ("in other words . . . that 'this matter' receives 'this form'"), are not at the same time the cause of this type of SF understood per se (as such). Otherwise, in the universal aspect of the specific type of the organisms they are representatives of, they would be their own causes. Put differently, while "the 'becoming' of the effect . . . depends on the [material; corporeal] agent," both the SF of a newly formed being (as belonging to a specific type of substance) and its existence depend on the agency of an incorporeal cause, on which they depend in their essence. This cause is God.⁶³

In the case of speciation, it should be recognized that the parental organisms of a specific generation of species S_1 , being their offspring's efficient causes, bring about the actualization of matter, or it functioning in a way determined by the SF of a new type, that is, proper to the new species S_2 . At the same time, they should not be treated (also as participating in speciation understood polygenically) as the causes of a new type of SF understood per se (as such). In this respect, the first and only cause is God.

The Role of the Disposition of Matter in Speciation

Returning to strictly metaphysical reflection, it is worth noticing that the question of "educing" (*eductio*) SFs from the potentiality of matter is closely related to St. Thomas's concept of its proper disposition. Speaking of the corporeal (material, hence contingent) efficient cause, Aquinas observes that, as such, it not only "induces form" (*formam inducit*), but also "adapts

status of substantial distinctness (i.e., being capable of subsisting in a state, in which it does not actualize PM in an organic human body). See *De pot.*, q. 3, a. 8, ad 7.

⁶³ See *ST* I, q. 104, a. 1, corp.: "Now it is clear that of two things in the same species one cannot directly cause the other's form as such, since it would then be the cause of its own form, which is essentially the same as the form of the other; but it can be the cause of this form for as much as it is in matter—in other words, it may be the cause that 'this matter' receives 'this form.' And this is to be the cause of 'becoming,' as when man begets man, and fire causes fire. Thus whenever a natural effect is such that it has an aptitude to receive from its active cause an impression specifically the same as in that active cause, then the 'becoming' of the effect, but not its 'being,' depends on the agent." See also *SCG* II, ch. 21, no. 8; III, ch. 65, no. 4; *ST* I, q. 13, a. 5, ad 1.

[disposes—*disponit*] matter” (*De pot.*, q. 5, a. 1, corp.). While clarifying and elaborating on my views in this regard, I would here like to stress that we should differentiate between the disposition of PM as such (let us call it “remote disposition”) and the disposition of PM formed by a given SF (let us call it “proximate disposition”). The former refers to the scope of SFs which the PM can receive in general, whereas the latter refers to the scope of SFs which the PM can receive in the next substantial change. In Aristotelian-Thomistic metaphysics, the remote disposition of PM (as a metaphysical principle of pure potentiality) is unlimited, while its proximate disposition is determined by the SF which actualizes it at the given moment.

In connection to the above, Chaberek is correct when he claims that, since “the reason why matters are disposed in such and such ways is that there might be forms of such and such kinds,” the disposition of matter as such cannot change “independently from the form.”⁶⁴ At the same time, it needs to be added that we should take into account not only the substantial form, but also the accidental forms. Since AFs belong to a specific substance and are inextricably linked to it, they can also affect the proximate disposition of PM. Consequently, as a result of changes of AFs, the proximate disposition of PM, influencing the direction and scope of its future possible actualizations, can undergo a change without the change of substance itself. Moreover, it should be stressed that, in the case of living organisms, the changes of AFs can be of a permanent character, passed on from generation to generation (the length of limbs, coloration, etc.), which, in the long term, can lead to their accumulation (the actualization of PM by the SFs of subsequent descendants within the developmental lineage L of species S_i is accompanied by additional specification by the same type of AFs).⁶⁵

In this context, a new meaning is given to the idea expressed by Aquinas, who claims that properly disposed matter “is something that has an aptitude or adeptness to act” (*In IV Sent.*, d. 49, q. 3, a. 2, corp.). Elsewhere, St. Thomas points out that, “from the fact that matter is known to have a certain substantial mode of existing, matter can be understood to receive accidents by which it is disposed to a higher perfection, so far as it is fittingly

⁶⁴ Chaberek, “Where Do Substantial Forms Come From?” 248–49. See also *SCG* II, ch. 40, no. 3.

⁶⁵ Consequently, Chaberek’s accusation in “Where Do Substantial Forms Come From?” 249, that in my opinion, “in a certain being, under given form, the disposition of matter is changing independently until, eventually, matter assumes a new form” (irrespective of how one should understand the colloquial and metaphysically imprecise claim of being “under the form”) is groundless. In his interpretation of accident, Chaberek completely ignores the existence of AFs and their relation to SFs.

disposed to receive that higher perfection" (*De an.*, q. 9, corp.). In his commentary on Aristotle's *De anima*, Aquinas adds that "everything in a lower form of existence is inclined to the maximum possible assimilation to the higher form" (*In II de an.*, lec. 7, no. 315).

Accordingly, it needs to be stated that St. Thomas's conviction of the properly disposed (secondary) matter's "tendency" toward its underlying PM being actualized in subsequent substantial changes by the SFs of the new type, including the SFs of an increasingly higher kind, does not apply only to his views on human embryology, but can be recognized as a principle that is generally binding in his metaphysical system.⁶⁶ This observation appears to render the model of evolutionary changes proposed by contemporary representatives of the Aristotelian-Thomistic school entirely justified and coherent.⁶⁷

The Character of Speciation

Let us attempt to describe speciation in terms of Aristotelian-Thomistic metaphysics, that is, in the context of understanding the phenomena of permanence and mutability of material beings in relation to the categories of potentiality and actuality, as well as substance and accidents. I suggest defining speciation as a series of complex accidental and substantial changes within the developmental lineage L of a given species S_p , occurring on a specific (often large) area and over significant periods of time.⁶⁸ As a result, the

⁶⁶ See *SCG* III, ch. 22: "And so, the more posterior and more perfect an act is, the more fundamentally is the inclination of matter directed toward it. Hence, in regard to the last and most perfect act that matter can attain, the inclination of matter whereby it desires form must be inclined as toward the ultimate end of generation. Now, among the acts pertaining to forms, certain gradations are found. Thus, prime matter is in potency, first of all, to the form of an element. When it is existing under the form of an element it is in potency to the form of a mixed body; that is why the elements are matter for the mixed body. Considered under the form of a mixed body, it is in potency to a vegetative soul, for this sort of soul is the act of a body. In turn, the vegetative soul is in potency to a sensitive soul, and a sensitive one to an intellectual one. . . . Therefore, the ultimate end of the whole process of generation is the human soul, and matter tends toward it as toward an ultimate form." See also *Q.D. de an.*, q. 9, corp.

⁶⁷ Chaberek notices correctly that my views on the philosophical and theological aspects of the theory of evolution are a continuation of the interpretative tradition elaborated in the environment of contemporary Thomism, which I mention in my publications, referring to, among others, the works authored by Antonio Moreno, Fran O'Rourke, William E. Carroll, or Étienne Gilson. Chaberek accuses them all of an erroneous understanding of Aristotelian-Thomistic hylomorphism. The present article is an attempt at providing a response to this criticism.

⁶⁸ Apart from genetic mutations, one should also mention other accidental changes crucial for speciation, such as genetic recombination, gene transfer, genetic drift, and

PM actualized by the SFs of gametes of a particular type of male and female organisms of species S_1 within L (or by the SF of the original organism/cell in the case of reproduction by division) becomes disposed to being formed by the new kind of SF of species S_2 in the subsequent substantial change accompanying the production of offspring (or the organism/cell division).

At the same time, one should note that substantial changes accompanying the begetting of offspring are changes of a special kind. They result in the emergence of new organisms whose SFs are of the same type as the SFs of parental organisms (or the SF of the original organism/cell in the case of reproduction by division). In the case of speciation, the last substantial change of that type, completing the entire process of interspecies transformation, differs from the others. It results in the origination of an organism whose SF is generically different from the SFs of parental organisms (or the SF of the original organism/cell in the case of reproduction by division).

Speciation understood thus appears to contradict the classical principle stating that, within the reproductive process, causes (parents) of a specified type lead to the origination of a descendant that resembles them.⁶⁹ In addressing this difficulty, it needs to be observed that, in line with the theory of biological evolution, a newly emerged first representative of species S_2 is, in most aspects and dispositions, similar to the organisms of the preceding species S_1 , which it is descended from.⁷⁰ Nevertheless, the fact

epigenetic modifications (i.e., permanent nongenetic changes which affect DNA expression). The additional factors are the geographical, ecological, and reproductive barriers, as well as natural selection, which strictly speaking is not so much a cause, as a determination of a greater reproductive success of the organisms that are better adapted to the environment governed by the principle of the survival of the fittest. All of these factors refer to a living organism which, by nature, strives towards preserving life (maintaining homeostasis) and producing offspring (breeding). Thus, while analyzing evolutionary changes, apart from efficient causes, one should also take into consideration the teleological aspect—not so much in the context of the question concerning the aim of all evolutionary changes from a global perspective (this kind of reflection belongs to the domain of metaphysics and theology), but rather in reference to the organism, which is their subject (within a population it belongs to).

⁶⁹ This principle constitutes a specific variant of a broadly understood principle of proportionate causality, which appears in many places in the works of Aristotle and Aquinas. Here are some examples: “The begetter is of the same kind as the begotten” (*Metaphys.* 7.81033b30); “No effect exceeds its cause” (*ST* II-II, q. 32, a. 4, obj. 1); “Every agent produces its like; . . . effects correspond proportionally to their causes” (*SCG* II, ch. 21); “The order of causes necessarily corresponds to the order of effects, since effects are commensurate with their causes” (*SCG* II, ch. 15).

⁷⁰ Within the theory of evolution, it is argued that, owing to the specificity of speciation mechanisms and the low population of the so-called intermediate species, they were not preserved in the fossil record. Hence, in the common understanding of evolutionary

that the parents and their offspring belong to two different species calls for the introduction of a certain modification to the interpretation of classical metaphysics. This modification consists in the weakening of the principle “like begets like” by acknowledging that resemblance in origination should not be understood as an absolute and strict qualitative identification of the SF of the parental organism and the SF of the offspring, but as a proportionate proximity of these organisms’ substantial forms. What is worth noticing here is that St. Thomas himself allows for the possibility of deviating from the “like begets (produces) like” principle:

Sometimes, however, the effect has not this aptitude to receive the impression of its cause, in the same way as it exists in the agent: as may be seen clearly in all agents which do not produce an effect of the same species as themselves: thus the heavenly bodies cause the generation of inferior bodies which differ from them in species. Such an agent can be the cause of a form as such, and not merely as existing in this matter, consequently it is not merely the cause of “becoming” but also the cause of “being.” (*ST* I, q. 104, a. 1, corp.)

In light of the above passage, it becomes clear that St. Thomas admits that there exist many efficient causes which do not produce effects resembling them in terms of species. Still, with reference to the example of celestial bodies, one can attempt to argue in support of Aquinas’s claim that effects of this kind are always ranked ontologically “lower” than their causes, while speciation, as defined above, entails the possibility of originating an organism which is ontologically “higher,” possessed of new and metaphysically “more perfect” dispositions in comparison to its direct efficient cause.⁷¹ Bearing in mind the difference between biological and ontological perfection (e.g., biologically speaking, the population of butterflies can be much better

changes (based on the comparison of forms which were preserved in the fossil record), species are significantly different from one another. In reality, the differences between immediately adjacent, phylogenetically related taxa are not radical.

⁷¹ At the same time, one needs to remember that an argument formulated in such a way does not directly stem from the cited fragment of the *Summa theologiae*. It is also worth noting that St. Thomas’s interpretatively challenging claim that being “the cause of a form as such, and not merely as existing in this matter” (i.e., being “not merely the cause of ‘becoming’ but also the cause of ‘being’”) might point at least to some extent to the supernatural (divine?) character of the causality of celestial bodies as understood by Aquinas. Such interpretation, however, would stand in opposition to his radical criticism of the neo-Platonic concept of the “intermediaries” in the divine act of creation (see also note 28 above).

“equipped” in the context of a specific ecological niche dominance than the population of elephants, which are more perfect from the metaphysical perspective), it needs to be underlined that the polygenic character of speciation enables us to realize that the amount of information “put” into this process on the level of its numerous causes remains adequately proportionate to the amount of information “contained” in the ontological “endowment” of the first organism of the newly emerged species S_2 .⁷²

Returning to Chaberek’s critique, it should be pointed out that one of the fundamental errors in his argumentation consists in reducing speciation to the last of the aforementioned substantial changes, that is, the one which results in the emergence of an organism whose SF differs from the SFs of parental organisms. Therefore, he fails to consider the crucial aspects of the complexity and polygenicity of the processes of interspecies transformations which determine their distinctiveness and their irreducibility to mere accidental changes.⁷³

Furthermore, in the interpretation of Chaberek, accidental changes cannot lead to substantial change, which—let us stress it once again—within the reductive approach to speciation that he takes, would be not so much a change finalizing the causally polygenic speciation (thus being one of the many steps on the way to its occurrence), but speciation *per se*.⁷⁴ At the same time, Chaberek admits that a series of accidental changes can indeed lead to changing the disposition of matter that will enable the occurrence of a substantial change, which he describes as “the annihilation of an individual

⁷² This well-known argument appears in the analysis of the metaphysical aspects of evolutionary changes carried out by Benedict Ashley, Norbert Luyten, or Leo Elders (see Tabaczek, “What Do God and Creatures Really Do in an Evolutionary Change?,” 475–76).

⁷³ In his polemic, Chaberek claims that, in theistic evolutionism, an evolutionary change is understood as a process within which “all changes are merely accidental” (“Where Do Substantial Forms Come From?,” 244). In light of the presented metaphysical analysis, it is obvious that what occurs as an integral part of the process of speciation are not only accidental changes, but also numerous substantial changes, which consist in giving birth to subsequent descendants in a given developmental line L .

⁷⁴ While formulating this particular objection, in relation to the already mentioned example of killing a chicken (“Where Do Substantial Forms Come From?,” 246), Chaberek commits the logical fallacy of extension (the straw man argument). Even though the example itself is not a false one—by cutting a chicken’s head off, a man is indeed the cause of a substantial change by modifying some accidental features, which changes the disposition of matter, thus enabling the occurrence of the change in question—making use of this example as an argument for evolution, in the meaning it is given by Chaberek, or even interpreted similarly to what Chaberek demonstrates, is a mistake that none of his opponents makes.

member of a particular species.”⁷⁵ Leaving aside what Chaberek has in mind when speaking of annihilation,⁷⁶ one should ask about the reason for limiting the processes that change the disposition of matter in such a way as to enable the occurrence of substantial change only to the processes of decomposition, in which the newly originated substances are situated lower on the scale of metaphysical perfection. The arguments provided in the present article indicate that a similar scenario involving changes in the disposition of PM might just as well bring about a substantial change, in which the newly formed substance belongs either to the same natural kind as the efficient cause(s) or to a different (including a new one) natural kind, whose individual representatives can be situated on the same or a higher level of metaphysical perfection. Obviously, the range of the degrees of perfection is, in this case, limited by the disposition of matter, as well as the type of action and the level of complexity of the web of causal factors.

Conclusion

The theory of evolution is still recognized as a theory which, in the realm of natural sciences, best explains the origins of the diversity of species of inanimate and animate beings that can be observed in the world. Like any scientific theory, it is subject to continuous analysis and verification, both in purely empirical terms and in the context of metaphysical presuppositions and conclusions that can be formulated on its basis. The aim of the present article has been not so much to defend the theory of evolution as to point out that, should it be true, it is not incompatible with classical philosophical and theological thought. I have attempted to prove this in response to the objections to and the criticism of my views formulated by Michael Chaberek. I trust that the arguments presented here help to demonstrate the relevance of Aristotelian-Thomistic thought in the context of contemporary natural sciences. N.V

⁷⁵ Chaberek, “Where Do Substantial Forms Come From?” 246.

⁷⁶ While asking whether God annihilates anything, Aquinas observes that nothing is “entirely reduced to nothingness,” since it would not serve the manifestation of God’s might, but would rather be contrary to it, given that the might and benevolence of God are to the highest degree manifested exactly in maintaining beings in existence (see *ST I*, q. 104, a. 4, ad 1). What we encounter in a substantial change is not so much an annihilation of being, but rather its transformation, as a result of which a specific “portion” of designated matter (*materia signata*) ceases to be formed by SF₁ and begins to be formed by SF₂, or by two or more SFs of various kinds (e.g., in the case of the death of an organism).