

Article

Neo-Thomism and Evolutionary Biology: Arintero and Donat on Darwin

Gonzalo Luis Recio ^{1,*} and Ignacio Enrique Del Carril ^{2,*}¹ Departamento de Humanidades y Artes, Universidad Pedagógica Nacional, Piedras C1070AAV, Argentina² Facultad de Comunicación, Universidad Austral, Pilar B1630FHB, Argentina

* Correspondence: gonzaloluisrecio@gmail.com (G.L.R.); idelcarril@austral.edu.ar (I.E.D.C.)

Abstract: Pope Leo XIII's publication of *Aeterni Patris* (1879) was a major factor in the great revival of Thomistic thought in the late 19th and the first half of the 20th centuries. Among the authors that took up the challenge implicit in the Pope's document of bringing Aquinas and his thought into the intellectual debates of the times we find two interesting proposals. The first is that of Juan González Arintero, a Spanish Dominican, and the second one is that of Josef Donat, a Jesuit born and raised in the Austrian Empire. Arintero is mostly known in Catholic circles for his influential works on mysticism, but in fact he devoted much of his early work to the subject of evolution, and how it could interact with the Catholic faith in general, and with Thomism in particular. Donat is the author of a *Summa Philosophiae Christianae*, a collection that was widely read in Catholic seminaries well into the 20th century. In this paper we will focus on the differing ways in which these authors tackled the problems and questions presented by Darwinian evolutionism to the post-*Aeterni Patris* Thomism.

Keywords: Juan Gonzalez Arintero; Josef Donat; neo-scholasticism; neo-Thomism; Catholic Church and evolution



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1. Introduction

Pope Leo XIII's publication of *Aeterni Patris* (1879) was a major factor in the great revival of Thomistic thought in the late 19th and the first half of the 20th centuries. The Pope aimed at three main goals with this document and the mandates included in it: the restoration of Thomistic studies would serve to defend and present in a more attractive manner the content of the Catholic faith, to provide a great service to society in general, and to further the interest of all of the sciences.

In Catholic academic circles, many were those who took up the challenge. This is evidenced in the multitude of Thomistic handbooks that proliferated in the period. These are books which were at the core of Catholic intellectual formation, particularly in seminaries, up to well into the 20th century. As we will see, these handbooks, as well as other secondary literature that was produced at the time, did not shun the new discoveries that were being made in the sciences. On the contrary, it is common to find a frontal and explicit dialogue between Thomism and the natural sciences. While the results were not always intellectually satisfactory, in some cases we can find interesting and nuanced approaches to the philosophical and theological questions that arose in that context.

In this paper we will focus on two authors that belong to this Thomistic revival, Juan González Arintero and Josef Donat: one Spanish, the other from central Europe, one Dominican, the other a Jesuit. In particular, we will study the ways in which these authors tackled the problems and questions presented by Darwinian evolutionism to the post-*Aeterni Patris* Thomism.

2. Juan González Arintero

Juan González Arintero was born in 1860, in Valdelugeros, a little village situated in the province of León at the north of Spain. He grew up in a humble rural family, but

very soon he manifested his inclination to study. So, his parents sent him to Boñar when he was twelve. There he entered the Dominican novitiate at San Juan de Corias and made his solemn profession in 1879. He is best known for his contribution to the defense of traditional mysticism. In this area, he tried to respond to certain proposals which, regarding religious life, separated mystical (or infused) from ascetical (or acquired) contemplation, leaving the mystical life for a chosen few, perhaps specially touched by the Holy Spirit, and the path of asceticism and spiritual effort for the rest of mankind. Father Arintero, says a biographer, “[...] for whom the universal call to holiness meant a single path to reach the summits of sanctity, did not accept the double contemplative path [...]” (Pérez Casado 2014, pp. 26–31) and, without rejecting the need for asceticism in the spiritual life, he insisted on the connection between a healthy mysticism and a demanding asceticism.

However, he also devoted a lot of effort to natural philosophy. His writings in these areas are full of arguments and expressions aimed to conciliate Christian faith with the natural sciences through Thomistic philosophy, being, in this sense, one of the numerous catholic philosophers and scientists who took up the challenge launched by Pope Leo XIII to renovate the Thomistic studies within the Catholic Church.

Since 1881, when he was sent to the University of Salamanca to study natural sciences, and for twenty years he dedicated all of his efforts to understanding the real relation between the sciences and theological truths. He was particularly interested in the theory of evolution. In one of his works dedicated to this issue, he recalls in an autobiographical way that, at the beginning and because of his own Catholic education, he was a staunch antievolutionist, but he says, “As we went on studying and writing, we were more and more inclined to believe that transformism is not only well-founded and reasonable, but that it is ultimately true, and that the errors that can be proved against it are only in the exaggerations, in the forced consequences of its systematic advocates” (González Arintero 1898, vol. 1, p. 90). So, after this change of heart, he started to write one of his major works about these questions, namely “La evolución y la Filosofía Cristiana”. It was a book in eight volumes where Arintero explained his outlook regarding evolution and Christian faith, and how compatible they are if one sees the problem through Thomas Aquinas’s perspective.

He spent the rest of his years coming and going from Salamanca to other cities like Valladolid, Rome, etc. Although he made an excellent apologetical work, especially in science and Christianity, his beloved subject was mystical theology (Pérez Casado 2014, pp. 26–31). This is why, since 1912, Arintero focused all his energies on teaching and writing about spirituality and mystical life, and the evolution of the Church’s vitality. As it was to be expected, some of his enemies took the opportunity to accuse him of modernism, but this situation did not last for long (Gómez and Martínez de Juan 2016). A group of friends within the Dominican order who knew him well, among whom can be counted Father Reginald Garrigou-Lagrange, came to his defense. Finally, the Church not only dismissed all of the charges against him, but also recommended the reading of his works (Vivancos Gómez 2018). He died at the age of 67 in his Dominican convent of Salamanca.

2.1. Arintero and Evolutionism

If there is a word that defines the whole of Arintero’s work, it is *evolution*. Indeed, as we already mentioned, Arintero was sent to Salamanca to study physico-chemical sciences. At that time in that university flourished a “[...] predominantly unbelieving, anti-clerical atmosphere, disrespectful of any hint of the sacred [...]” (Pérez Casado 2014, p. 15), and so, in such an unfaithful environment, the young and incipient friar devoted himself to explore modern sciences, especially the theory of evolution.

His good will and sincere search for the truth became evident when, after a thorough study, his mind began to turn from an inflexible total denial of evolution to the possibility of a moderate evolutionism. This option was opposed, on the one hand, to the rigid ultra-evolutionism of scientific materialism, mainly represented by the monist movement of the late 19th century, and, on the other hand, to the intransigent antitransformists who rejected

the new theory at its roots without having studied it in depth. Arintero's proposal will be "to counter scientific lies with scientific truth" (González Arintero 1898, vol. 1, p. 19).

In "La Evolución y la Filosofía Cristiana" Arintero attempts a solution to the problem of the apparent contradiction between evolutionism and a sound philosophical thinking compatible with Catholicism.

2.2. Ontological Status of Species

The theory of evolution presents some problems which, on the surface, seem to clash either with some of the assumptions of religion, or with some of the claims of Aquinas's metaphysics of being. At the top of the list is the problem of the origin of Man. Then, we could mention the problem of the ontological status of species, the role that chance plays in evolution and its implications regarding a designed universe, the more general problem of the gnoseological scope of scientific theories in relation to religion and metaphysics, and so on. In this section we will deal with Arintero's solution to the first two, that is, the problem of human origins and the one of the reality of species. We will present them starting with the second one, because Arintero's answer to this problem helps us to understand the first.

The question about the ontological status of the species is problematic because, from a classical point of view, eternal essences must be unchanging. Because of its essence, we can say that a dog is a dog, and it will remain a dog from its beginning, when it is conceived in the womb of a female dog, to its end, when it dies. And it produces other puppies, dogs, to whom the same thing will happen, and this will be repeated over the years and centuries. This means that the essences have remained and will remain unchanged despite the passage of time. It is obvious, then, that this assumption is very problematic if evolution is to be accepted. It is obvious that evolution implies the formation of species over time, and that purports that species have changed and will continue to change in the future. Aristotelian logic, adopted by Thomas Aquinas, identifies logical species with ontological essences¹, so if the term *species* used in Darwin's work stands for logical species, then it would refer to the ontological essence too, and essences "can't mutate without being destroyed" (González Arintero 1898, vol. 1, p. 91).

Arintero's solution to this problem is based on the introduction of a distinction between *organic* and *ontological species*. So, it is possible to state that "ontological species are founded on the intimate nature of things, and are therefore as immutable as those natures or essences; but species in Zoology and Botany are founded on a set of organic characters, all purely accidental, and are therefore as variable as the accidents of things, which never remain in one and the same being" (ibid., p. 94). In other words, *organic species* are based on certain characters given in a group of individuals. These characters are not always distinguishable from those used to define breeds or variations within the species, so that any distinction between breed, variation or species will never be too neat. That is why, said Arintero, these characters, "as they can be lost, they can also be acquired, and in fact are gradually acquired in the course of individual or, as it is called, ontogenetic evolution, without 'being' thereby loses or gains anything in its essential nature, and in the same way they could and should have been acquired in the prolonged specific or phylogenetic evolution, without in so doing altering the nature or changing the constituents of the ontological species" (p. 168).

But what does *ontological species* mean? "This is based on the truly essential nature, and is therefore as immutable as the essence itself, in which the slightest change is not conceivable without its being ceasing to be what it is, and, therefore, without it being destroyed" (p. 169). Due to its immutability, *ontological species* cannot be identified with *organic species*, and a question arises: does organic species refer to what biologists call 'breed' and 'varieties', does it include 'species'? Does it go beyond that? What biological category is to be assigned to ontological species? 'Classes', answers Arintero, "These do differ essentially, they do constitute distinct species in all ontological rigor. Thus, for example, fish, birds and mammals differ in essential nature; therefore there can be no spontaneous transformation from one of these classes to another; but within each of them all sorts of

transformations could take place at all, for in spite of all this, the same nature would persist” (p. 170).

2.3. *The Origin of Man*

The anthropological problem was at that time a sensitive one. The publication of *The Origin of Species* generated many conflicts and forced intellectuals to take sides in the debates that followed. Not wanting to repeat the Galilean experiences, most ecclesiastical authorities were reluctant to act against Darwinian evolution. Prudence, thus, was undoubtedly the virtue most exercised by Catholic scholars at the end of the 19th century, and the beginning of the 20th. Arintero was not an exception. This issue is developed very little in his published literature. Instead, most of his ideas in this respect are to be found in the manuscripts preserved in the Convent of San Esteban in the city of Salamanca, very close to the university².

Because of human spirituality, the origin of the *homo sapiens* must, by necessity, involve a direct creative act of God: “The soul, as a spiritual and immortal substance, as the image which it is of the divinity itself, had to be produced by the divinity itself, and produced not from pre-existing elements which do not exist, but by creation out of nothing” (Alba Sánchez 2005, p. 272). So, while there is something to be said about evolution and the human body, the spiritual aspects of Man cannot be explained in Darwinian terms. The essential constitution of man is the clearest proof that the human species is, in Arintero’s words, an ontological species, rather than an organic one. And this means that between man and any other animal there is a real leap that could not have been made by evolutionary processes.

2.4. *The Origin of the Human Body*

The body is not an accessory to the person, but an essential part of human nature (Alba Sánchez 2005, p. 270). For Arintero, this statement means not only that humans have a material part, but also that this part is essentially their material aspect, and not that of a mere non-spiritual animal. That is why he says “Man also consists essentially of body and soul, of an organism which has risen from earth, but which is the most perfect of all organisms” (ibid.). And this means that the difference between Man and animal cannot be reduced to the mere fact that humans have a spiritual soul and animals do not. The human body is a body specially structured to be the body of, and for, a spiritual soul, so it is not a body just like the bodies of the other animals. There is a fundamental hierarchical difference between them. The human body, because of its substantial unity with the soul, has some ontological peculiarities. These peculiarities make man more physically diverse and perfect than animals: “The ontological leap which the appearance of man implies, and which makes him distinct and far superior to the animals, lies not only in the possession of a rational soul, but also demands, by reason of substantial unity, certain ontological peculiarities in his body” (ibid.).

This idea leads to several conclusions. One is that these physical differences, which make the human body adapted to a rational soul, and therefore more perfect than that of animals, cannot be satisfactorily explained just by evolutionary processes.

“The soul, as a spiritual and immortal substance, as the image which it is of the same divinity, had to be produced by the same divinity, and produced not out of preexistent elements that do not exist, but by creation out of nothing. And the body, composed of pre-existent elements [was made out] of the earth, and although all of it shows itself to belong to the earth, because it must be perfectly fitted to the soul, [and] over its formation must preside the same end, the same plan that presides over it [i.e., the soul], [the body] must be made, ordained, and arranged by the same Supreme Maker that created the soul. [. . .] So, our body, in what it has of human, since it is an essential part of our being and in a way the organ of intelligence, could not come from evolution (. . .), and had to be a direct work of God Himself”. (Alba Sánchez 2005, pp. 271–72)

For Arintero, natural selection, or whatever the mechanism of evolution may be, could not possibly end up arranging the human body as it actually is, for it is physically arranged for the spiritual soul. So, despite being an anti-interventionist philosopher, Arintero is forced to admit a divine intervention in the production of the human body. To sum up, while the human soul is, for Arintero, directly created by God, the human body was shaped by natural processes such as natural selection, only that, in this case and this case only, we must assume a divine intervention in the realm of secondary causes. These intervention or interventions make possible the emergence, out of non-spiritual animal bodies, of a particular body well suited to spiritual operations (such as thinking, reflecting, speaking, feeling emotions and affections, like laughing or crying, making, holding and using tools, etc.).

This, of course, cast some doubts on the Darwinian provenience of mankind out of primates.

“Our organism is completely isolated in nature, and although there are certain analogies, more or less intimate, more or less remote, between it and that of the apes, yet [. . .] it is separated from them by a gulf, which not only has not been filled up by a sufficient number of intermediate forms, but can never be filled up, because the evolution of the apes, far from bringing them closer to man, distances them more and more from him. This is to say very clearly that our body did not come, nor can it even come from the simple spontaneous evolution of apes [. . .] but that it appeared formed suddenly and as if by enchantment, and therefore not as the work of nature, but as the immediate work of the Author of nature himself”. (Alba Sánchez 2005, p. 272)

There is, as Arintero suggests, a real leap in the natural development of life on Earth through the ages, a leap that includes a divine intervention sufficiently strong to permit the shaping of the human body. As Alba Sánchez puts it, “in short, what Arintero is denying is to grant an absolute character to evolution in its role in the origin of the human body, because he sees the need for divine intervention, but without granting it an absolute value either” (ibid., p. 273).

In the rest of the text, the details of which I will avoid for the sake of brevity, Arintero endeavors to present the counterpart of this affirmation. Indeed, although human beings are the product of divine intervention not only in the creation of their soul, but also in the production of their body by secondary causes, it is also true that they resemble apes, and the thesis of ape–man kinship, so much in vogue in monistic naturalistic circles, is not without evidence.

To answer this objection, Arintero resorts to a tripartite distinction of the kinship that may exist between one species and another: biological, fully organic and partially organic. There is biological kinship between individuals who communicate to their progeny a life essentially equal to their own. In them, we also find full organic kinship, for with life, they transmit the physical characteristics of the body that receives that life. As long as the individuals belong to the same ontological species, we will find the same full biological and organic kinship, even if their organism is different, because, in the end, they are ontologically the same and their distinctions are accidental. But when individuals belong to ontologically different species, they will share neither biological nor organic kinship, since their vital principle is different and so is their body. “Nevertheless, says Arintero, there may be, and we believe there is, a true organic kinship between them [. . .], for if in producing the new lives, the Creator had to create them in some way, since, being simple forms, they could not be made from pre-existing elements; in producing the organisms, he did not create them entirely new, but formed them from the elements they have, which already pre-existed; under an elementary form in the earth and under another form, much more adequate, in the other organisms already formed” (Alba Sánchez 2005, p. 276). This last type of kinship, according to Arintero, could be applied to the relationship between

man and apes. The apes were in biblical terms, “the clay of the ground” of Genesis 2:7, from which the Almighty formed man and blew the breath of His own life.

3. Josef Donat and the Thomistic Renewal after *Aeterni Patris*

Josef Donat is a peculiar character. Born in 1868 in Phillipsdorf, then part of the Austrian Empire, now in the Czech Republic, he was ordained as a Catholic priest as a Jesuit at a very young age. He spent his most fruitful years as a theology professor at the University of Innsbruck. His most notable work is his *Summa Philosophiae Christianae* in nine volumes, published originally from 1910 to 1933. His life seems to have been spent as one of the many Thomist professors that accepted the call of *Aeterni Patris*, and worked to bring Thomism to the 20th century in a renewed form. His *Summa* is certainly one of the most noteworthy examples of these attempts. Faithful to its name, each of its volumes covers a different section of universal knowledge, always dealing with the subjects from an Aristotelian-Thomistic point of view: their titles range from *Theodicea* to *Ontologia*, from *Psychologia* to *Cosmologia*. Here, we will focus on this last one, which is the fourth volume, with a first edition in 1913. It was reedited, with minor alterations, at least until 1936, with a tenth edition. The subjects it covers are wide ranging: the compatibility of modern atomism with Aristotle’s hylomorphism, an interesting summary and critique of Einstein’s theory of general relativity (this only in the last editions), and a truly fascinating commentary of Genesis 1 using the Kant-Laplace nebular hypothesis for the origin of the solar system.

During the few years between Arintero’s and Donat’s publications on these matters, the idea of micro chance events being important in explaining macro events that, at the least, appear to be teleological, had extended to other disciplines. Probably the most striking example of this can be appreciated in the publication of J. W. Gibbs’s *Elementary Principles in Statistical Mechanics* in 1902, a book that systematized Maxwell’s and Boltzmann’s previous work, and gave it a clear and generalized theoretical formulation. In it, Gibbs explains how the laws of thermodynamics can be explained as the manifestation of aleatory motions of particules, whose positions and velocities are not known with certainty. Although there was probably no explicit linkage between both theoretical developments, the analogy to Darwin’s idea is not hard to see. That Donat was interested in these subjects is attested in his treatment of the kinetic theory of gases and heat (Donat 1934, pp. 140–42), subjects that are at the basis of the general presentation given by Gibbs.

In conclusion, Donat makes the effort to leave no serious part of the natural sciences untouched in this volume, and to evaluate and integrate them in his philosophical and theological views. As such, the book was bound to cover the Darwinian theory of evolution and some related subjects, with all of their obvious implications for the doctrines Donat espoused. In the following sections we will show the manner in which Donat tackled some of these issues.

3.1. *The Origin of Life*

Donat’s position regarding the origin of life is straightforward: God is the direct and *immediate* author of the first living organisms, which in no way could have risen out of inorganic matter via a natural process. Donat distinguishes between *natural generation*, which is when a living being is generated from another living being or beings, and *equivocal generation*, which is when a living being is generated from non-living matter, *without the concurrence of a living being*. Although he indicates that here *equivocal generation* can also be understood as synonymous with *spontaneous generation*, he is aware that there are differences between the modern and the Aristotelian take on the subject (more on that later).

He begins with the statement that life did not originate together with the planet: “For the fiery state of the earth, which once existed, permitted no possibility of life. This is also confirmed by paleontology; in layers in fact no trace of life is found in the lowest levels” (ibid., p. 351). The question is how the first living organism or organisms came to be. Right from the start, he affirms that behind the hypothesis of equivocal generation there is the intention to discard, for philosophical reasons, God’s action in the world: “Most of

the moderns have admitted equivocal generation, not because they can show that it once took place, nay, they all admit that it was never observed, but they posit it because they refuse to admit the origin of organisms from God, since it is contrary to the principles of science to ascribe supermundane causes to worldly things. [...] It is for this reason that the equivocal generation is called the ‘requirement of science’”, and later “[the moderns] argue for it in such a way that it often appears clearly that it is not at all a postulate of natural science, as if it results from the demonstrable facts and laws of nature, but that it is a pseudo-philosophical postulate derived from the fact that the only sufficient explanation, divine production, is refused, after which the only [type of] generation left is the equivocal” (pp. 351–52). A generous list of quotations from contemporary zoologists such as Richard Hertwig, Richard Hesse, Ernst Haeckel, and Bengt Lidforss is provided to reinforce this idea of philosophical naturalism (albeit it is, for Donat, sometimes disguised as a mere methodological naturalism) being behind the push for an equivocal explanation of the origin of life. Donat provides a short story of the doctrine of equivocal or spontaneous generation, and ends it with the recent works by Swammerdam, Harvey, Siebold “and especially Pasteur” (p. 355) that showed that “every living being originates from living things” (ibid.).

Donat’s proposal is fleshed out in a short paragraph with Biblical resonances: “We do not affirm that God is such an immediate author of an organism that He immediately produced the whole organism, matter with a vital principle. It was sufficient for him to procreate a soul in matter already existing and sufficiently arranged” (p. 353). The reasons for denying equivocal generation in favor of a direct divine intervention are strictly philosophical, and depend on the Aristotelian³ view that he espoused: because life cannot be explained by the physical and chemical forces that act upon the matter that constitutes the body of the living thing, then living beings must possess a principle that is, in some ways, distinct from matter. Had non-living matter been the origin of the first living organism “matter would have given something of itself which is essentially different from it and proper to another” (Donat 1934, p. 353). Because, in good Thomism, all effects have to be in some way already in the cause⁴, and because living beings exceed in their functions and processes the basic forces of matter alone, then it is not possible to have a living being be the effect of a non-living, material, cause.

However, Donat still has some words for the classical doctrine of spontaneous generation, as it was defended by Aristotle and his medieval successors, Albert the Great and Aquinas among them. He recalls that all of them held that small animals, such as flies, fleas, tapeworms, worms, even frogs, snakes and many plants, arose without parental generation from non-living matter and mainly from decaying organic matter. The reasons for this were that “they could not discover their small eggs and germs” (Donat 1934, p. 354). As he said, this is a problem that contemporary biologists do not have, since modern experimental methods and observational instruments have allowed scientists to find the biological seeds for those living beings. Ancient spontaneous generation, though, was not plagued by the basic philosophical impossibilities that he denounces in the modern version. He points out that there was an essential part of the ancient theory that is not present in the modern one, and which changes the entire discussion: “[...] they did not posit matter as the sole cause of living things, but in addition, following Aristotle, they demanded the co-operative influence of the stars, to which they ascribed a kind of universal and principal causality in earthly things and which they supposed to supply the generative power in the matter in question. This idea indeed seems strange to us now, but at least it saves the principle of proportional causality” (ibid.). It is important to note that, in the classical image of the cosmos, either the stars themselves or the orbs responsible for their motions, were beings that were under the direct influence of spiritual intelligences, which could be construed as “unmoved movers” (Aristotle) or “angelic persons” (Aquinas)⁵. Thus, stellar influences could very well be seen as the motive forces that actualized the potentiality of matter so as to produce a living being, and this would not imply the sort of materialistic approach

Donat so eagerly rejects, since in the end these lower types of animals would come to be as the result of the activities of higher, spiritual, living beings.

Donat is aware that some proposed an extraterrestrial origin of life, the hypothesis of *panspermia*, a term he mentions. The whole discussion is nevertheless referred to as concerning the *origo cosmica vitae* (Donat 1934, pp. 356–57). Donat argues that even if such a hypothesis were true, it bears no consequence on the philosophical objections against equivocal generation, for in that case we would only be moving the question from the Earth to another celestial body, or to the space in-between celestial bodies: how did life originate *there*? Moreover, he argues that there is no trace of evidence that indeed this is the case, and that earthly life originated elsewhere. Not only do meteors show no indication of the presence of life, even if there were any living beings while they were in space, the extreme temperatures meteors reach when they enter the atmosphere would almost instantly kill them. Finally, he refers to an objection by Antoine-Henry Becquerel, one of the discoverers of radioactivity, who suggested that the powerful ultraviolet rays present in interstellar media would make the long-term presence of germs there impossible.

For Donat, as we saw, the explanation of how life came to exist poses no serious problem. Since the ontological distance between non-living and living is so great, there is no possibility of it being overcome as a mere effect of physical and/or chemical forces. A causal influence that comes from *outside* the realm of simple matter must act on matter in order to produce a living being. If these influences are celestial, as Aristotle proposed at least for some cases of basic biological forms, or if the one acting on matter is the God of Genesis, he does not discuss it, although it is clear that he sees no serious alternative here. Whatever the case, Donat is clearly much more interested in the questions about what happens *after* the first organism came to be. Not only because this was among the hottest topics of the science of his day, but also because in these matters—unlike the case of panspermia—there is an abundance of evidence to work on, to interpret, and to disagree about. In the next section then, we will deal with Donat’s take on evolution and natural selection.

3.2. The Theory of Evolution

Donat’s treatment of evolution is, like Arinterro’s, one of partial acceptance and partial rejection. Although he does not go into any thorough discussion about the relevance of that doctrine for the origin of the human body, like Arinterro he is convinced that the spiritual aspect of the *homo sapiens* cannot be explained via evolutionary processes: “[. . .] the human soul is essentially different from the animal soul and is of a whole higher order, and therefore cannot have evolved from the animal soul” (Donat 1934, p. 369). This is an argument that closely resembles the one that objected to equivocal generation, and can be generalized in the following form: *no higher form of being can come from the lower one unless as the effect of the action of a third, highest being*. Regarding the origin of humans, Donat also points to the lack of evidence from paleontology (“[. . .] neither a species intermediate between the modern man and the brute, nor any remains of man older than 10,000 years, have been found [. . .]” (ibid.)), but surprisingly, he also points to a lack of evidence from comparative anatomy and embryology.

The same principle is applied to the evolutionary relation between plants and animals: “Nor do we admit the descent of brutes from plants, because the sentient soul surpasses the non-sensing soul of plants by so much that a plant, by evolving its own perfections, can never become an animal” (p. 370). The question, then, remains: is there any place, in this land of Aristotelian biology and Thomistic metaphysics, for Darwinian evolution? Donat’s answer will, ultimately, be a resounding no. His rejection, nevertheless, is not void of interesting nuances and surprising turns.

To begin with, he declares that there is no incompatibility between a divine Author of nature and the existence of evolutionary processes: “[. . .] organic evolution (besides the creation of matter) supposes that God created the first life and endowed the first organisms with the faculty and laws of transformation”. (ibid.). Not only is God compatible with

evolution, but it is necessary for it, because if there was no God, no matter would exist, and if there was matter, no living being would be made out of it. And, if there were living beings, there would be no discernible way in which they would vary over time, since no “laws of transformation” can exist if there is no lawmaker.

Donat’s role for evolution is, in philosophical terms, limited by the principle above-stated about the impossibility of the higher to come from the lowest *by its own internal virtues*, and also by a similar principle that can be stated as “*no essential difference can be overcome by incremental, accidental, changes*”. As we will see, though, Donat is not so adamant in enforcing this second one, leaving the door open for such an occurrence to take place.

The combination of these principles leaves us with a picture which living beings could have been generated from non-living matter via a natural process, where animals and plants must have been the object of separate acts of God, who originated them as two branches of life unrelated in evolutionary terms. But also, one in which evolution only acts at the level of the phylae and below. Donat says that “In plants and animals, polyphyletic transformation or evolution within the range of the higher genera is admissible, but monophyletic evolution does not seem to be admissible” (p. 379). The philosophical reason for this is that “[. . .] in the highest classes, as being the most different, it seems that the internal nature and the soul are essentially different, e. g. between a sparrow and a lion, on an infusorium and an elephant. But it is very difficult or impossible for the internal nature and soul to have the ability or rather the tendency to transform itself into another essentially different from itself or to produce something different from itself by begetting” (p. 389). This is a clear application of the second principle we mentioned earlier. It must be noted, though, the hesitation in Donat’s expressions about the reach this principle has. He says that monophyletic evolution “does not seem to be admissible”, that it is “very difficult or impossible”. Elsewhere he describes it as “improbable” (p. 370). This is very different from the stark rejection we saw earlier regarding the possibility of an equivocal origin of life.

Regardless of the philosophical soundness of these arguments, Donat offers many additional empirical arguments, of which the most important comes from paleontology. Indeed, Donat points to the fossil record as his most important ally against monophyletic evolution: “[. . .] in the Cambrian (and pre-Cambrian) all the phyla of invertebrate animals are found, but the vertebrates are found not long after, and all the species of that age can be subsumed under the same classes (and orders) which we have established [for today’s biological diversity]” (p. 386). The presence of all the modern phylae in the oldest geological strata constitutes a strong objection to a common ancestry for them, as Darwin himself had already noted: “To the question why we do not find records of these vast primordial periods, I can give no satisfactory answer. [. . .] the difficulty of understanding the absence of vast piles of fossiliferous strata, which on my theory no doubt were somewhere accumulated before the Silurian epoch, is very great. [. . .] The case at present must remain inexplicable; and may be truly urged as a valid argument against the views here entertained” (Darwin [1860] 2020, pp. 259–60). The absence of intermediate forms between phylae constitutes a serious problem for Darwinism in that they are to be expected in the fossil record: “[. . .] if the monophyletic transformation of these highest genera were to be admitted, most intermediate forms would have existed; therefore, although paleontological findings are lacking in various respects, the multitude of forms found would be such that at least some intermediate forms should be found between them” (Donat 1934, p. 386).

Once Donat has attacked the hypothesis of common ancestry, he focuses on the other pillar of Darwinian evolution, natural selection as the prime mechanism for the variation of species. Here his objections are varied, and categorical. First, he denies natural selection the capacity to explain the origin of new characters in organisms: “The influence of natural selection is only negative. For the selection is strongly placed in this, that the fitter individuals that are present are left alone, while the unfit or less fit perish. Selection, therefore, can indeed be made clear by what reason the least suitable forms are sometimes eliminated [. . .] [but it] does not explain the emergence of new qualities or species, but

rather presupposes it. To explain it a little more clearly, Darwinism does not explain the origin of qualities or organs in the first place [...] but it only tries to show why, after they have arisen, they are preserved" (pp. 399–400). Natural selection would, in Donat's view, need a theoretical complement that explains in the first place why a new organ comes to be. Natural selection would then explain why it persists. This is something Donat insists on, for later he criticizes Darwin for proposing "[...] the entire evolution of organisms to be accidental [...] he generally does not recognize other causes of transformation besides selection, and above all he ignores the internal principle directing evolution [...]" (p. 401). Although he does not elaborate on what this internal principle is, it is clear that it is something which the Author of nature must have given so that organisms can produce new variations through time, variations on which natural selection can act on. Natural selection cannot, however, explain why they are in the first place.

Second, Donat argues that if natural variation were indeed an accidental occurrence, as Darwin proposes, then there is no reason to expect that it would remain as a permanent feature: "[...] if among many individuals two had received the same new quality, those same individuals, to the exclusion of all others, would come to mutual copulation, and in the following generation again two more, which had the same quality in a greater degree, only between themselves, but not with others, and thus through immense ages. For in each generation the separation of such individuals from the rest would be necessary, which certainly does not happen" (ibid.). Even if a new organic feature were to be advantageous in survival or reproductive terms, and therefore, natural selection were to favor the individual who possesses it, this does not mean that the next generation will preserve it, since there is a tendency for organic variations to be absorbed by the mean of the population, unless there is a sudden situation of isolation for the favored individuals, which is unlikely to happen in most cases.

Having rejected both common ancestry and natural selection as the main explanation for evolution, Donat concludes his treatment of Darwinism with a resounding negative. As before, atheism is for Donat the ultimate responsible for Darwin's initial success: "[...] this very thing [i.e., the non-guided action of natural selection] made Darwinism acceptable to many, because it seemed to explain the teleological order of organisms without an intelligent author [...]" (p. 402). An intelligently thought natural world is, for Donat, antagonistic with Darwin's proposal. A teleologically designed cosmos, with biological inner tendencies that explain organic variation and non-Darwinian evolution, with direct divine interventions at the origin not only of life, but of every phyla, is the option Donat goes for. This vision, which for him more aptly coheres with Catholic doctrine, led him to propose ideas which would probably be unexpected for a contemporary reader. In the next section we will see what for us was the most striking one: the existence of intelligent life on other planets.

3.3. A Teleological Cosmos and Intelligent Extraterrestrial Life

The teleological character of our universe, and in particular of biological evolution, is summarized in a paragraph from the section about extraterrestrial life: "On earth, each drop of water is a small world filled with thousands and millions of organisms. Therefore, it cannot reasonably be thought that all other immense worlds are devoid of all organisms and that they are immense seats of death. But if organisms are there, the highest and final stage, rational beings, cannot be lacking" (p. 272). Donat is a firm proponent of the existence of life on other planets (or *alliae stellae*, *other stars*, as he puts it). For this, he will deploy a multitude of arguments, both philosophical and theological, as we will see. However, his defense of the existence of intelligent life lies primarily on a teleological view of the cosmos. The universe has a purpose, and this purpose is manifested in the inner tendencies of evolution that lead to intelligent life as the most perfect stage of living. In this manner, biology, cosmology, and theology are united in a coherent picture, were we have a universe created by a God, that endows it with certain properties hospitable to life. He then intervenes in various ways, in special divine acts, to bring forward life as such.

This life, in turn, also has a given proclivity to vary and develop new forms that point to intelligence and spirituality. This then allows for the universe to become a place where the most perfect mode of worship is possible, where intelligent, material beings can give glory to God, thus closing the teleological circle in a theologically fulfilling way.

What is surprising about Donat's position is not only his enthusiastic acceptance of intelligent extraterrestrial life, but also the variety of arguments he presents. He is aware that the astronomical observations of his time are of no help in this discussion: "Astronomy can neither affirm nor deny it. We are not able to discover by observation that there are inhabitants in any star, but we can only discover that in some stars the conditions for life are not present or do not seem to be present" (p. 271). He then gives the Moon as an example of these non-hospitable celestial bodies, as well as all the other planets of the solar system, with the exception of Mars, where "[. . .] the requisites for life may be present, an atmosphere, water, day and night, and the changes of the year" (ibid.). The main line of argument, then, is the common appeal to the vastness of the universe, the huge numbers of stars and planets that are present there, and, as we saw in the previous text, the improbability of ours being the only planet with life.

His argument in this respect is not merely philosophical, for this vastness tells us a lot not only about the probability of life, but also about the intention of the Creator when He made it that way: "The primary purpose of the physical world is that God may be praised through the rational inhabitants. Now it seems that God obtains his ends in an excellent way. But now this end would be achieved very imperfectly, if the people of this earth, who live for the most part in ignorance of God and in sins, were all the inhabitants of the world; but it is obtained more perfectly and brilliantly, if rational beings are also admitted in other stars, and there perhaps justice and the praise of God hold sway" (p. 274). The theological character of this line of argument is a very important one for Donat, and he develops this idea and its consequences in several pages. For him, the existence of intelligent life elsewhere is almost a theological demand, one that provides a suitable explanation for several important theological questions. How come God's most perfect creation, Man, can be so horribly disfigured by sin, so much so that it impedes in many cases the most basic knowledge of the Creator? The answer is simple: the human case is but one in the set of intelligent animals, one that went astray, in a way. But many other intelligent species can be out there, species whose story developed in the intended way. This not only saves the divine wisdom, or ability to carry out His plans, but also his goodness: "It is sometimes difficult for men to understand, by what reason it is reconciled with the goodness of God and the perfection of the world, that a large part of men, of course through their own fault, perish eternally. But this difficulty almost disappears if it is supposed that thousands of millions of rational beings live in other stars now or later, perhaps of a more perfect condition and superior to our miseries, temptations, and sins, who may safely arrive at salvation" (p. 275). Donat's clarification that this argument allows for the difficulty to *almost* disappear is, at the least, an understatement, for one is left wondering what kind of infinitely good God would be content with this kind of "balance sheet" approach to salvation. Nevertheless, this venue of argumentation is very interesting, because it allows him to explore other important theological *loci* which are not uncommon in contemporary theological discussions on extraterrestrial life. For example, this position naturally assumes the hereditary theory of transmission or original sin: "All men are descended from Adam, all are infected with original sin, all are redeemed by the death of Christ, that is, all of this earth, of whom only the sources of revelation speak. In what state the inhabitants of the stars are now or in the future, whether they are subject to any original sin or only personal, how their sins are forgiven, etc., we do not know" (ibid.).

Moreover, these "men" that live on other stars, are referred to in that way in an equivocal (or at the least analogous) sense. Donat insists on this: "Nor do we defend the same people in other stars, such as we are, to dwell, but in general *corporeal beings endowed with a soul*, which can differ from us in the perfection of reason and volition, in the number and excellence of the senses, and in the shape of the body. For just as there are innumerable

species of animals, so also there can be a great variety of rational beings, adapted to the different conditions of life of the various stars" (p. 271). This is important to him not only because it dispels any accusation of "biological naivety" on his part, but especially because it is a central aspect of his theological argument for the existence of extraterrestrial life. Following an ancient tradition, Donat considers that a core feature of the way in which God's wisdom and power are manifested in the biological realm is through variety. There is a hierarchy of living beings, from the most basic to the most perfect. But each "level" of perfection is also constituted by a wide diversity of species, different not necessarily in their location in that hierarchy, but in the mode in which they instantiate that level of perfection. God rejoices in diversity. This principle of diversity, which is present in the biological realms lower than Man, and also in those of the angelic hierarchies, must surely also apply to rational animals. Therefore, for completion's sake we must think that, Man being the only intelligent species on this planet, there must be a wide variety of intelligent animals living either today or in the future (or probably both) on others of the vast number of planets we know nothing about.

4. Conclusions

In this paper we have explained the ways in which two important European neo-scholastics tackled some of the most important problems that Darwinian evolution presents to Thomistic philosophy. As we saw, their approaches were not always identical. Arintero has a more generous attitude towards Darwinian evolution: he accepts the role of natural selection as the main force for biological variation, and even develops new metaphysical categories to fit Aristotelian logic and metaphysics with the requirements of the new theory. Whatever the value of his distinction between organic and ontological species, Arintero's is an effort to present a philosophical doctrine that, while faithful to the core tenets of Aristotle and Aquinas, at the same time accounts for the new evolutionary phenomena suggested by paleontological discoveries, and Darwinian biology. His thoughts about the origin of the human species are also twofold. While he accepts that evolution played a role in the evolutionary history of the *homo sapiens*, his anthropology leads him to a special creation of the soul by God, indeed, for each and every individual human being, and a direct intervention of God in the natural processes that shape organic variation, so that it can produce a biological organism that is fit for the activities which are peculiar to humans.

Josef Donat, on the other hand, is less appreciative of Darwin. While he accepts that there has in fact been a transformation of organisms throughout the ages, he ultimately denies Darwinism the potential to account for that variability. Not only does natural selection not explain the generation of new species, but to accept this tenet seems to be, for Donat, a surrendering of the claim that the cosmos has a divine origin. The only role natural selection can have is to weed out the less prepared in the struggle for life, and that only in very peculiar situations that favor the interbreeding of equally mutated individuals.

The question of common ancestry is, however, an aspect in which both agree in negative terms. Life is too varied to be explained as descending from a single organism. For both of them the main philosophical reason for this rejection seems to be the organic distance between "the infusorium and the lion" (for Donat), "the fish and the birds" (for Arintero). Both indicate that no amount of small changes can bridge the gap between them.

In these authors, regardless of their strengths and shortcomings, we find interesting cases of how the academic elite of the Catholic Church of the period dealt, in nuanced ways, with some of the most pressing issues in the dialogue between science and theology presented at the time. This is interesting not only for historical reasons, but also because the literature they produced was, as we said, instrumental in the intellectual formation of the Catholic hierarchy for most of the 20th century. While some of the discussions there could be seen as dated today (in some cases unjustly so), they present complex approaches to issues that are still hotly debated today.

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Notes

- ¹ “[...] what is signified by the definition is the essence. But it is called essence from the fact that through it and in it a real being has existence”. *De ente et essentia*, I.
- ² In the year 2005, in the Ecclesiastical Faculty of the University of Navarra, Ricardo Alba Sanchez defend his doctoral thesis about “Evolution of Species according to González Arintero”. The author had the chance to work at the convent with the unpublished manuscripts of father Arintero, so I will use here this thesis as a reference to Arintero’s unpublished work.
- ³ See *De Anima*, II 1.
- ⁴ For a good exposition on Aquinas’s theory of causation see (Stump 2003, pp. 35–61).
- ⁵ For this matter, see the famous passages in Aristotle’s *Metaphysics* XII, and Aquinas’ commentary on his *Treatise on Separate Substances*, II.

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