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De Koninck and Aquinas on Matter and Evolution

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Abstract

In the philosophical section of his book *The Cosmos*, Charles De Koninck presents a Thomistic answer to the question on evolution. De Koninck's intention is to draw a metaphysical theory of evolution that does not depend on any singular fact of natural history but that could support some of its most important evidences: the evolution from simple to complex beings and the emergency of the different kinds of life (vegetative, sensitive and intelligent). In this article, we will first present some general principles developed by St. Thomas that could be of interest in the study of evolution. Secondly, we will draw an outline of De Koninck's theory. And finally, we will analyze *The Cosmos* together with some of De Koninck's writings on indeterminism using some of the principles presented in the first part of the article in order to assess how Koninck's stance is a Thomistic one. We find that, in *The Cosmos*, De Koninck emphasizes the role of the principal spiritual cause in bringing about effects which are ontologically superior to their instrumental material causes. However, his indeterministic view of nature that is based on a particular conception of matter conveys the idea that the evolutionary process is the necessary consequence of the essential desire of matter for the human form.

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1 INTRODUCTION

One hundred and fifty years after the publication of Darwin's *"On the Origin of Species"*, evolution remains one of the most intensely discussed theories about nature[1]. Everyday science presents new discoveries that remind us how small humans are when compared to the universe but, at the same time, scientific findings show how improbable it would be for human life to have appeared by chance in the cosmos. Therefore, the questions of whether we have something to do with the whole of nature and if we occupy a privileged place in the cosmos remains an imperative issue.

Studying evolution from the metaphysical point of view is already challenging, a difficulty that is augmented when using medieval philosophers such as St. Thomas Aquinas to address such recent scientific developments. In his book, *The Cosmos*, Charles De Koninck presents a theory of evolution that intends to be both metaphysical and Thomistic. De Koninck wants to build a metaphysical theory of evolution that does not depend on any single fact of natural history, but that could support some of its most important evidences: the evolution from simple to complex beings and the emergence of the different kinds of life: vegetative, sensitive, and intelligent.

The aim of this article is to inquire if *The Cosmos* presents a complete theory of evolution and if that theory is thoroughly Thomistic. In the first section, we will present some general principles developed by St. Thomas that could be of interest in the study of evolution. The second section summarizes the three elements of De Koninck's theory of evolution. His conception of evolution is closely related to his indeterministic ideas about nature. De Koninck's indeterminism gives great emphasis to the role of matter in defining the course of natural events. Due to this fact, we decided to include a small section with St. Thomas's doctrine on prime matter. And, in the other three sections, we analyze *The Cosmos* together with some of De Koninck's writings on indeterminism using some of the principles presented in the first section of the article to assess is what sense Koninck's stance is a Thomistic one. In the last section, we conclude.

2 AQUINAS ON EVOLUTION

St. Thomas never wrote explicitly about the theory of evolution as its development succeeded him by several centuries. Although evolution emerged in the context of a modern scientific debate, it remains a metaphysical question that can be answered by applying more general philosophical principles. Therefore, Aquinas can still provide the tools for building an explanation for this question.

First, Aquinas shares with the authors of the anthropic principle literature (APL) the idea that the cosmos is teleologically oriented towards man. Nevertheless, his arguments for teleology are different from the arguments presented in the APL. St. Thomas's intention is not to prove the emergence of human life, but to show that, in the existing state of things, lower material beings exist for the sake of man. He bases each of his arguments on the natural operations of man. According to St. Thomas, other created beings provide for the maintenance of the human body and constitute the necessary means for the exercise of man's proper operations: art and wisdom. We have counted seven texts of this kind.[2] The most complete of them is the text of the Summa Contra Gentiles. There, Aquinas enumerates all the possible ways in which irrational beings provide for man:

> "(1) either for the perfecting of its understanding, since it contemplates the truth in them; (2) or for the exercise of its power and the development of its knowledge, in the fashion of an artist who develops his artistic conception in bodily matter; (3) or even for the support of his body which is united with the intellectual soul." [3]

If we consider the third function as only comprising food and instruments but not the same human body, we could combine the text from the *Summa Contra Gentiles* with that of *De Potentia* question 3, article 10 in which Thomas clearly says that nature produces the body in which God infuses the rational soul: *"and though rational souls are not evolved by natural causes, the bodies into which as being connatural to them they are infused by God are produced by the action of nature."* [4]With all these examples Aquinas intends to show that material beings exist for the sake of man. In other words, we find that only human beings can be subject of the higher kinds of operations and that, in the exercise of those same operations, they make use of other beings as instruments. Therefore, all the material universe has man as its end because *"the order of things is such that the imperfect are for the perfect"*.[5]

Second, if we want to gain a Thomistic perspective on this topic we

should ask how St. Thomas would structure the question on evolution. Probably the first thing Aquinas would say is that evolution is only a problem for those who identify a teleological structure in the universe because it casts doubt upon that same structure. This is the reason why the question of evolution is frequently identified with the question of the anthropic principle. According to Aquinas's doctrine what determines if man is truly the end of the universe is the intention of the agent: *"every agent acts for an end: otherwise one thing would not follow more than another from the action of the agent, unless it were by chance."*[6] If man is the end willed by the Creator, the natural course of events will be led in such a way that the human soul will appear at some point in history. Otherwise, the universe would be deprived of its end and would be pointless. To prove this, we can take one of two paths. (1) We can either try to demonstrate that there are necessary laws that have been written into the nature of things since the beginning and will lead to the appearance of the human form. (2) Or we can say that, because of the intention of the agent—God—, although there is no primordial law that guarantees the emergence of man, instrumental causes will be led in such a way that the human soul will end up appearing.[7] Both paths guarantee the intentionality of the agent but the first one emphasizes the efficient causes and the second the final causes. Since efficient causality can always be redirected to final causality,[8] both paths end in the intention of the agent. In an article, *Thomistic Reflections on Anthropic Principles*, Marie George explains exactly this same idea saying that one of the first critiques St. Thomas would make to the APL is the confusion between these two causal perspectives:

> "one of the first things that Aquinas would notice is the confusion of final causality with efficient causality, a mistake not uncommon in anthropic literature. This confusion stems from an ambiguity as to whether a statement such as "the universe is so old and so big because that is the time and size required for planet hospitable to life to be produced", is meant to convey that the universe has the age and the size it has for the sake of life, or that the universe has this age and this size because the efficient causality necessary to produce a planet hospitable to life required that much time, and the universe of that size is its result."[9]

As George says, authors fail to identify *ex-ante* the type of causality that underlies some of their statements. Because the authors of the APL are not completely rigorous in their discussion, the debate concerning anthropocentrism sometimes lacks credibility in the domain of philosophy.

3 DE KONINCK ON EVOLUTION

De Koninck tries to explain evolution from the philosophical point of view. In a first stage, he identifies the end—raison d'être—of the universe, which is man. Secondly, he explains the ways in which the evolution of matter could have led to the appearance of the human form.

In *The Cosmos*, De Koninck presents two metaphysical proofs that explain why man is the raison d'être of the universe. One of his proofs departs from the mobile being and the other departs from the Creator. St. Thomas never built such proofs perhaps because he was never compelled to present them. In the Middle Ages, man was considered the center of the material universe even from the scientific point of view. While we believe St. Thomas would consider these to be valid, in this article, we are not so concerned with the proofs as with his theory of the evolution of matter until it is prepared to receive the human soul.

The first element of De Koninck's theory of evolution is the active role he attributes to spiritual agents that, according to him, establish the course of natural phenomena. He explains that there is only one valid metaphysical explanation for the evolution of inorganic beings to living complex beings, that ascend from vegetative to sensitive and intelligent life. That explanation implies the existence of one or several principal causes—spiritual substances—that, in the use of instrumental material causes, can generate higher beings from lower ones. De Koninck justifies this thesis with the principle of sufficient causality which requires causes to be superior to the effects they produce.[10] Therefore, if we observe that a lower cause generates a higher effect, we can conclude the existence of an unknown principal cause.[11] De Koninck explains that this legitimate philosophical point of view has been abandoned because of the influence of some scholastics, in particular Francisco Suarez. According to De Koninck, when Suarez denied the apodictic force of St. Thomas's proofs for the existence of higher spirits, he reduced the sources of knowledge to natural science and theology.[12]

De Koninck adds that the influx of spiritual causes in the natural world is not something that does violence to nature. Spiritual agents exercise their causality not as a work of art but as a work of nature. We humans use instruments according to their characteristics to produce a work of art but pure spirits generate natures.[13]

The second component of his theory of evolution is, what De Koninck calls "matter's desire for the spiritual form of man." According to him, the essential dynamic of nature is such that matter tends towards the human form. Even though the appetite of matter is realized in any given form its

"essential desire remains unassuaged" before matter attains its end, which is man.[14] This unfulfilled appetite of matter is the ontological reason for indetermination:[15] there is indetermination in nature because contingent forms cannot determine matter ad unum and matter remains in potency to other forms.

Finally, De Koninck puts together the two aforementioned elements of his theory. Even though in *The Cosmos* we are presented with an explanation of how these two components work together,[16] it is in The Problem of Indeterminism that De Koninck uses an analogy that allows us to understand how he sees these two elements.

> "Thus we see in what sense there is necessity in nature and in the maturation of the world, and in what sense there is contingency. There is necessity because of the end; there is a necessity of means, as in the case of freedom. But the means that will be effectively engaged in the order of execution are not rigorously predetermined in the original sketch of the world."[17]

For De Koninck nature is like the human will: one of its parts is naturally determined *ad unum* but the other part is indeterminate. The human will is determined to desire happiness and nature necessarily tends to the human form. However, the means to achieve that happiness and to arrive at the human form are not predetermined in the early stages of the universe. In another article, *The Reflections on the Problem of Indeterminism*, De Koninck explains that the role of the intellectual substance is to sustain and instigate the path of evolution, cooperating with nature in order to prepare matter to receive its ultimate act.[18]

We believe De Koninck's theory presents several enlightening ideas. In fact, we agree that the principle of sufficient causality is enough to justify the existence of principal spiritual causes that drive the course of evolution. Whether that is a single cause—God—or several—separated substances—would require more proofs than just this one. We have more doubts, however, concerning the other two elements of his theory of evolution: the essential desire of matter for the human soul and the analogy between free will and indeterminism. In the next sections, we will take a closer look at some of De Koninck's texts together with St. Thomas's doctrine on prime matter to see how truly Thomistic is his theory of evolution. We find that the way he conceives evolution is strongly influenced by his indeterministic view of nature which, in some of its points, does not agree with Thomas's doctrine on matter.

4 ST. THOMAS AQUINAS'S DOCTRINE ON PRIME MATTER

For St. Thomas *"matter is being in potency, is that from which a thing comes to be per se"*,[19] but *"the potency of matter is not some property added to its essence; rather matter in its very substance is potency for substantial being."*[20] As a consequence, matter belongs to the genus of substance,[21] as act and potency divide all genus. Aquinas sees the relation of prime matter to passive potentiality as that of God to active potentiality: *"as primary matter is pure potentiality, so is God pure act."*[22] This statement does not mean, however, that matter is the source of all potentiality as God is the source of all being, because if this were true, matter would be like God. Thomas explains that because potentiality is receptive of act, potentiality is proportionate to act. The acts received are different participations of the first and infinite act. Therefore, there cannot be a single potentially that receives all acts because this receptive potentiality would be equal to the first active potentiality which is God.[23]

If when sustaining that matter has an appetite for form or *"desires form"*,[24] St. Thomas meant that in any way matter alone could be the subject of an active power, Aquinas would be contradicting his own definition of matter. For this reason, St. Thomas explains in the *Commentary on the Physics:*

> "everything which seeks something either knows that which it seeks and orders itself to it, or else it tends toward it by the ordination and direction of someone who knows, as the arrow tends toward a determinate mark by the direction and ordination of the archer. Therefore, natural appetite is nothing but the ordination of things to their end in accordance with their proper natures. However a being in act is not only ordered to its end by an active power, but also by its matter insofar as it is potency. For form is the end of matter. Therefore for matter to seek form is nothing other than matter being ordered to form as potency to act."[25]

St. Thomas explains that matter is ordered to form through a certain stable disposition that in another text[26] his designates as *habitudo*. Even though, matter can be said to be in potency both to form and privation, according to Thomas, it has a stronger relation to the former—and in that sense matter is said to desire form—because form is a good and privation is *"some sort of evil"*[27]. In fact, privation, the removal of the form, only happens because matter receives another form and the preceding one needs to be removed. And finally, one other idea which is also relevant for the present discussion is the fact that for Thomas:

> "prime matter considered simply in itself is quite indifferent to all forms. If, then, certain forms and dispositions, through which prime matter is specialized to this or to that particular form, do not exist before others, this particular form will not be received in prime matter in preference to another particular form."[28]

From all this, we can conclude that, for Aquinas, matter is ordered to form in a stable way and that this ordination or desire cannot be conceived as an act of matter. We cannot find any supporting text to justify the idea that matter is in some way "unsubjected" to form as De Koninck will argue. For Aquinas, matter is too obedient to form, it does not have any power to resist it and desires it in a stable way.

5 INDETERMINISM AND THE ESSENTIAL DESIRE OF MATTER

De Koninck does not present an all-embracing study of indeterminism in *The Cosmos* but discusses it extensively in many contemporary works.[29] This topic is important for the present discussion because The Cosmos is imbued with this fundamental view of nature and causality.

In fact, the debate around indeterminism gave origin to one of the most developed areas of De Koninck's thought. He was strongly influenced by Sir Arthur Eddington about whom he wrote his doctoral thesis. His whole project in the domain of philosophy of science appears to be to bring together Aquinas and Eddington. De Koninck defends the objective indeterminism maintained by Eddington and some others and tries to argue that so did St. Thomas, even if at his time there was no supporting scientific evidence such as quantum mechanics.

According to Charles De Koninck, there is contingency and indetermination in nature because matter is in a way "unsubjected" to form. The general impression one gets after reading his texts is that De Koninck gives more prominence to matter over form than most of the Thomists. He agrees form determines matter but also attributes a causal role to the latter, which is not material, and originates uncertainty.[30] In addition, he explains that a form of matter is not contingent because its co-principle is in potency to other forms, but because the form itself is contingent. This is so because we can imagine a form of matter that is incorruptible: the body of the resurrected.[31]

De Koninck in some way identifies indetermination, contingency and potency[32] and this, we believe, is the origin of his miscomprehension of Thomas. Albeit these concepts are related, they are not the same. De Koninck is right in saying that for St. Thomas contingency comes from matter

because matter is potentiality to be and not be.[33] But for Thomas, any given case of a contingent result requires both the potentiality of matter to receive many forms and the opposition between the forms and the powers themselves. Matter (passive potency) makes one of two mutually exclusive results possible, where the result that actually happens has a cause or determinant, which results from the presence of this form rather than another one (active potency). Note that when Thomas talks about matter as pure potency he always considers it a passive potency. But if, as De Koninck, we interpret the potency to be and not to be as active potency, we can see how matter can "decide" to be or not to be and, in some way, oppose resistance to form.

In order to justify his idea that the desire of matter is unassuaged until it reaches the human soul, De Koninck cites a difficult text from the Summa Contra Gentiles in which Aquinas appears to be saying exactly that:

> "any moved thing, inasmuch as it is moved, tends to the divine likeness so that it may be perfected in itself, and since a thing is perfect in so far as it is actualized, the intention of everything existing in potency must be to tend through motion toward actuality. 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."[34]

De Koninck uses this text to justify that every natural form tends toward the form of man because of the desire inscribed in the nature of matter.[35] However, this interpretation is not consistent with two ideas of Aquinas. We have just seen the first, which is prime matter being indifferent to all forms. The second has to do with the perfection of forms. Thomas says in question 5, article 1 of the first part of the Summa Theologiae that the good is what all things desire and what things desire is their own perfection.[36] This means that lower forms desire what is best according to their nature but they do not desire to be a human soul.

So, how could we interpret the text of the Summa Contra Gentiles? We believe that excerpt can be fully understood when read together with the rest of the chapter. At the beginning of the chapter, Aquinas explains that things which are moved can only tend to divine likeness by being perfected within themselves since they cannot perfect others: "hence it is clear that the things which are moved, or passively worked on only, without actively moving or doing anything, tend to the divine likeness by being perfected within themselves".[37]St. Thomas continues using an analogy with the ce-

lestial bodies and says that the perfection of matter is attained when all its potentiality has been reduced. However, since matter only allows one form at a time, this can only happen sequentially.

> "On the other hand, celestial bodies move because they are moved. Hence, the end of their motion is to attain the divine likeness in both ways. In regard to the way which involves its own perfection, the celestial body comes to be in a certain place actually, to which place it was previously in potency. Nor does it achieve its perfection any less because it now stands in potency to the place in which it was previously. For, in the same way, prime matter tends toward its perfection by actually acquiring a form to which it was previously in. potency, even though it then ceases to have the other form which it actually possessed before, for this is the way that matter may receive in succession all the forms to which it is potential, so that its entire potentiality may be successively reduced to act, which could not be done all at once. Hence, since a celestial body is in potency to place in the same way that prime matter is to form, it achieves its perfection through the fact that its entire potency to place is successively reduced to act, which could not be done all at once."[38]

Even though the human soul is the highest act matter can attain, it is not the perfection of matter "per se" and that is the reason why once matter attains the human soul it is still in potency to other forms, and will end up being something else sometime in the future.

Therefore, how to explain the expression *"the more posterior an act the more matter is fundamentally inclined to it"*? If matter is to attain all degrees of being, also the higher ones, there has to be a direction towards the highest point. Otherwise, it will never attain the forms pertaining to superior ontological levels. Thomas explicitly says that a moved thing needs to be moved by others which means this inclination cannot be inscribed in matter. Matter can only attain its highest act when it is moved by an agent.

St. Thomas is clear when he says that any inclination in matter can only take place through the form: *"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."* In other words, the end of the process of generation and corruption, which is the soul, is the driving force that allows matter to attain its perfection, which is that of successively reducing all its potentiality to act. A particular part of matter does not care if it is a stone for all time, even though it would be more perfect if it received other forms, but that does not depend on matter, it depends on what other things do to matter.

In conclusion, Aquinas does not say that matter desires the human soul.

Instead he seems to be saying that the inclination of matter to form generally, and to all forms successively, and to the human form principally, is really just one and the same inclination, seen from different points of view.

6 INDETERMINISM AND TIME

De Koninck's view of indeterminism also influences his view of time. In this section, we will analyze two of the problems we have identified without any intention of being exhaustive.

The first is whether De Koninck understands the substantial being of material things as something in constant change. In fact, some of his statements convey this idea[39] even though De Koninck never explicitly affirmed how he conceived substantial being. Lawrence Dewan makes this interrogation in one of his articles in which he says that De Koninck "gives the impression of going in the same direction as Joseph Owens considering the substantial being of movable things as intrinsically flux, ignoring the per accidens aspect of such being's being measured by time."[40] Dewan is careful because it is very difficult to discern if De Koninck is emphasizing the role of a proper accident of mobile beings or if he considers substantial being to be constantly renewed.

Differently from Owens, De Koninck never states his position on this question explicitly. He does not even explain, in any of the articles we have cited, whether he conceives the being of substances in a composed way—substantial being and accidental being—or as a single act of being that inflates and deflates. We believe De Koninck never addressed this topic directly because his interest was centered in evolution, indetermination, and the relationship between the philosophy of nature and metaphysics.[41] Temporality becomes a critical dimension when one is interested in these topics, so it is understandable that De Koninck talks about it extensively even though not as the main subject.

De Koninck's aim is only to emphasize the fact that mobile beings need an immobile end as, otherwise, they would always be pursuing something unreachable and their existence would be irrational. He is not careful in the way he describes substantial beings in *The Cosmos*, and therefore sometimes he appears to imply that it is the substantial being that is in flux[42] and other times it seems that it is the essence.[43] For these reasons we believe it would not be fair to accuse De Koninck of conceiving substantial being as in flux, even though he loses some clarity because of his poetic style of writing.

Secondly, De Koninck claims that, if there is no indeterminism, there can

be no direction impressed in nature which means past, present and future are identical.[44] Our question here is: why? Even if the primordial conditions of the universe contained potentially all the determinations necessary for its future stages, as Suarez argues, still those stages would exist in potency and not in act. We do not find in the doctrine of St. Thomas Aquinas any reason to believe that indeterminism has a direct relation to directedness or evolution. In some texts, De Koninck argues that if there is no indetermination, there is no potentiality nor contingency[45] and time is just a caprice of lazy efficient causes.[46] Even if form determines matter perfectly and if this determination is ad unum there remains the fact that things must interact with each other and reduce from potency to act the forms that are already potentially present in the universe. That interaction is crucial for Aquinas, it is what actually brings things together in a unity of order.[47] It seems that De Koninck forgets the importance of the difference between act and potency. Neglecting this difference puts him together either with Parmenides or with Heraclitus, but not together with Aristotle and St. Thomas. Any simple example of our daily life can help us see how difficult it is to argue in favor of De Koninck's idea. If we see two cars going in the same direction and we are able to predict with certitude that they are going to crash in three seconds, their situation is clearly different before and after the accident, even if all the conditions for the accident were already present and accessible to a created intellect three seconds before.

7 INDETERMINISM AND EVOLUTION

Finally, we will take a closer look at De Koninck's analogy of indeterminism and free will.[48] The analogy is suggestive as it tries to explain how God assures the accomplishment of the end of the cosmos—the human being—without predetermining the means. Nevertheless, we believe it works as an image but not as a proof.

The main problem has to do with the fact that in Thomistic metaphysics, form is the only source of actuality and intelligibility of the composite.[49] Claiming that some other element is in the origin of the determination of beings can either come from a non-comprehension of what a form is for Aquinas—form is act—or opens the door to a metaphysics of unintelligibility. In other words, we can say that some processes are determined randomly because there is a mechanism that generates random results, such as a computer.[50] In this case, randomness has a formal explanation and, as a consequence, is intelligible. The other alternative is to admit randomness without

a cause, but this kind of randomness is unintelligible and, as such, cannot even be conceived by the human spirit. On what grounds can we argue in favor of the existence of something that our intellect conceives not even as unimaginable but as unintelligible? What then determines the limits of the intelligible and the unintelligible?

In the case of free will, the example given by De Koninck, indetermination is not originated by a lack of reasons and determinations for acting. It is precisely the opposite. The human spirit, an absolute form, is able to know and to determine itself between reasonable alternatives.[51] But each alternative is intelligible and perceived as good.[52] Having said this, we can only understand De Koninck's analogy of free will and indetermination in natural beings in one of two ways. Either there is no cause at all or there is no natural cause that determines the course of events, and it is God or a separated substance that makes the choice. Only in the latter case could the analogy entirely work. This interpretation, however, does seem strange in the context of Thomism: it is as if God left some open doors in nature so He could act on it despite the forms that He decided to create. This seems to us a God of the Gaps kind of argument.

De Koninck was aware that some of these objections could be raised against his arguments. He actually talks about some of these problems but does not give a full explanation. He starts by saying that determinism is not a verifiable hypothesis[53] and we say that, for the same reasons, indeterminism cannot be empirically verified either. He is convincing in this point, and we agree with him that the truth about determinism and indeterminism should not be looked for in the realm of science but in that of philosophy. Given this, determinism and indeterminism appear to be equally valid hypotheses, though they are not symmetric. As we have said before, once we allow for an element of pure indeterminism we also lose control over the boundaries of that indetermination because indetermination appears as somethings unintelligible. De Koninck knows of this problem but he does not present a solution, he just says that his conception of indeterminism is different from contigentism.[54]

We believe De Koninck uses this final image because he wants a complete theory of evolution. He intends to present a cosmos in which the agent—God—creates with a definite end. But he also wants to defend that it is not just God but also matter that desires the human soul. We believe De Koninck ends up falling in the error commonly made by authors that belong to the APL. That error consists in arguing both from final causes and efficient causes without being able to fully harmonize the two perspectives. In trying to build a closed theory of evolution, explaining what happens

both from the viewpoint of matter and from that of the principal agents, we believe De Koninck forces the analogy and does not truly build a proof of what he is trying to defend. Nevertheless, some of the parts that compound it bring a lot of light to the philosophical understanding of evolution.[55]

8 CONCLUSIONS

The aim of this article was to analyze Charles De Koninck's theory of evolution together with St. Thomas Aquinas's doctrine on prime matter. We find that De Koninck's argument for the existence of principal spiritual causes in nature to be fully Thomistic. We do not agree, however, that his theory of indetermination is entirely compatible with Aquinas conception of prime matter. The main reason for this has to do with the great emphasis he puts on matter as source of objective indetermination. As a consequence, other ideas such as the inherent desire of matter, his understanding of time, and his reading of how indetermination is reconciled with God's plan for the universe do not seem to be entirely Thomistic either. Even though we have many doubts about De Koninck's theory as a whole, we believe his works to be an incredible source of ideas for gaining a metaphysical understanding of evolution. They constitute a valuable point of departure for Thomists interested in the metaphysics of the universe.

NOTES

1. Abbreviations: *CDA = Commentary on the De Anima*; *CP = Commentary on the Physics*; *CT = Compendium Theologiae*; *DP = Quaestiones disputatae de potentia*; *DSC = Quaestio disputata de spiritualibus creaturis*; *SCG = Summa Contra Gentiles*; *ST = Summa Theologiae*.
2. Cfr. CDA 2.6, 2.7; CT 148; DP 3.10.2, 5.9; SCG 3.112; ST 1.96.1.
3. «Sic autem videmus res cursu naturae currere quod substantia intellectualis omnibus aliis utitur propter se: (1) vel ad intellectus perfectionem, quia in eis veritatem speculatur; (2) vel ad suae virtutis executionem et scientiae explicationem, ad modum quo artifex explicat artis suae conceptionem in materia corporali; (3) vel etiam ad corporis sustentationem, quod est unitum animae intellectuali, sicut in hominibus patet.» SCG 3.112.
4. «Animae vero rationales quamvis non fiant a causis naturalibus; tamen corpora, quibus divinitus infunduntur sicut sibi connaturalibus, per operationem naturae fiunt.» DP 3.10.2.
5. «In rerum autem ordine imperfectiora sunt propter perfectiora» ST 2-2.64.1.
6. «omne agens agit propter finem, alioquin ex actione agentis non magis sequeretur hoc quam illud, nisi a casu.» ST 1.44.4.

7. St. Thomas explains that it is easier to identify an agent in case number (2): «with regard to those things to which it can extend by virtue of its essential principles, nature does not need to be determined by another, but only with regard to those things for which its own principles do not suffice. Consequently philosophers in saying that the work of nature is the work of an intelligence, were not led by observing the effects of heat and cold considered in themselves, since even those who said that natural effects were necessitated by matter referred all the works of nature to the agency of heat and cold. But they were led by observing those effects which were beyond the power of these qualities of heat and cold: such as the arrangement of members in the body of an animal in such wise that nature is safeguarded.» DP 2.3.5. However, any natural law—case number (1)—can ultimately be referred to God as «nature works for a determinate end under the direction of a higher agent, whatever is done by nature must needs be traced back to God, as to its first cause.» ST 1.3.2.
8. Cfr. ST 2-2.1.2.
9. M.I. George, *On the Tenth Anniversary of Barrow and Tipler's Anthropic Cosmological Principle: Thomistic Reflections of Anthropic Principles*, «American Catholic Philosophical Quarterly», 72/1 (Winter/1998), p. 42
10. De Koninck is not the only author defending this thesis. See, for exemple: F. Selvaggi, *Alcune considerazioni sull'origine della vita*, «Gregorianum», 39 (1958), pp. 141–151
11. «The principle of sufficient causality requires that the cause in question be at least at the level of the effect to be produced. That is understood. No natural being would have been able to educe from the potency of matter a composite superior to it, unless it is not the principal cause.» C. de Koninck, *The Cosmos*, in R. McInerny (ed.), *The writings of Charles de Koninck Volume 1*, University of Notre Dame Press, Notre Dame, Ind. 2008, p. 263
12. «Suarez, in denying the apodictic force of the arguments presented by St. Thomas to show in a strictly rational way the existence of pure spirits, cuts every essential link between the cosmos and the created spiritual universe. (…) Since Suarez, scholastics have abandoned more and more resolutely the ontological point of view in the explanation of nature. One imagines that scientific explanations replace the philosophy of nature and one retains only what is directly useful for theology.» Ibid., pp. 269–279
13. «The spiritual impulse exercised on the cosmos cannot bear directly on prime matter, since it does not have in itself any consistency, and is by definition associated with a form, but on a composite being. Moreover, the pure spirit cannot be the form of a matter. Acting on the cosmos, he unfolds it according to laws inherent in the cosmos, just as the sculptor submits to the exigencies of stone in order to extract his work. But the pure spirit acting on the world does not make a work of art. His influence brings forth natures.» Ibid., p. 274
14. «The desire of matter, while being fulfilled according to the measure of perfection of its actuating form—and in this measure the composite enjoys a certain fulfillment and rest—its essential desire persists unassuaged until it attains the spiritual form of man—let us rather say, of humanity. Matter remains tending,

under no matter what natural form, under forms increasingly more perfect. Thus matter is in its turn a principle of movement.» Ibid., p. 268

15. Indeterminism is a term is often used in many senses. De Koninck, among some other Thomists, argues that St. Thomas was an indeterminist in the strong sense. According to this view, random events are not the result of the accidental concurrence of several determinate causes but have an intrinsic cause. For a complete discussion on the topic see: S.L. Brock, *Causality and Necessity in Thomas Aquinas*, «Quaestio», 2 (2002), pp. 217–240
16. Cfr. C. de Koninck, *The Cosmos*, cit., pp. 286–287
17. C. de Koninck, *The Problem of Indeterminism*, in R. McInerny (ed.), *The writings of Charles de Koninck Volume 1*, University of Notre Dame Press, Notre Dame, Ind. 2008, p. 382
18. Cfr. C. de Koninck, *Reflections of the Problem of Indeterminism*, in R. McInerny (ed.), *The writings of Charles de Koninck Volume 1*, University of Notre Dame Press, Notre Dame, Ind. 2008, p. 395
19. «Materia, quae est ens in potentia, est id ex quo fit aliquid per se» CP 1.14.
20. «Non igitur potentia materiae est aliqua proprietas addita super essentiam eius; sed materia secundum suam substantiam est potentia ad esse substantiale.» CP 1.15.
21. «sicut potentia ad qualitatem non est aliquid extra genus qualitatis, ita potentia ad esse substantiale non est aliquid extra genus substantiae.» CP 1.15.
22. «sicut materia prima est pura potentia, ita Deus est purus actus.» DP 1.1.7.
23. «Potentia autem, cum sit receptiva actus, oportet quod actui proportionetur. Actus vero recepti, qui procedunt a primo actu infinito et sunt quaedam participationes eius, sunt diversi. Unde non potest esse potentia una quae recipiat omnes actus, sicut est unus actus influens omnes actus participatos, alioquin potentia receptiva adaequaret potentiam activam primi actus.» ST 1.75.5.1
24. Cfr. SCG 3.22.
25. «Sciendum est enim quod omne quod appetit aliquid, vel cognoscit ipsum et se ordinat in illud; vel tendit in ipsum ex ordinatione et directione alicuius cognoscentis, sicut sagitta tendit in determinatum signum ex directione et ordinatione sagittantis. Nihil est igitur aliud appetitus naturalis quam ordinatio aliquorum secundum propriam naturam in suum finem. Non solum autem aliquid ens in actu per virtutem activam ordinatur in suum finem, sed etiam materia secundum quod est in potentia; nam forma est finis materiae. Nihil igitur est aliud materiam appetere formam, quam eam ordinari ad formam ut potentia ad actum.» CP 1.15.
26. «appetitus formae non est aliqua actio materiae, sed quaedam habitudo materiae ad formam, secundum quod est in potentia ad ipsam». DP 4.1.
27. Cfr. CP 1.15.
28. «materia prima, quantum est de se, indifferenter se habet ad omnes formas. Si igitur non praeexistant quaedam formae et dispositiones ante alias per quas approprietur ad hanc formam vel ad illam, non magis recipietur in ea haec forma quam illa.». DSC 3.20.

29. Cfr. C. de Koninck, *Thomism and Scientific Indeterminism*, «Proceedings of the American Catholic Philosophical Association», 12 (1936), pp. 58–76; C. de Koninck, *The Problem of Indeterminism*, cit.; C. de Koninck, *Reflections of the Problem of Indeterminism*, cit.
30. «all we can say is that, given the perfection of the form, there will be that much more probability that it will conquer the matter. That matter should play no role is not determined in advance.» C. de Koninck, *Reflections of the Problem of Indeterminism*, cit., p. 420
31. «What exactly do we understand by contingency of the form? In fact, a form is not contingent because its essential co-principle is for it the possibility of non-being; the composite is corruptible because its form is contingent. It is the contingency of the form that is the intrinsic reason for the precariousness and uncertainty of existence. That is why we can conceive a form which would not be contingent despite its union with matter, the human form after the resurrection when the composite will be incorruptible.» C. de Koninck, *The Problem of Indeterminism*, cit., p. 380
32. Cfr. Ibid., pp. 386–390
33. «Est autem unumquodque contingens ex parte materiae, quia contingens est quod potest esse et non esse; potentia autem pertinet ad materiam.» ST 1.86.3.
34. « quaelibet res mota, inquantum movetur, tendat in divinam similitudinem ut sit in se perfecta; perfectum autem sit unumquodque inquantum fit actu: oportet quod intentio cuiuslibet in potentia existentis sit ut per motum tendat in actum. Quanto igitur aliquis actus est posterior et magis perfectus, tanto principalius in ipsum appetitus materiae fertur. Unde oportet quod in ultimum et perfectissimum actum quem materia consequi potest, tendat appetitus materiae quo appetit formam, sicut in ultimum finem generationis.» SCG 3.22.
35. «Every natural form tends toward man. The idea of man bursts forth from no matter what form, even from a material point of view. The essential desire of prime matter, which always indefinitely exceeds any form received, is to be actuated by the immobile form of man. And in this perspective, subhuman forms are much less states than tendencies.» C. de Koninck, *The Cosmos*, cit., p. 266
36. «Manifestum est autem quod unumquodque est appetibile secundum quod est perfectum, nam omnia appetunt suam perfectionem. Intantum est autem perfectum unumquodque, inquantum est actu, unde manifestum est quod intantum est aliquid bonum, inquantum est ens, esse enim est actualitas omnis rei, ut ex superioribus patet.» ST 1.5.1.
37. «Unde manifestum est quod ea quae moventur vel operantur tantum, sine hoc quod moveant vel faciant, tendunt in divinam similitudinem quantum ad hoc quod sint in seipsis perfecta; quae vero faciunt et movent, inquantum huiusmodi, tendunt in divinam similitudinem in hoc quod sint aliorum causae; quae vero per hoc quod moventur movent, intendunt divinam similitudinem quantum ad utrumque.» SCG 3.22.
38. «Similiter enim et materia prima in suam perfectionem tendit per hoc quod acquirit in actu formam quam prius habebat in potentia, licet et aliam habere

desinat quam prius actu habebat: sic enim successive materia omnes formas suscipit ad quas est in potentia, ut tota eius potentia reducatur in actum successive, quod simul fieri non poterat. Unde, cum corpus caeleste sit in potentia ad ubi sicut materia prima ad formam, perfectionem suam consequitur per hoc quod eius potentia tota ad ubi reducitur in actum successive, quod simul non poterat fieri.» SCG 3.22.

39. «a being whose essence is composed of matter and form can only have a complex existence successively realized.» C. de Koninck, *The Cosmos*, cit., p. 283
40. Cfr. Note 49 in L. Dewan, *The Importance of Sustance*, in L. Dewan (ed.), *Form and Being: Studies in Thomistic Metaphysics* (*Studies in Philosophy and the History of Philosophy*), Catholic University of America Press, Washington, D.C. 2006, pp. 96–130; Dewan's critique of Owen's conception of substantial being can be found in L. Dewan, *St. Thomas, Joseph Owens, and Existence*, «New Scholasticism», 56 (1982), pp. 399–441
41. Cfr. «Charles De Koninck devoted his philosophical career to answering three of the questions which have most exercised contemporary man and women: How to understand the growing chasm between our scientific world pictures and the world as it appears to common sense? How can we understand the power of modern science and accept its insights while maintaining our most central and traditional religious beliefs? And how can we maintain the responsibility and dignity of the individual without undermining the communities in which we live and without denying the scientific accounts of human nature.» L. Armour, *The Philosophy of Charles De Koninck*, in R. McInerny (ed.), *The writings of Charles de Koninck Volume 1*, University of Notre Dame Press, Notre Dame, Ind. 2008, p. 1
42. See, for example: «The natural being which seems not to change or to be changed in any other way can only continue its existence on condition that it be constantly renewed. Existence is received by it only in a successive and continuous manner. Successive and continuous duration is the definition of time. If this successive duration were not continuous the natural being could only exist by always becoming other. In this regard the whole of nature is in state of constant flow.» C. de Koninck, *The Cosmos*, in R. McInerny (ed.), *The writings of Charles de Koninck Volume 1*, University of Notre Dame Press, Notre Dame, Ind. 2008, p. 257
43. «would I say that existence changes constantly while the essence remains immobile, and that it is by its immobility that the identity of the being is safeguarded? That won't work: for such an essence would both simultaneously and successively have existence. Mobility penetrates to the very essence of a being which exists successively.» Ibid., p. 260
44. «We have already said that this principle [determinism] completely abstracts from real time because it presupposes a perfect symmetry between the coordinates of space and the coordinate of time, which renders impossible any future that is not already determined. Whatever the moment in which one looks at the universe, be it in the past or toward the future, it is always identical with itself. The perspective changes nothing, such that time has no privileged direction; as

Eddington says, there is no arrow. Such symmetry immobilizes the universe.» C. de Koninck, *The Problem of Indeterminism*, cit., p. 365

45. «Still, it is impossible that the entire future should be really predetermined in the past or present state of the universe. If it were, since matter is something real and not a pure logical possibility, the future would already exist; everything really possible in matter would exist simultaneously and eviternally; the pure potentiality of matter would be wholly deprived of any real meaning. And if the future is not predetermined in the present, then there is uncertainty, the future contingent.» C. de Koninck, *Reflections of the Problem of Indeterminism*, cit., p. 408
46. «From the origin of the world and until the intervention of free agents, everything would be given once and for all, and the future would wait only a lazy existential determination.» C. de Koninck, *Reflections of the Problem of Indeterminism*, cit., p. 403; «At the bottom, it is time that rebels against the physical principle of causality and is the enemy of the determinist. Even if the entire past had realized his hopes, the future will still be uncertain, unless he can demonstrate that the future is present and that he suppresses time. In this case the principle of causality becomes absolutely useless—there is no longer anything to predict.» *Ibid.*, p. 429
47. «rerum enim quae sunt diversae secundum suas naturas, non est colligatio in ordinis unitatem nisi per hoc quod quaedam agunt et quaedam patiuntur.» SCG 3.69
48. Cfr. p. 5 note 12. De Koninck has a similar text in *The Problem of Indeterminism*: «Just as the necessity of willing happiness in general does not deprive us of liberty, and that this does not prevent us from attaining infallibly an absolutely determined end, so the laws of nature, without being absolutely necessary, necessarily conduct to its end. There are then determined limits, but within these limits there is play; these laws then are neither purely contingent nor absolute. They are, consequently, truly natural, that is, never perfectly determined *ad unum*. As has been said, the being whose form is entirely determined in itself is not natural.» C. de Koninck, *The Problem of Indeterminism*, cit., p. 379
49. «Ad secundum dicendum quod in rebus naturalibus id quod est naturale quasi consequens formam tantum, semper actu inest, sicut calidum igni. Quod autem est naturale sicut consequens materiam, non semper actu inest, sed quandoque secundum potentiam tantum.» ST 1-2.10.1.2
50. This is the case of the *concursus* of several determinate causes that originates a cause *per accidens*.
51. «Sed homo agit iudicio, quia per vim cognoscitivam iudicat aliquid esse fugiendum vel prosequendum. Sed quia iudicium istud non est ex naturali instinctu in particulari operabili, sed ex collatione quadam rationis; ideo agit libero iudicio, potens in diversa ferri. Ratio enim circa contingentia habet viam ad opposita; ut patet in dialecticis syllogismis, et rhetoricis persuasionibus.» ST 1.83.1.
52. Cfr. ST 1-2.10.1.
53. «The determinist is thus frustrated at the two antipodes of the universe of the possibility of identifying his ideas. To identify determinism at the macrocosmic

level, he would need an ensemble of infinite size. If he has recourse to the microscopic level as his last refuge, he would then need a quantity infinitely small in size. From the experimental point of view, the principal of physical causality is consequently a pure postulate whose justification requires impossible conditions.» C. de Koninck, *The Problem of Indeterminism*, cit., p. 365

54. «is it necessary to say how different is the indeterminism of contingentism of which certain apologetics manuals speak? Indetermination is in effect within certain determined limits according to the case studied. But contingentism, as these manuals also interpret it, seems to imply that the improbable is as probable as the probable, and that there is equal indifference at every level; that there is regularity by chance; even that is not impossible that we die with six facets should reveal a seventh, that a mouse be suddenly transformed into an elephant, or into two elephants, etc.» C. de Koninck, *The Problem of Indeterminism*, cit., note 22
55. De Koninck's metaphysical proofs that man is the end of the cosmos are simple and ingenious. His claim that evolution of matter points to the existence of principal spiritual causes that act in nature is also very smart. Besides, like Dewan says, the merit of *The Cosmos* «quite aside from modern interests in evolution, is the extent to which it adds to the intelligibility of educing form from the potency of matter.» L. Dewan, *The Importance of Substance*, cit., p. 126
