

No organism is an island: the philosophical context regarding life and environment

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The encyclical *Laudato Si'* constitutes an important addition to Catholic social teaching.¹ Many commentators have analyzed its social and political contributions from a theological viewpoint and have produced useful results about the origin of its main ideas and about their implications.² One perspective however remains somewhat underexplored. Few studies have explored the presuppositions that are primarily philosophical. Few have surveyed the conceptual history that serves as the background to its entire message. To appreciate the full impact of this major contribution of the Church, it is becoming increasingly evident that we need to explore this philosophical background. We need to uncover its ontological and epistemological commitments with respect to complex debates in both philosophy and science, debates that have been laboriously hammered into shape in the course of history. For instance, it would be quite irresponsible, and perhaps even counterproductive, to summarize the encyclical's message by merely using clichés like “everything is connected to everything else” without referring to the underlying philosophical debates supporting this statement. A full appreciation of the encyclical's message, therefore, requires us to position the document and its arguments within the long narrative of conceptual and scientific history of which it forms a significant part. Given its rich and interdisciplinary content, many of its arguments could not be presented except in a summary form despite their complex background. It is obvious therefore that if the conceptual and historical background is explored carefully, the encyclical's message will stand out in a clearer light.

The philosophical debates we are referring to here are, of course, many. They include debates concerning reductive materialism, intrinsic and instrumental value, the ontological category of relation, the common good, and many others. This paper will focus on one of these only. It will concentrate on the debate concerning the very idea of environment and the way life is intelligible in terms of relations. In its simplest, primary meaning, the word “environment” refers to the surroundings of the thing that we are considering, the environment here being conceived somewhat as their container. We ourselves however, as human individuals, can be considered an environment with respect to the enormous number of bacteria living within us. And so also all other living creatures.³ Although the distinction between a living thing and its environment is very often clear, life itself cannot be understood exclusively in terms of the dispositions within the organism taken in isolation. Life is a function of both the organism and its environment. The boundary between them is porous. These preliminary remarks already indicate how the very concept of environment is certainly not simple. An awareness of the philosophical and scientific background in this area, and more

¹ Pope Francis, Encyclical Letter *Laudato Si' on Care for Our Common Home*, 24 May 2015, n. 15.

² Overviews of such contributions are many. See for instance the special issue of Paul G. Crowley, ed. *Theological Studies* [special issue], vol. 77/2 - 2016; and Humberto Miguel Yañez SJ, ed., *Laudato si'. Linee di lettura interdisciplinari per la cura della casa comune*, Rome: Gregorian & Biblical Press, 2017.

³ The concept of *milieu intérieur* was the key concept for the physiologist Claude Bernard (1813-1878).

detailed inquiry, are therefore indispensable for a deeper appreciation of the message of *Laudato Si'*. The guiding question for this paper will be the following. If we determine how the encyclical's arguments regarding life, the environment, and ecology, are situated within the history of ideas, what new insights become available, especially as regards the encyclical's original contribution? The first section of the paper will deal with the idea of environment as this is presented in the encyclical. This presentation is followed by three sections on the history of the concept: a section on early views, namely those that flourished roughly up to the early nineteenth century, a section on views that see nature as a guided process, and another section on views that see nature as an unguided process. The fifth section will explore how ecological explanations and human sociology became mutually entangled, as it were, each discipline borrowing metaphors from the other, with consequences both positive and negative. The concluding section will then situate the message of *Laudato Si'* within this long line of inquiry so as to bring out the encyclical's specific contribution.

1. The idea of environment in *Laudato Si'*

It should not come as a surprise that the concept of environment plays a major role within the encyclical. It is present in various ways in different sections, often where creatures are mentioned and presented as living within it, surrounded by it, and sustained by it. Human beings of course are no exception. Rather than enumerate all the appearances of this concept, in all its various forms, within the entire document, what follows will focus on the most significant paragraphs only, namely on those that expose a fundamental philosophical debate concerning the very idea of environment. We find these paragraphs in section four of Chapter Two, which is entitled "The mystery of Creation", and in section one of Chapter Four, which is entitled "Integral Ecology".⁴

The first of these refers to the somewhat undervalued metaphysical category of relation for the correct understanding of being in general. Chapter two, section four, expounds the theme of the harmony of creation and starts by highlighting the balance there should be between the importance of human beings and that of other creatures: "each creature has its own purpose. None is superfluous" (para. 84). Here, the main point is that the finality of creatures is not necessarily associated with, or dependent upon, the needs of human beings. The dynamism evident in our universe, in all its levels of complexity, suggests that, to understand it correctly, we need to see all creatures as enjoying a degree of integrity and autonomy. We need to see them as constituting a fellowship of travelers, each one engaged on a journey of self-fulfillment together with us humans. Up to this point in the encyclical, there is no direct reference to the idea of environment. The unexpressed assumption is apparently that the environment is the overarching container within which creatures live and flourish as they find their way back to the Creator from whom they had issued. The paragraphs immediately following paragraph 84 are crucial because they highlight the importance of creatures as constituting a society, a fact that should urge us to see ourselves "in relation to all other creatures". The idea of a fabric of crisscrossing relations starts emerging. In paragraph 86, this idea becomes more explicit in the expression "the universe as a whole, in all its manifold relationships". We notice therefore how the universe is not just the collection of all creatures. It encompasses rather this collection of all

⁴ As regards textual details, one might be interested to know that the word "environment" and its derivatives, like "environmental", appear 150 times in the encyclical. At times, the encyclical qualifies "environment" by adjectives like "natural", "social", or "human". The adjective "environmental" occurs most often in the expression "environmental degradation". In para. 95 we find an explicit attempt at a definition: "the natural environment is a collective good". The most direct treatment, however, of the very idea of environment occurs in para. 139. These textual considerations in this footnote refer to the English version. One may recall that the encyclical was released as a simultaneous publication of several official translations. The Latin version uses "ambitus" for the word "environment".

creatures together with the relations between them. The text then quotes the important statement from the Catechism of the Catholic Church, “creatures exist only in dependence on each other, to complete each other, in the service of each other”.⁵

The main section dealing with the very idea of environment is in Chapter Four, entitled “Integral Ecology”. The inter-relatedness highlighted above becomes the focus of the argument with a special emphasis on the inevitable links between the natural, social, and economic dimensions. The starting point of this proposal lies at the biological level. The encyclical acknowledges that humanity is learning more and more about the intricacy of biological inter-relatedness: “Just as the different aspects of the planet – physical, chemical and biological – are interrelated, so too living species are part of a network” (para. 138). This inspires us therefore to extend our view beyond the biological sphere. It demands that we reach out beyond the merely material aspects and become aware of another network that is immaterial, namely the network of social, economic, and cultural inter-relatedness. This other network is typically human, constituting a distinct covering layer over the biosphere. The following paragraph, para. 139, therefore, defines the environment as the relationship “existing between nature and the society which lives in it”. Natural reality and human reality are not two distinct and separate things but one complex whole. The encyclical therefore exposes the limitations of seeing the environment as a mere container in which creatures are allegedly meant to flourish. Nature is not “a mere setting in which we live” (para. 139). The emphasis on the importance of the philosophical category of relation obliges us to consider the essence of humanity not in terms of specific attributes of the human individual, each individual taken as an isolated unit, but in terms of the network of relations that individuals have with the environment in which they live and flourish, in other words, with the environment in a broad sense. Separating the organism from its environment will lead to distorted understanding.

The encyclical therefore defends the idea that organism and environment need to be seen, in some special way, as one whole that enjoys a dynamic balanced state. Moreover, groups of organisms are woven together among themselves by mutual relations, forming ecosystems. These ecosystems are themselves connected to each other by further mutual relations at a higher level, thus constituting other larger ecosystems. We are far therefore from that idea that organisms are mere occupants of their environment, seen as an inert container. The environment of some organisms is itself constituted by organisms. Ecosystems themselves need other ecosystems at higher level as their environment. Due to this intricacy, we need to acknowledge the value of nature not only in relation to our human needs but also in relation to itself.

Ongoing research should also give us a better understanding of how different creatures relate to one another in making up the larger units which today we term “ecosystems”. We take these systems into account not only to determine how best to use them, but also because they have an intrinsic value independent of their usefulness. Each organism, as a creature of God, is good and admirable in itself; the same is true of the harmonious ensemble of organisms existing in a defined space and functioning as a system.⁶

The philosophical assumption behind this position is quite clear. Since we need to take a broader view of living things, since we need to zoom out and see the organism as part of the ecosystem, and then to zoom out even further and see that ecosystem as part of a larger ecosystem, we are obliged to

⁵ Catholic Church, *Catechism of the Catholic Church*. Vatican City: Libreria Editrice Vaticana, 1994, n. 340.

⁶ Pope Francis, *Laudato Si'*, n. 140.

revise our simple notion of environment as inert container. We need to avoid trying to understand life by focusing exclusively on the organism. We need to be aware of the limitations of models of biological and ecological explanation that are satisfied with micro-explanations dealing with the “within” of the organism but neglect the importance of relations at higher levels.

This completes our overview of the encyclical’s position regarding the environment. What can we learn if we compare these views with the various ideas that emerged and were discussed, analyzed, evaluated, quantified, verified, or falsified in the course of many centuries of inquiry and speculation about the environment?

2. The emergence of the very idea of environment

It could be argued that early religious and philosophical cosmologies were all, in a sense, an effort to describe and understand the surroundings of human life. Consider, for instance, how the cosmologies of Ancient Greece dealt primarily with the fundamental nature of the universe. Plato in his *Timaeus* left us an influential narrative that highlights the order and beauty manifested by the entire world. What is ordered and beautiful here refers to the environment understood in the broadest possible sense, extending from our immediate surroundings to the distant stars. Plato’s proposal, whether intended literally or metaphorically, highlights how the material universe is not a chaos but a cosmos, an ordered whole that manifests goodness and beauty as intended by the craftsman who produced it. The intricate relations holding the various parts of the universe together are of the same order as those that occur within a living organism. Plato therefore takes the universe itself as one enormous living thing, whose parts include all the living species we know of, even ourselves.⁷ In such a description of the living universe, we do not find the use of direct personal attributes. Plato does not say that the universe loves us or cares for us. In this respect, his idea differs from what we find in the first line of *Laudato Si*, “our common home is like a sister with whom we share our life and a beautiful mother who opens her arms to embrace us”. There is no indication that Plato envisaged the universe in line with this metaphor, as a caring person. His view however did point in this direction. His student Aristotle continued more or less on these lines. He did not agree with Plato’s idea of a definite beginning of the world, but he nevertheless accepted Plato’s insistence on the major features of the universe, namely order and beauty. The basic unit of Aristotle’s cosmological understanding was the concept of nature, which he took to be the inner principle of change or motion.⁸ For him, to understand an entity’s change or motion, we need to refer to that entity’s nature and also to any intervening circumstances, which themselves are explainable in terms of the nature of other entities. All motion or change is either according to the entity’s nature or contrary to it. In the latter case, the motion is called violent. For Aristotle, the good of the universe resides in both its cause, the Unmoved Mover, and in itself. This latter kind of good is evident in the way the universe is ordered. What kind of order are we talking about here? Aristotle uses the analogy of an army. We say that an army is good when it is ordered and when that order corresponds to what its leader wants. The universe is like that. It manifests goodness “as an army does; for its good is found both in its order and in its leader, and more in the latter; for he does not depend on the order but it depends on him. And all

⁷ His exact wording is fascinating, bringing together the concept of universe, life, intelligence, and God. See, Plato *Timaeus* 30b “τὸν κόσμον ζῶον ἔμψυχον ἔννοον τε τῇ ἀληθείᾳ διὰ τὴν τοῦ θεοῦ γενέσθαι πρόνοιαν” which B. Jowett translates as “the world came into being – a living creature truly endowed with soul and intelligence by the providence of God”. See Plato, *Timaeus*. Translated by Benjamin Jowett in Edith Hamilton and Huntington Cairns. ed. *The Collected Dialogues of Plato*. New Jersey: Princeton University Press, 1982, p. 1163.

⁸ Aristotle, *Physica*. Translated by R. P. Hardie and R. K. Gaye, in *The Basic Works of Aristotle*, edited by Richard McKeon. New York: Random House, 1941, p. 236.

things are ordered together somehow, but not all alike – both fishes and fowls, and plants; and the world is not such that one thing has nothing to do with another, but they are connected.”⁹

These foundational ideas were developed further within a Christian setting by St. Thomas Aquinas who not only accepted nature’s order and beauty but also accepted that nature is not all rosy and attractive. It has a dark side to it: elements of conflict, violence, and contraries. How are we to understand this dark side? For some philosophers, the occurrence of contraries in nature revealed environmental disorder. Predation, for instance, apparently indicated an intrinsically conflictual universe, a kind of battleground where the principle of good wrestles against the principle of evil. Aquinas, resorting to the revealed doctrine of Creation, resolved these problems by fixing as his point of departure the truth that God is the origin of all there is. The contraries in nature, therefore, are only apparent. “The very order of things created by God manifests the unity of the world [...] and whatever things come from God, have relation of order to each other, and to God Himself.”¹⁰ The kind of order he had in mind included what for us appears as conflictual, and moreover, it was not the kind of order established by mere multiplicity, as in the case of many similar bricks constituting a house. It was rather the kind of order that is evident in coordinated diversity, as we see in the case of different organs constituting a living being. “The good and the best of the universe consists in the order of its parts to one another, which cannot be without distinction”.¹¹ Difference is a richness. The fact that the environment contains enormous diversity is neither a mistake nor the result of chance. It shows the wisdom of the Creator. The perfection of the universe in fact consists in the order among parts precisely when these parts differ from one another. “There is a certain affinity and order of one with the other. For plants are for the sake of animals, and animals are for the sake of human beings. And that all are ordered to one another is evident from the fact that all are ordered to one end at the same time.”¹² Aquinas returns to Aristotle’s two images, the universe as a house and the universe as an army, but adds his own insight. He adds the overarching truth that the origin of everything resides within God’s will. For Aquinas, the house analogy highlights the order and complementarity between parts in a static way. The army analogy, on the contrary, highlights the order that is dynamic. It highlights how the interaction between the parts, despite their differences, is a kind of communication with the whole, each part enjoying a specific degree of participation within an overall project. For the universe as a whole, the project is the will of the Creator.¹³

⁹ Aristotle, *Metaphysica*. Translated by William Davis Ross, in *The Basic Works of Aristotle*, edited by Richard McKeon. New York: Random House, 1941, p. 886.

¹⁰ Thomas Aquinas, *Summa Theologiae* I, Q 47, art. 3: “ipse ordo in rebus sic a Deo creatis existens, unitatem mundi manifestat. [...] Quaecumque autem sunt a Deo, ordinem habent ad invicem et ad ipsum Deum” (my translation). (<https://www.corpusthomicum.org/iopera.html>) accessed 18/11/2020.

¹¹ Thomas Aquinas, *Summa Contra Gentiles*, II, c 39: “bonum et optimum universi consistit in ordine partium eius ad invicem, qui sine distinctione esse non potest” (my translation). (<https://www.corpusthomicum.org/iopera.html>) accessed 20/11/2020.

¹² Thomas Aquinas, *Sententia Metaphysicae*, lib. 12, I, 12 n. 6 “est aliqua affinitas et ordo unius ad alterum. Plantae enim sunt propter animalia, et animalia sunt propter homines. Et quod omnia sint ordinata adinvicem, patet ex hoc, quod omnia simul ordinantur ad unum finem” (my translation). (<https://www.corpusthomicum.org/iopera.html>) accessed 6/11/2020.

¹³ Further analysis here should include also another analogy used by Aristotle. Apart from the house and the army, Aristotle sometimes resorts to the analogy of a household, which is not the building as such but the social unit with its different levels. “For all [things] are ordered together to one end, but it is as in a house, where the freemen are least at liberty to act at random, but all things or most things are already ordained for them, while the slaves and the animals do little for the common good, and for the most part live at random; for this is the sort of principle that constitutes the nature of each” (*Metaphysica* Bk XII, chap. 10, 1075a 20-23; p. 886). Aquinas draws inspiration from this Aristotelian text to understand the ordered hierarchy between creatures. This point is of secondary importance as regards the scope of this

The early seventeenth century started introducing significant changes as these medieval views were questioned, modified, or abandoned by some prominent philosophers. Galileo Galilei and René Descartes engaged in a radical revision of the key concepts they grew up with, and launched a new view according to which the quantifiable properties of the environment, properties like size, shape, and motion, were given priority, while other attributes, like heat, weight, and color, were considered either reducible to the other quantifiable attributes or else irrelevant. The fact that nature manifested an impressive order was not denied. What was denied was the assumption that this order, which included the innumerable dependency relations between entities, was the result of the specific nature of each entity. Instead of this assumption, the new project adopted a purely mechanistic worldview according to which the only way to understand the order of nature was to refer to the properties of quantity and extension. All material entities, living or non-living, were considered nothing more than combinations of corpuscles or atoms, and each of these corpuscles or atoms were seen as following the laws of nature with mathematical precision. The world manifested the order of an extremely sophisticated machine. The fascination that this mechanistic view of nature, together with its technological potential, generated was considerable. Nevertheless, the reaction against it was not long in coming. It took the form of what historians now call the Romantic movement, which including the works of prominent figures like W. Wordsworth, F. Schelling, and J. W. von Goethe. By highlighting the limitations of the mechanistic philosophy's basic method, namely analysis and experimentation, these authors generated interest in organismic philosophies and sought to understand the environment in terms of holism or vitalism. This meant a return to the previous mode of appreciating nature, namely the mode of seeing it not just as a passive source of raw material, waiting to be exploited, still less as an enemy of human flourishing, but, on the contrary, as a major work of art exhibiting goodness, beauty, and harmony.¹⁴

Against this conceptual background, the general features of the science of ecology emerged slowly during the nineteenth and twentieth centuries. A full and responsible account of the tentative beginnings of new ideas is not easy. To facilitate our task, the emergence of ecology will be presented by highlighting two main trends. These were evident from its earliest stages, one giving priority to the idea of ecological harmony and the other to the opposite: ecological randomness and discord.

3. The environment as a guided dynamism

Prominent among the early ecologists who defended a harmony view of the environment were Alexander von Humboldt (1769-1859), Henry D. Thoreau (1817-1862), and Frederick Clements (1874-1945).¹⁵ The first one was a leading figure of Romanticism, and he engaged in empirical work to defend the idea that nature is a beautiful, unified whole. Like his contemporary Charles Darwin (1809-1882), he embarked on long expeditions in the New World and drew inspiration from the rich flora and fauna he encountered. He interpreted what he observed as an optimistic view of nature, in

paper. For more information, see Oliva Blanchette, *The Perfection of the Universe According to Aquinas: A Teleological Cosmology*. PA: Penn State University Press, 1992, pp.12-19.

¹⁴ The basic project of the Romantics has re-emerged in current phenomenological approaches to ecology. These approaches, which will not be mentioned here because of lack of space, apply Edmund Husserl's method to reveal the limitations of a technology-dominated mentality and to suggest novel ways of understanding our experience of the world. See for instance, S. Charles Brown and Ted Toadvine, *Eco-Phenomenology: Back to the Earth Itself*. New York: SUNY Press, 2003.

¹⁵ For the history of ecology from the 18th century onwards, useful sources include Donald Worster, *Nature's Economy: a history of ecological ideas*. Cambridge: Cambridge University Press, 1994; Paul Warde, Libby Robin and Sverker Sörlin, *The Environment: a history of the idea*. Baltimore: Johns Hopkins University Press, 2018; S. Etienne Benson, *Surroundings: A History of Environments and Environmentalisms*. Chicago: University of Chicago Press, 2020.

the sense that nature, for him, was clearly driven forward by collaboration and mutual support among the various species. The environment was the canvas on which all forces and counterforces are brought together, in a meaningful whole, forming the complex but harmonious picture we call life.¹⁶

Henry Thoreau, like Humboldt, sought to build his understanding of nature on empirical grounds, and became a keen observer of the various kinds of natural environment within the United States of America. His observations eventually convinced him that people needed to disengage from an excessively anthropocentric view of nature and to adopt a new perspective, the one we now would call a biocentric view.¹⁷ He accepted of course that the view we have is always our view. We cannot see things from elsewhere. Nevertheless, he argued that only if we downplay the centrality of the human viewpoint could we have access to the rich relations that constitute the environment. For him therefore, being human is nothing more than the place where we stand as we observe. It should not be valued more than that. On these grounds, he defended an ethic of perception. For him, this meant that we are obliged, in the moral sense, to perceive properly, correctly, and completely. For instance, the child's appreciation of the flowering meadow is rich in simple forms of appreciation. Unfortunately, these forms of appreciation shrivel away as the child grows up. They become inaccessible to the adult, whose perception is dulled and diminished by instrumental thinking, selective memory, and misplaced attention. For Thoreau, this change in adult perception is morally significant. If humans want to perceive the truth and the beauty of nature, they need to purify themselves first. An ascetic effort is needed. This aspect is reminiscent of Plato's myth of the cave in which the prisoner can only leave the shadows and arrive at the light through effort and determination. For Thoreau, the light corresponds to the appreciation of the harmony and the beauty of nature.

Further developments on this arcadian view of nature are found in the work of Frederick Clements. His main contribution was very influential. He proposed that, within any given environment, the various processes of nature work in successive stages to arrive at a climax state. This idea depended upon the work of other ecologists whose focus was on inter-species dependence, collaboration, and symbiosis, rather than on competition between species. The unity between the various species was for them a reflection of the internal unity and effective collaboration we find within the individual living body. Cohabiting species, therefore, are best described as forming a community. Clements and his peers argued that, for any given environment, organisms progress slowly but steadily to establish the most diverse, well-balanced, and self-perpetuating society of organisms. Clements was particularly interested not just in the flux of nature but in the way that flux was ordered. His reasoning started from what we see within the individual organism. We all accept that the changes we see within the individual organism are not aimless but stages within a growth, an ordered movement towards a final point of arrival. Clements enlarged this view. He shifted the idea of finality from the single organism to the entire environment, claiming that the changes we observe regarding the various species, their flourishing, their competing, their migration, their extinction, and so forth, are linked together to form a kind of string of life with a final end in view. He called this end the climax stage that is supported or allowed by the profile of that particular environment. Nature's

¹⁶ See for instance Alexander von Humboldt, *Cosmos: a sketch of the physical description of the universe*. Translated by E. C. Otté. New York: Harper & Brothers Publishers, 1877. He describes his project as "an attempt to delineate nature in all its vivid animation and exalted grandeur, and to trace the *stable* amid the vacillating, ever-recurring alternation of physical metamorphosis", Vol. I, p. xii.

¹⁷ See, for instance, Henry David Thoreau, "Walking" in *The portable Thoreau*, edited by Carle Bode. New York: Penguin, 1982, p. 621: "Here is this vast, savage, howling mother of ours, Nature, lying all around, with such beauty, and such affection for her children, as the leopard; and yet we are so early weaned from her breast to society, to that culture which is exclusively an interaction of man on man [...]."

drive, therefore, is not aimless. It is rather a slow and steady movement towards a climax stage that remains relatively stable due to the homeostatic potential of nature itself.¹⁸ These reflections, which Clements derived mainly from his plant ecological studies, led him to restore the ancient idea, now articulated in empirical terms, that the entire world is one huge living thing. He was convinced that, when the final climax configuration of a given environment is reached, that configuration is indeed a collective organic entity in its own right.

At this point of our historical overview of ecology, it is interesting to note that the idea of environmental harmony and equilibrium discussed so far corresponds directly to some key concepts in *Laudato Si'*. For instance, when discussing biodiversity, the encyclical refers to the intricate balance discernible within any given environment, a balance that depends not only on organisms that are easily observable but also on those too tiny to see: "Some less numerous species, although generally unseen, nonetheless play a critical role in maintaining the equilibrium of a particular place" (34). In paragraph 84, as indicated above, the encyclical mentions how each organism has its own purpose within the overall harmony of nature. The encyclical does not see natural contraries as an objection to the idea of harmony. On the contrary, faith in a loving and merciful Creator supports the conviction that the enormous diversity we see in nature, despite its conflictual values as we see in predation, is perfectly intelligible with reference to divine goodness. On this point, the encyclical quotes St. Thomas Aquinas who argued that God allowed multiplicity and diversity of living things so that "what was wanting to one in the representation of the divine goodness might be supplied by another."¹⁹

During the early twentieth century, this harmony view of ecology gained support not only from empirical studies but also from some philosophical works of that period. The most influential of these was probably the work of Alfred North Whitehead, who, as a proponent of organicism, inspired ecologists to explore the interrelatedness of nature in terms of organic wholes nested within each other at successive levels, forming thereby various hierarchies. For Whitehead, "actuality is through and through togetherness," and "nature is a theatre for the interrelations of activities".²⁰ By such typical affirmations, he meant that any given entity is intelligible, and thereby real, not in isolation but in relation to its neighboring entities, and ultimately in relation to the universe as a whole. Now, we often assume that an individual organism is quite distinct from its surroundings and can therefore be studied as an independent unit. That individual organism however may form part of a larger whole, about which we know little or nothing at all. If even the lifecycles of simple creatures we can readily perceive, like butterflies and beetles, can be bewildering, how complex then would be the larger ecosystems we cannot readily perceive. Ecologists wanted to face such natural complexity and, with Whitehead's support, felt philosophically supported in their proposal that the higher-level unit was, in a sense, an organism as well. The harmony of nature reveals itself as a kind of evolution that is emergent, in the sense that wholes that appear at higher and higher levels of organization are more than the mere sum of their parts.

Another philosopher who inspired ecologists was Jakob von Uexküll who worked mainly as a biologist but wrote an influential philosophical book with the title *A foray into the world of animals*

¹⁸ For an overview, see Frederic E. Clements, "Nature and Structure of the Climax" (original 1936), in *Dynamics of Vegetation*, edited by Berton Wendell Allred and Edith S. Clements. New York: H. W. Wilson Company, 1949, pp. 119-160.

¹⁹ St. Thomas Aquinas, *Summa Theologiae* I, Q 47, art. 1, quoted in para. 86 of *Laudato Si'*: "quod deest uni ad repraesentandam divinam bonitatem, suppleatur ex alia".

²⁰ The first quote is from Alfred North Whitehead, *Science in the Modern World*. New York: Free Press, 1967, p. 174; the second from his *Modes of Thought*, p. 140 (Alfred North Whitehead, *Modes of Thought*. Toronto: Free Press, 1938).

and humans (1934).²¹ To study the phenomenon of life in its various forms and interrelations, Uexküll used the word *Umwelt*, which means surrounding-world or milieu.²² Each kind of animal, even if very simple, has specific perceptual possibilities and these possibilities determine that animal's world. For Uexküll, even the simplest, primordial kind of sentience is perception, and every lifeform is therefore a subject. The organism's ways of registering the surroundings, as it perceives and as it thereby constitutes its *Umwelt*, are brought together into a single project. The fact that the organism survives through time shows that it and its *Umwelt* are well tuned to each other. A simple organism is well tuned to its simple *Umwelt*; a complex organism to its complex *Umwelt*.

Subject and object are interconnected with each other and form an orderly whole. [...] All animal subjects, from the simplest to the most complex, are inserted into their environments to the same degree of perfection. The simple animal has a simple environment; the multiform animal has an environment just as richly articulated as it is [i.e. as the animal is].²³

Notice how, for Uexküll, we should not visualize the organism as choosing some features of the world while neglecting others. From its viewpoint, there is no choosing. For any given organism, there are no features of the world except those that it can perceive. Moreover, those features it can perceive are the determinants for its existence.²⁴ For him, the harmony in nature is like music. Life is a matter of "being in tune with". For instance, maple keys are not just blown around by the wind.²⁵ They are not passive, like, say, clouds. On the contrary, they "use" the wind. Their form is attuned for the wind. The point here is not that maple keys use the wind deliberately. Nor is it that evolution can never explain this phenomenon. The point is rather that, irrespective of how the phenomenon arose, we should acknowledge this basic feature of life, namely one thing "using" another, one thing being in tune with another.²⁶

A third philosopher we may mention who inspired ecological holism and the idea of a harmonious nature was Georges Canguilhem especially through his book *La connaissance de la vie* (1952). In this work, he presents an original exploration of the very idea of environment or milieu, with reference not only to biology but also to technology. He argues that, all along the rapid growth of the natural sciences and technology, "the problem of the relation between machine and organism has been studied, in general, in one direction only".²⁷ By this he means that we have sought to explain the organism in terms of the machine, never the other way round. We thereby have never considered the specific richness of life, as such, a real question.²⁸ We saw it only as a question to be dismantled,

²¹ First published in Germany in 1934, *Streifzüge durch die Umwelten von Tieren und Menschen*; English translation: Jakob von Uexküll, *A Foray in the Worlds of Animals and Humans*, translated by J. D. O'Neil. Minneapolis and London: University of Minnesota Press, 2010. This English edition includes the paper "A theory of meaning". Throughout this book, Uexküll justifies his arguments by many interesting biological observations.

²² This notion had a decisive influence on a number of key twentieth century thinkers like Martin Heidegger and Gilles Deleuze.

²³ J. von Uexküll, *A Foray in the Worlds of Animals and Humans*, pp. 49-50.

²⁴ He writes, "Every subject spins out, like the spider's threads, its relations to certain qualities of things and weaves them into a solid web, which carries its existence." J. von Uexküll, *A Foray in the Worlds of Animals and Humans*, p. 53.

²⁵ Maple keys are maple seeds attached to a kind of wing that rotates as it drops, carrying the seed across a considerable distance before it hits the ground.

²⁶ Uexküll's link between the idea of meaning and that of use finds an analogue not only in Ludwig Wittgenstein's later writings but also in Martin Heidegger's ideas, especially his study of *Zuhandenheit*.

²⁷ "Le problème des rapports de la machine e de l'organisme n'a été généralement étudié qu'à sens unique." Georges Canguilhem, *La connaissance de la vie*. Paris: Hachette, 1952, p. 124 (my translation).

²⁸ I am assuming that a question becomes real for a specific scientific community in a specific time when that community has reasons to believe that the question is relevant. For more on real questions within the context of environmental studies,

broken down into pieces that could allegedly be explained mechanically. The organism in fact became a complex system of push-pull relations, a system that enjoys a state of internal equilibrium until it deteriorates. This one-way explanatory method, reducing all life to mechanics, assumes that, in the universe, the stable position is death, not life. Life becomes a kind of precarious superstructure inevitably destined to return sooner or later to the state of inanimate matter. For Canguilhem, a serious distortion is at work here. For a correct understanding, we need to recall that machines are human products. They do what humans do. The realm of technology is anthropomorphic. Therefore, the starting point for explaining the natural environment should be life. The machine is nothing more than an extension of the human, not the other way round. He arrives thereby to the interesting conclusion that technology, understood rightly as an extension of humanity life, is a biological phenomenon. The starting point needs to be life. To understand nature correctly, therefore, we need to understand how the environment on which an organism depends is structured and organized by that organism itself, according to what is valuable to that organism. If we disregard the network of values, if we try to produce a value-less description of nature, what we end up with will necessarily be a caricature. Living things are centers of perception and organization, each one carrying within itself a project for life. To arrive at a comprehensive view of nature, in so far as this is possible, we need therefore to add up, as it were, all these values together to see nature as a harmonious whole.

There is certainly much more to say about each of these philosophical approaches mentioned briefly so far, but even this quick overview is enough to show how they were instrumental in inspiring and supporting the ecologists who defended a harmonious nature.²⁹ Within such a picture, where do human beings fit in? Do humans fit in at all? The early empirical ecologists rarely referred to the humans dwelling in the areas they were studying. They attended to some sector of the flora or fauna living there, and little else. Eventually, they broadened their interest and began to include tribal or indigenous human cultures as participants within harmonious biotic communities. This was relatively easy because tribal lifestyles, even when involving tools, hunting and agriculture, merged well with other life forms, and everything could be pictured within the general harmonious model of the environment. As opposed to this, recent human lifestyles including massive technological intrusions were, of course, totally different. Should we consider recent humans in this sense part of the environment or not? For some ecologists, even nowadays, current human populations remain clearly distinct from the natural environment. Massive technology is an aberration. It is an unacceptable means of disruption and unjust exploitation of the environment. This position, highlighting the distance, the incongruence, between humans and nature, does not go unnoticed in *Laudato Si'*. The encyclical describes it as the position according to which “men and women and all their interventions on the planet as no more than a threat, jeopardizing the global ecosystem”.³⁰ There are other ecologists, however, who strive to retain humans within their overall account of nature. They accept that technology can be destructive, but they argue that, whatever happens, nature will always readjust things to ensure life. For them, global homeostasis is part of the equation. A kind of invisible hand will ensure that the climax state of a given environment will always be reached, but there is no guarantee that this climax state will include humans. To express this idea, James Lovelock introduced

see Louis Caruana, “Questions concerning Science, Theology and the Environment”, *Gregorianum* 79/1-1998, pp. 149-161.

²⁹ For lack of space, this overview did not refer to the way metaphors regarding harmony, balance, and equilibrium affected empirical research. On this point, see Kim Cuddington, “The ‘Balance of Nature’ Metaphor and Equilibrium in Population Ecology”, *Biology and Philosophy* 16-2001, pp. 463-479.

³⁰ Pope Francis, *Laudato Si'*, n. 60.

the Gaia hypothesis in 1969, claiming that the Earth acts like a superorganism that will eventually counterbalance any excessive human intrusion by an appropriate counterforce to ensure the survival of life on the planet. This position corresponds somewhat to what is expressed in paragraph 60 of *Laudato Si'*, but it is not the same. The encyclical mentions the misguidedness of “those who doggedly uphold the myth of progress and tell us that ecological problems will solve themselves simply with the application of new technology and without any need for ethical considerations or deep change”. The encyclical here does refer to a kind of homeostasis. It holds that technology is beneficial but brings collateral damage; and this collateral damage will then bring more technology. This kind of homeostasis however depends on humans. It is a kind of homeostasis that allegedly functions because of the human technological ingenuity. As opposed to this, the homeostasis endorsed by the Gaia hypothesis supporters is much broader. It allegedly functions because of the nature of the universe itself. Both kinds, however, minimize the urgency of thinking ahead and of evaluating our technological footprint responsibly.

4. The environment as a blind dynamism

We turn our attention now to the opposite trend within the emergence of ecological thinking. Even while discussing the harmony model of the environment, we seem obliged, especially by the use of the idea of homeostasis, to resort to the vocabulary of tension, friction, disturbance and repair, force and counterforce, action and reaction. It should not come as a surprise therefore that, despite the appeal of the harmonious model, a diametrically opposed model is possible as well, a model that is conflictual, random, and blind. The emergence of such a model is precisely what we see during the twentieth century. As indicated previously, Humboldt had used empirical data that he had carefully collected from his explorations in the New World. The same kind of data served Charles Darwin in the opposite way. He proposed natural selection as one of the mechanisms whereby the environment filters off some lifeforms while leaving others to propagate. His followers emphasized the predominance of natural selection and produced a violence-saturated picture of nature in which domination and survival constituted the main engine of change. These Darwinians contributed to ecology a new set of key concepts: competition, aggression, climatic disruption, scarcity, invasion, survival, extinction, and so forth. Described in these terms, the environment becomes a stage on which actors are surrounded by terror, constant danger, and menacing powers: “Nature, red in tooth and claw”.³¹ The peaceful meadow is not peaceful at all. It hides organic discord and deadly warfare. According to the harmonious view described previously, violence and intrusion were a lamentable attribute of human technocrats only. On this view now, the violence and discord constitute the essential characteristic of all nature, at all levels.

With the idea of finality out of the way, this view of ecology aligned itself more and more with the explanations used by physicists rather than with those of biologists. Its protagonists in fact became increasingly interested in measurable, empirical details. The idea of a food-chain became important to map a given environment in terms of relations constituting a kind of vertical hierarchy within that environment. Studies revealed how such chains have a well-defined structure, related to the needs and predatory capabilities of organisms at various levels. The corresponding idea of ecosystem, a direct derivative from the idea of system in physics, was employed to bypass the vague idea of organic wholes and to explore the environment in terms of a network of exchange-relations

³¹ A. Tennyson, “In Memoriam”, Canto LVI, in Alfred Tennyson, *The Works of Alfred Lord Tennyson*. Hertfordshire UK: Wordsworth Editions Ltd., 1994, p. 315.

involving transfer of energy and of chemicals like water, nitrogen, and phosphorus.³² Eventually, the previous idea of an organic community, which was analogous in some way to human social reality, was abandoned also. Instead of a community, or a community of communities, the environment became a collection of atomic configurations relating dynamically with other atomic configurations. On this new account, all constituents of the environment, whether animate or inanimate, ranging from rocks to higher animals, fall under the same explanation. Ecology becomes therefore more like a subdiscipline of physics than of biology. The mathematization of ecology introduced also other terms deriving from economics: energy capture, energy cost, energy budget, energy investment, and so on. Food chains came to be seen as systems of producers and consumers. The community analogy was replaced by the analogy of individualistic liberal economy. Nature became the stage on which individualistic species made their way through thick or thin, as best they could, without any kind of guidance from an alleged overall finality or plan. The idea of an environment having a climax stage, which was a central idea in the harmony view described above, has no role within this model. Even the idea of disturbing the environment therefore loses its importance. The word disturbance has meaning primarily with respect to the idea of normality. If a given environment, as a whole, does not have a way of flourishing that could be called normal or optimal, no change imposed from elsewhere could really be called a disturbance. There is no criterion anymore by which we could decide whether to call a change a disturbance or not.

5. Ecology and human society mirroring each other

It should be clear by now that the trajectories in ecological thinking described in the preceding sections, one harmonious and guided, the other conflictual and blind, are both associated with analogies deriving from human political existence, the first one inspired by communitarian ideals while the second by individualism. As already mentioned, within the explanatory picture of the environment, human existence, with all its social, political, cultural complexity, was at first considered largely irrelevant. Nevertheless, the exchange of metaphors and analogies between the human and the non-human spheres was already happening even before ecology started to include human existence. There was in fact something like two-way conceptual traffic: ideas from ecology triggered new political insights and ideas from politics triggered new ecological insights in return.³³ Expressions like social evolution, survival of the fittest, profit maximization, and competition started being used for both human and non-human environments, thus blurring the boundary between these two camps. As regards explanation, the dynamics of non-human nature and that of human cultural history became parts of one continuous fabric. Ecologists and environmentalists eventually became convinced that the non-human environment is disturbed not only by factors like droughts, climate change, parasites, or earthquakes. It is disturbed also by typically human factors like colonization, market takeovers, terrorism, and social media. Nature and humans are in the same boat. Notice how such inclusion of human reality within the broader picture of nature does not depend on whether we

³² For a comprehensive overview of the development of the idea of ecosystem, see, Frank B. Golley, *A History of the Ecosystem Concept in Ecology: More than the Sum of the Parts*. New Haven: Yale University Press, 1993.

³³ Studying politics in relation to human biology is certainly not just a post-Darwinian phenomenon. Many famous philosophers had developed political views based on biology before Darwin, e.g., Aristotle, Aquinas, Hegel, and others. With the advent of the theory of evolution however, the interest in seeing politics as a biological phenomenon flourished in new ways. For early views, see for instance Herbert Spencer, "The social organism", *Westminster Review* 73-1860, pp. 90-121; Jakob von Uexküll, *Staatsbiologie (Anatomie-Physiologie-Pathologie des Staates)*. Berlin: Gebrüder Paetel, 1920. For a useful overview, see Henry John McCloskey, "The State as an Organism, as a Person, and as an End in Itself", *The Philosophical Review* 72/3-1963, pp. 306-326, doi:10.2307/2183166, accessed 18/12/2020.

adopt one of the above ecological trends or the other. Such inclusion is possible in both models. On the one hand, those who see traces of finality in single organisms see it also in the way species collaborate and see it also in the overall drive of the entire universe, humans included. On the other hand, those who see only conflict and competition between individual organisms see this also between species, and also within human society.

Moreover, in more recent ecological thinking, while the explanatory boundary between human nature and non-human nature disappears, so also is disappearing the explanatory boundary between organism and environment. Recent studies are showing how the organism and its environment are like two sides of the same coin. They are intricately related to each other and dependent on each other to such an extent that we cannot really say that life resides primarily within the organism. We need to accept that life is a phenomenon revealed by both organism and environment taken together. We need to say, for instance, that life is present in both the seedling and the soil, taken together. This holds for all life, from the smallest protozoa to human beings. All life is symbiosis, with inanimate matter included. Ecology has now moved beyond the original simple idea that the environment is a kind of inert container of organisms, a kind of niche with the conditions that permit a given species to flourish. Ecology has moved beyond the simple idea that the environment is a collection of niches or “houses” waiting passively for some species to occupy. The picture scientists have now revealed is much more complex. In the mid-1970s, prominent biologists like Richard Lewontin and Richard Levins started to highlight the need to revise the kind of Darwinism “that represents the environment as a preexistent element of nature formed by autonomous forces, as a kind of theatrical stage on which the organisms play out their lives”.³⁴ They realized that assuming an asymmetrical relation between a living thing and its environment is like seeing half of the picture only. In reality, the organism and its environment affect each other. There is interaction in both directions. The environment influences the organism, and the organism influences the environment. Just as the predator population affects the prey population and vice versa, so also the soil affects the seeds, and the seeds affect the soil. Humans affect the biosphere, and the biosphere affects humans. Organisms and the environment form one evolving whole.³⁵

6. The specific contribution of *Laudato Si'*

To recapitulate therefore: we are faced with two possible pictures, both of which seem reasonably plausible. On the one hand, we could proceed with the assumption that life is characterized by an intrinsic order that manifests itself not only at the level of single organisms but also at higher levels, including even the entire biosphere itself. On this view, in any given environment, the various organic forces and counterforces are characterized more by collaboration than by mutual destruction, they balance each other out, and they eventually determine an overall, sustainable optimal state. This holds, or should hold, for all of nature, humans included. On the other hand, we could proceed with the contrary assumption that life is nothing more than the unpredictable result of piecemeal struggles

³⁴ Richard Lewontin and Richard Levins, “Organism and environment”, *Capitalism Nature Socialism* 8/2-1997, p. 96. doi: 10.1080/10455759709358737.

³⁵ The co-determination happening between the seed and the soil is explained clearly in Richard Levins and Richard Lewontin, “Dialectics and Reductionism in Ecology”, *Synthese* 43-1980, p. 49: “the seedling is the ‘environment’ of the soil in that the soil undergoes lasting evolutionary changes of great magnitude as a direct consequence of the activity of the plants growing in it, and in turn feeds back on the conditions of existence of the organisms.” On this point, see also Trevor Pearce, “The origins and development of the idea of organism-environment interaction,” in *Entangled Life: Organism and Environment in the Biological and Social Sciences*, edited by Gillina Barker, Eric Desjardins and Trevor Pearce. Dordrecht: Springer, 2014, pp. 13-32, doi 10.1007/978-94-007-7067-6 2.

for survival, involving instances of random disturbances of momentary equilibrium situations, and natural elimination of unsustainable organisms, with no overall guide, no finality, and no clear sense of flourishing or progress. Given these possible pictures of ecology, what is the role of humans? The two trends within current ecological thinking work with different assumptions but both recognize that climate, terrain, flora, fauna, human social reality, culture, and politics are all interconnected. Human ecology affects non-human ecology and vice versa. The key concepts we use to explain one explain the other also.

This constitutes the background for *Laudato Si'*. We are now in a position to reply to the original question that we set ourselves at the start of this paper. What is the encyclical's original contribution in this specific area? The answer can be presented in three main points.

First, we need to refer to the important adjective "integral". This word derives from the Latin *tangere* and literally means untouched, undivided, or complete. When applied to ecology, it refers to the kind of ecology that leaves nothing out, ecology as it should be.³⁶ The previous paragraphs show that *Laudato Si'* is not the first study that highlights the fact that non-human ecology is inseparable from human ecology with all its social, cultural, and political dimensions. During several decades before the encyclical, some philosophers and ecologists were highlighting the importance of including human reality within the broader context of life on the planet. In fact, as we saw, these studies often used the same keywords and expressions for describing non-human reality as for human reality. The idea of an integral ecology therefore was indeed already present. Pope Francis however added a new emphasis, especially as regards the kinds of causal connections that characterize life on the planet. Before *Laudato Si'*, many scientists and environmentalists had shown how behind major ecological imbalances there are sometimes human causes, and that, vice-versa, ecological imbalances sometimes cause human suffering. The Pope agreed. He not only agreed however with this causal interdependence.³⁷ He went further by uncovering causal connections in areas where few others had dared to explore. He explained how degradation can be seriously contagious and can therefore jump from one level to another. The environment is not immune to the degradation we see in human society, and, in the opposite sense, human society is not immune to environmental degradation. We need to consider also personal or moral degradation, which refers to egoism, indifference to the suffering of others, lack of foresight and responsibility regarding future generations, indifference to the unnecessary suffering of animals, and similar negative attitudes within the human individual. Human society, culture, and politics are not immune to personal degradation, and the individual person is not immune to social, cultural, and political degradation. The ecology defended in this encyclical, therefore, is integral in a more robust sense than had been envisaged before. It is integral because it includes all these causal connections, down to personal choices embedded within the individual's heart.

The second area one can mention regarding the originality of *Laudato Si'* concerns the link that it establishes between ecological concerns and Christian faith. Christians should support the kind of ecology that is integral not only because science is unveiling the holistic richness of nature. They

³⁶ It is interesting to note that previous significant uses of "integral" in this sense include Gustavo Gutierrez's idea of integral liberation in chapter 9 of his *Teología de la Liberación. Perspectivas* (Gustavo Gutierrez, *Teología de la Liberación. Perspectivas*. Lima: CEP, 1971), and Jacques Maritain's idea of integral humanism in his *Humanisme intégral* (Jacques Maritain, *Humanisme intégral: problèmes temporels et spirituels d'une nouvelle chrétienté*. Paris: Aubier - Éditions Montaigne, 1936).

³⁷ He clearly disagrees with those who deny the evidence and insist that there are no human causes of global warming and its consequences. He also disagrees with those who seek to dedramatize the situation by claiming that the evidence is unclear and that the current problems are temporary because they are merely part of a recurring natural cycle.

should support it also because the oneness of nature and the mandate to care for creation constitute an essential part of the Biblical message. So, the encyclical did not merely reiterate that the biosphere includes the human phenomenon. It did not just restate that ecology is intimately connected with human social and political realities. It did not merely highlight again the dangers of a blinkered, utilitarian, mechanistic worldview. It went further. It produced a comprehensive and consistent picture in which the previous achievements regarding ecology gain added support by being seen within the broader horizon of religious faith. It produced a unified declaration in which the scientific, social, cultural, and personal dimensions of ecology can be seen together within the framework of creation's divine origin and destiny. Within this picture, degradation, conflict, and individualism are not just aberrations, miscalculations, or simple errors. They are dimensions of sin. Flourishing, collaboration, and communion are dimensions of grace. By highlighting these links, these resonances, between the material and the spiritual, the encyclical retrieves and enhances some fundamental insights that are already briefly sketched in the Old Testament, for instance the following text from the Book of the Prophet Hosea, which is surprisingly missing within *Laudato Si'* even though it conveys this unified message brilliantly. "Swearing, lying, and murder, and stealing and adultery break out; bloodshed follows bloodshed. Therefore the land mourns, and all who live in it languish; together with the wild animals and the birds of the air, even the fish of the sea are perishing."³⁸

Another area of originality concerns the encyclical's balanced view of anthropocentrism. These last decades, we have seen various heated philosophical debates regarding anthropocentrism, many of which arose as a direct result of starting to see human reality as an important variable for ecological understanding in all its complexity. *Laudato Si'* avoids extreme positions and points towards a responsible understanding of the role of human beings. On the one hand, it refutes positions that adopt an arrogant disregard for the state of the biosphere and that adopt any form of shortsighted exploitation. On the other hand, it refutes also the opposite positions that disregard or devalue humanity in favor of biocentrism, of cosmo-centrism, and of no centrism at all. The encyclical defends a realistic position that acknowledges the specific gifts with which the Creator has endowed *Homo sapiens*. Hence, it does not consider humans a kind of jarring, cosmic mistake. It does not take human rationality as a kind of disease that makes this species disrupt the ecosystems in which it multiplies without control. It does not see human social and cultural refinement as a kind of self-destructive, life-asphyxiating excrescence on the planet. On the contrary, the encyclical adopts a balanced approach. Without neglecting the seriousness of ecological sin, it outlines and supports a scientifically informed role for humans within creation, a role that is appreciative, far-sighted, responsible, supporting, humble, and joyful. The overall approach here is founded on Christian faith, and, as such, it cannot but support the first trend mentioned above. In other words, it is in line with the idea that the environment, understood in the broadest sense, is a harmonious reality. The contrary forces we see, the contingencies, random mutations, struggles for survival, even predation itself, are not senseless. They are all part of the handwork of an intelligent and loving Creator. This is a theologically inspired view. Those who limit themselves to science and philosophy will point out that the discussions regarding finality in nature have not yet reached any definite conclusion. Nevertheless, current developments in these disciplines seem in favour of the idea that finality is an emergent property, in the sense that, although random changes and statistical averaging may

³⁸ Hosea 4:2-3 (NRSVCE). Notice the conjunction "therefore" at the beginning of verse 3, highlighting the fact that human immoral living and environmental degradation are not just correlated phenomena but that the former is the cause of the latter.

predominate at micro-levels, some form of finality or goal directionality starts to become increasingly relevant as we consider higher levels of complexity. It starts to become relevant especially when we consider animals and obviously humans. Since humans are part of the environment, human intentionality, deliberation, and responsibility are an essential part of the environment as well. In this sense, therefore, it may not be difficult to bridge the gap between the faith-based approach of *Laudato Si'* and views that are founded exclusively on science and philosophy.

The three areas of the encyclical's originality mentioned above are only a part of its overall message. There are certainly many more aspects to be appreciated. This paper has focused on one issue only, with the hope that the encyclical's message regarding life and environment comes across in clearer light now that the reader can see the encyclical not in isolation but in continuity with other ideas, now that the reader can see it as part of the long struggle that humanity has engaged in since earliest times, the struggle to understand itself and its surroundings correctly, and to behave and flourish within it accordingly.