

CATHOLIC ESCHATOLOGY AND EVOLUTIONISM

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Abstract

Evolutionism” is a scientific theory rooted in Darwin’s attempt to explain the origins and diversification of species. “Eschatology”, instead refers to a systematic and theological reflection on the meaning of history, “ultimate meaning and end of all things”. Are the two related? And precisely can Catholic eschatology make sense to a beholder of the evolutionist theory? How does one explain Catholic eschatology to an evolutionist?

BACKGROUND: TWO SPECIFIC OCCASIONS

The idea of writing this paper developed from two interrelated demands, one general and the other particular. The first evolved from the observation of a learned and pastorally involved senior missionary in Hong Kong to my endeavor of awareness-building regarding the necessity of promoting interreligious dialogue. He commented on how Western scientific mentality affects the knowledge, thinking, behaviors and religious choices of those formed in it. He then added that dialogue should not be restricted to “religions”. It should instead give particular attention to the epistemic background that pops up in the minds of most modern interlocutors, shape their consciousness and validate their convictions. In inquiring further, I gathered that his observation was hinting at the field of natural sciences and the amalgam of explanations that harbor the choices, the arguments and the religious indifferentism of agnostics, atheists, naturalists, scientologists, etc. The second and determinative incentive came as a concrete proposal to present concepts related to Catholic eschatology to a mind, to an environment or a community that beholds evolutionism for hermeneutic framework. Put in simple words, the question I will at-

tempt to answer is “how to explain Catholic eschatology to one who holds evolutionary theory as a frame of reference?”

I will attempt to address this preoccupation and its appended inquiries through an exploration of the confines of each of the two concepts, highlighting the importance and challenges they bear for each other. This will be done with the expectation of fostering a cross-fertilization of the worldviews evolutionism and Catholic eschatology represent. Before going any further, an exploration of evolutionism is needed.

THE EVOLUTIONIST WORLD VIEW: FROM DARWIN TO EVOLUTIONISM

The Encyclopedia Britannica defines evolution in general as “a theory in biology postulating that the various types of plants, animals, and other living things on Earth have their origin in other preexisting types and that the distinguishable differences are due to modifications in successive generations”.¹ Detailed exploration of the definition links the origin of the theory to Darwin. Moreover, those who highlight his contribution don’t hesitate to call it “Darwinism”, implying the determinative contribution his explanation brought to the shaping of the theory. But who was Darwin and what and why has his contribution been so crucial to evolutionism?

Charles Darwin (1809-1882) was an English naturalist imbued by a quest for knowing. Previous to immersing himself in the field of biology and nature, he had been successively a successful student of medicine and theology. During this formative period, Darwin familiarized himself with the thoughts of prominent theoreticians such as Hume and Adam Smith, William Paley and others. But what held a decisive impact on his inquiring mind was his five year geological field trip in South America (1831-36) in the company of botanist Adam Sedgwick which was recounted in his work: “*The Voyage of the Beagle*”.² During that voyage, Darwin became aware of the variety of plants and ecosystems. If he had been content with the initial task assigned to botanists, he would have restricted himself to concise descriptions and accurate cataloguing of the plants. But Darwin went a step further inquiring the reasons which account for

those diversifications. As a naturalist, he intended to offer a scientific explanation for the arrangements he had observed in nature. He proposed that the patterns were variations evolving from some common ancestors. He further hypothesized the existence of a great “Tree of life”, from which all species might have evolved, leading to some common ancestry. In this early stage he was unable to explain the mechanisms or ingredients that cause the modifications and how, when and why they occurred. This became a concern of his research until 1859 when he was finally able to present a substantial essay outlining his explanations.

Noticeably, the formulation included some ideas gleaned from other researchers in the field. Previous to Darwin’s theories, there were other tentative explications of the origins for instance, James Hutton’s *Theory of the Earth* (1795) and Charles Lyell’s *Principles of Geology* (1830-33).³ The authors were attempting to offer an alternative explanation to that provided by the biblical genesis stories (Gn1-2). During his preparation as an Anglican priest, Darwin was fascinated by the Natural Theology taught by William Paley. Paley exalted the coherence and coordination found within creation, the “intelligent” manner in which the constitutive parts of a creature are fashioned to perform a certain task. But what became crucial to Darwin’s theory was an insight from Malthus which he read in 1848. It was after encountering Malthus’ *Essays in the Principles of Population* that Darwin sharpened his theory. Malthus, a theoretician in politics of economy and demography, had stated that famine and diseases were two crucial natural agents in balancing demography. From this reading, Darwin found an insight to justify the incentives for the variations in the patterns noted. He alluded to a “natural selection” that enabled the survival of the strong and the disappearance of the weak. Natural selection was the agent shaping the great tree of life. The early intuitions from *The Voyage of the Beagle* were finally explained in 1859 in *The Origins of Species*.

Darwin later expanded his theory, relating it to various ramifications or species within the great tree of life.⁴ The final application of the theory to the human species explained how humans evolved from primates.⁵ By this time, Darwin could claim to have found an interpretative system explaining the origin and variations of species in the biological realm. He showed that natural life unfolds primarily through the process

of natural selection ruled by the principle of the survival of the fittest and the disappearance of the weakest. Moreover, he specified that natural selection operated blindly, without plan or goal. Unlike previous explanations of origins, Darwin's biological evolution theory did not need to be directed by a metaphysical agent. He defined evolution "as a random and mindless process that operates independently of any human or divine agency, and without recourse to inherent, emergent tendencies".⁶ Meanwhile, the fame of *The Origin of the Species* kept expanding. It was highly in demand in 1872 and it was on its sixth and last edition in 1872. Its influence on the development of scientific interpretation in the Western world was to be lasting.

FROM DARWINISM TO SCALE OF EVOLUTIONIST THEORIES

Though biology constituted the backdrop of Darwin's theory of evolution, the reception and application of evolutionism however outgrew that context. In fact, it influenced the disciplines of anthropology, archeology, and paleontology. Darwin's concern for an explanation of the origin and diversification in the biological world has gone through various metamorphoses. Traces of Darwinism can be delineated in scales of explanation of origin and mutation in the physical, biological and cosmological fields giving rise to new types of investigations.⁷ For instance, in the field of biology, new discoveries in genetics and molecular biology led to an updating of Darwinian explanations. Moreover, in the field of astrophysics, evolutionary type approaches are being applied to the big-bang in the form of *freeze or fry theories*.⁸

Traces of Darwinism can be found in many other current scientific projects and philosophies. Dr Spencer Well's genographic project and the H+, also known as transhumanism are two examples. Genography is a scientific approach using advanced DNA analysis to retrace the origins, the mutations of human populations on the Earth. The analysis of DNA samples collected from indigenous communities shows the different migration itinerary and the mutation of humans through millions of years. The findings call in question the socio political importance given to

notions such as races and ethnicity. At the end of the day, humans are to discover that they share a common ancestry whose genes diversified in response to the adaptability requested by the surrounding environments in which their ancestors evolved in.⁹

While genography uses cutting edge technology to explain the origins and mutations of the humans as they spread around the Planet, H+ (transhumanism) develops the most efficient technology to enable humanity to hasten its improvement.¹⁰ The choice is a practical consequence of the H+ assessment of the human person as “unfinished” but “perfectible”?. Max More, Anders Sandberg, Natasha Vita-More, James Hughes and Nick Bostrom, Kathryn Aegis, Ralph Merkle, and other contributors define transhumanism as “a way of thinking about the future that is based on the premise that the human species in its current form does not represent the end of our development but rather a comparatively early phase”. With this awareness, the current develops “philosophies of life that seek confirmation and acceleration of intelligent life beyond its currently human forms and limitations’. As Nick Bostrom points out, transhumanists consider human nature as “a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways” and that “current humanity need not be the endpoint of evolution”.¹¹ Hence, they strive for the most efficient technology capable of enhancing human perfectibility.¹²

One might be labeled with indiscriminative inclusion by inferring to an inner link between the names and positions here above mentioned. And yet, there is a notable connection featuring the ramification of the theory of evolutionism as it is applied, realized and articulated in different scientific disciplines. Evolutionism has been a source of inspiration for thinkers of diverse trends, religious believers and unbelievers alike. The list of sympathizers might include atheistic and agnostic evolutionists, materialist and naturalist evolutionists, humanist and theist evolutionist, etc. In its metamorphosis, evolutionism has generated a wide range of interests, from astronomy to chemistry, biology, religion, theology, etc.¹³

The ramification of interests early mentioned displays some similarities. First, the explanations offered are not static but continuously evolving in accordance to insights of new findings. There is never a “last word”. Second, they are faithful and committed to the inner ruling of scientific methods. In fact, researchers in these fields strive to abide to a realistic

epistemology of science. They express things, facts as they believe to have occurred, phenomena as they are taking place and things as they will happen. All these explanations are done not on the basis of fantasy but on the ground of scientific laws and theories. Last, the epistemic universe of the theories needs no direct reference to metaphysical intervention or cause. Because of this, the implications for religion – as illustrated in the debates that went along the metamorphosis of evolutionism into a philosophy¹⁴ – can still be delineated. Evolutionism was often seen as “the triumph of science over religion, as the dissolution of natural theology by the law of nature [...], as a shift from creationist to a positivist episteme [...], and as a legitimating variety of political viewpoints, both the ideological right and left”.¹⁵ In the following section we will inquire on whether it can also be a basis for eschatology and especially for Catholic eschatology.

THE ESCHATOLOGICAL WORLDVIEW

While “evolutionism” is a scientific theory rooted in Darwin’s attempt to explain the origins and diversification of species, “eschatology”, instead refers to a systematic and theological reflection on the meaning of history. A discourse with eschatological content will naturally ponder questions such as “what occurs after death?” “Does death have the last word?” “Is there life after this existence?” “If there is, then what kind of existence is it?” “As humans, living as individuals and as social groups and being aware of the reality of death, what can we hope for ultimately? Is the earth eternal? Is “doomsday” a myth, or is there any ground to take it seriously? Where is humanity, where is the cosmos heading to? Is it towards eternity or towards extinction? These are questions pertaining to the eschatological discourse. As it might be observed, the preoccupations are predominantly addressed by religions (including traditional and even atheistic ones included).¹⁶ This might suggest that eschatological preoccupation is inscribed in the philosophical, existential, religious consciousness of the human person. As Simon Tugwell argues, “the question of what happens after death has, and always will have, a very considerable significance as a way of focusing our fears and our hopes to interpret life

and death in this world”.¹⁷ It is a debt contracted by our inquiring minds that helps us get a sense of orientation (space and time), and shape the routine of the daily conduct (morality). Eschatological curiosity manifests our quest for responsibility, our aspirations for an explanation that transcends the present moment and extends the value of our existence into eternity. By raising eschatological questions, the human mind ponders other meanings and dimensions hidden in and beyond history, resists the thought of surrendering the last word to death, and refuses to live as if death would bring the encounter of what has been collected in the human individual and collective consciousness to a total zero. Moreover, the eschatological quest and its related developments vary and contribute to cultural and religious worldviews.¹⁸

CATHOLIC ESCHATOLOGY

The Catholic tradition has an important section of theology which addresses issues of life and death for each of us personally and the final consummation of the cosmos of which we are a part. In popular language, these issues are known and dealt with as “*last things*” – death, judgment, heaven and hell. They summarize steps that Catholics believe unfold after death. Yet, “*four last things*” remain a simplistic way of speaking. It does not, for instance, include purgatory which is still yet part of Catholic eschatology. That is why, to be more concise and clear, the doctrine distinguishes between “individual or particular eschatology”¹⁹ and “collective or universal eschatology”.²⁰ The former focuses on the unfolding of the process on an individual basis and the latter instead, on an all inclusive and universalistic ground. “Universal or cosmic eschatology”, refers to a global, collective or cosmic end. It includes reflections on topics such as the end of the world, the resurrection of the body, general judgment, final consummation of all things, etc.²¹

INDIVIDUAL ESCHATOLOGY

The question addressed in individual eschatology is with regard

to what happens to the individual at death and onward? The reflection shows how last things apply to individual cases. Elements dealt with are death, particular judgment, heaven, purgatory and hell.

With regard to death, the first element of individual eschatology which Catholic doctrine speaks of is the separation of soul and body. Death is a consequence and punishment of original sin.²² It also marks the end of a period of trial on earth, a moment during which through personal choices, one prepares his final destiny.²³ The Catholic liturgy reiterates this portrayal of death as the conclusion of the pilgrimage on earth in many ways. The Prefaces for Christian Death in the Liturgies remind believers that life is only changed, not ended, death opens to a new birth. For Karl Rahner, death does not end life but only necessitates a change in existence. He writes:

“Death does not simply withdraw a person from the world and make him a-cosmic; rather it transposes him into a new and more comprehensive relationships to the world, freedom from the limitation of the a single point in space and time, characteristic of his earthly existence”.²⁴

Finally, death opens up to a succession of interconnected eschatological elements.

Based on the interpretation of several New Testament passages,²⁵ the Church’s doctrine holds that the soul faces judgment at death. The individual or particular judgment of the soul concludes with an assignment to heaven, hell, or purgatory.²⁶ These three categories are not easy to describe. Any attempt risks falling into anthropomorphic projections. Nonetheless, heaven refers to the Beatific Vision, the possibility of seeing God face to face, standing in his abode with the company of the saints and angels. Thought of in visionary terms, it is a place abounding of joy and happiness, a state of eternal possession of God.

Hell is the opposite of heaven. It refers to the place or state of those who, because of sin, because of their malfeasance and unrepentant choices are eternally excluded from the Beatific Vision. It is also referred to as a place or state of eternal punishment. Besides heaven and hell as places or states of retribution, the Catholic doctrine on individual

eschatology has a further specificity. It speaks of a purgatory, not as a third option but as a transitional state of unspecified duration. At this stage, those who die imperfect and yet were willing to repent are offered an extra time with a course of punitive purification so that they might qualify to enter into heaven.

The last of the seven points of the 1979 Letter from the Sacred Congregation for the Doctrine of the Faith with regards to matters pertaining to eschatology explains the Church's understanding of hell and purgatory as follows:

The church believes in the beatitude of the righteous and the eternal punishment of sinners, 'who will be deprived of the vision of God, and this punishment will have repercussions on the whole being of sinners'. There can be a purification, in the case of elect, before they come to the vision of God, which is quite distinct from the punishment of the damned. "This is what the church means when she speaks of Hell and Purgatory".²⁷

Universal and Cosmic Eschatology

Universal, collective and cosmic eschatology looks at the question of the end with the consideration of the fact that human existence is not lived in isolation. We are a community whose existence is enabled other living creatures. Our human existence is also enabled by the living environment or cosmos in continuous expansion, exposed and submitted to physical laws. Given those predicaments, it is not illusory to imagine an end that consumes all. The subtopics addressed in universal eschatology relate to the subsequent events to the end of the world, the end of the cosmos, general resurrection for a general and final judgment and final consummation. Again, as it is the case for individual eschatology, scriptures and tradition constitute the ground for the doctrine.²⁸

The synoptic gospels attest that Jesus clearly spoke of the end of the world.²⁹ Early Christians associated it with the second coming of the Lord Jesus Christ – *parousia*, *the Day of the Lord*, *the Day of Jesus*

Christ – when, as an article of the creed says, “He will come to judge the living and the dead”. The misunderstanding regarding the timing of this second coming constituted such a preoccupation among some early Christians that it became the main concern St. Paul addressed in the first letter ever written to a Christian community.³⁰

According to Catholic doctrine, at the *parousia*,³¹ all the dead (good and bad) will rise. There will be a general and final judgment with the Son of God himself sitting as judge.³²

Besides the final destiny of the human race at final judgment, the finality of the whole creation is described in terms of “final consummation of all things in Christ”. The foundational biblical passages for this idea include the physical universe as part of the general consummation.³³ Moreover, they speak of consummation as a gradual process marked by a series of destructions and reconstructions, but still aimed at a final end, namely, a restoration to a glorious and divine kingdom which will know no end.

The hope and openness of this eschatological view gives space for an inclusive dialogue between certain views of evolutionism and Christian eschatology. It is a dialogue held with the understanding that despite all, in the end, “the God in whom we live, move and have our being”³⁴ “may be all in all”.³⁵ No more death, no more suffering, but only love and communion in the beatific vision.³⁶ This is the sketchy picture of traditional Catholic eschatology. Aware of the worldviews shaped by contemporary scientific minds, one might wonder on the meaning it makes to modern scientific people.

AT THE CROSSROADS OF CATHOLIC ESCHATOLOGY AND EVOLUTIONISM

Besides these aspects of so called “traditional eschatology, Peter Phan points to another area of eschatology in need of investigation”. Accordingly, further inquiry should be regarding “possible mutual illumination between contemporary scientific theories of the big bang and the big crunch, on the one hand, and the Christian imagination of the beginning and end of time, on the other”.³⁷ This is a must if we are to overcome the

failures that Russell believes has discredited theology. Theologians were unable to make eschatology intelligible to believers and non-believers alike. One main reason is the obsolete formulation in which the doctrine is presented without taking into account the generational gaps between doctrine and audience. “The doctrine of eschatology”, is presented in antiquarian form” unable hence to respond to the awareness of the time. He writes: “In an age which takes for granted that our world is a tiny planet lost in the immensity of an unfeeling universe and biological life is the unintended product of blind, evolutionary chance, we as theologians in service of the church have failed”.³⁸

This being the case, how can Catholic eschatology make sense to the contemporary quest of meaning? Catholic doctrine of last things evolves from a faith sustained reflection on the reality of death. Its power relies on faith and claims on the persuasion of a hope in the promises of faith.³⁹ The arguments sustaining the explanation use tools in the reach of the Catholic religious framework. Hence, while dealing with either individual or cosmic eschatology, the arguments appeal to the authority of the Word of God, that of Jesus in whom there is no deceit, and to the authoritative explanation of the Magisterium of the Church. Because of this hope, Christian eschatology becomes that “kindly light that guides us through a dark world to our eternal destiny”.⁴⁰

The Methodological Challenge

The initial impression and awareness emanating from the concise exploration above is about the range and complexities of the two concepts under investigation. On a wide scale, the two variables of a talk involving evolutionism and eschatology are science and religion.⁴¹ Evolutionism and eschatology are concepts with long, detailed and particular interpretations.⁴² Moreover, the complication emanates and is sustained by the fact that there is not only one way of assessing that relation. With evolution theory as a starting point, eschatological issues—that is, reflection pertaining to death and what is expected to occur in the after life—can be ignored, neglected or denied on the ground of a lack of a scientific proof of their existence or tools to investigate them. On the other hand, Christian thinkers have adopted different approaches vis-a-vis the ranges

of scientific attitudes to themes related to evolutionism. This is understandable mainly for reasons Kenneth R. Miller offers. He notes that “evolutionism remains a point of concern and controversy because it deals with the greatest of all mysteries, our own origins, and our human place in nature”.⁴³

The task invoked by Peter Phan and Russell’s observation is complex indeed as it could be perceived from the previous schematic descriptions of evolutionism and eschatology. They seem to be developing two opposite dynamics. The first is associated with an investigation and explanation of “origins”, “mutations” and diversifications of species. The second instead is concerned with the “end”. If this is true, then a further exploration of a dialogue between the two fields raises a fundamental question: how and where do the two dynamics meet? From the perspective of evolutionism there is a need to establish whether evolutionism holds any concern for last things. Similarly, the investigation of the perspective of the Catholic tradition needs to evaluate the importance given to questions on the origin of things.

An Evolutionist Individual Eschatology?

In the schematic presentation of evolutionism made above, no element of the last things has been stressed directly. Death, judgment, heaven and hell did not receive the same treatment and attention in Darwin and the ramifications of evolutionism as it did in the Catholic eschatology. This might seem to confirm the initial observation. Moreover, there are explanations for this apparent lack of interest, all related to methodological constraints. First, it might display an aspiration for consistency with the original quest of Darwin and the different ramifications evolutionism has taken. Second, the scientific methods and tools of evolutionism do not enable venturing too much into that field. As a methodological rule, the explanation or truth that a scientific approach expects from the world must be phenomenal, in other words, one obtained through observation, test, replications and verification. Clearly, the claims of the scientific methods diminish the chance of access to the elements of Catholic eschatology. The origin and end of one’s life is beyond the reach of the scientific method. No one can watch the moment of his/her birth

and death as an observer. Hence the scientific sayings on origin and death can only be a discourse on the “other”. As a talk which involves the speaker, it needs to proceed from a different methodological approach: from the witness of the others, which to be accepted involve calls upon the factor of credibility, trust.

Because of the methods chosen, the scientific explications of death can only be an objective description of the experience of “the other”. It is an objectification of the experience of the other, including a verification of patterns related to the state of death which can be corroborated by the absence of vital signs. Clinically speaking, death can be declared “when life machines monitoring the brain, heart and lungs, all register zero activity”.⁴⁴ A clinical description of death can concisely describe the process of a decaying body. This would still be short of the explanation motivated by an eschatological inquiry. A similar observation can be made of Darwin’s explanation of death as an illustration of the implied price for the survival of the fittest.⁴⁵ Even though these discourses are related to death, they will fall short of answering the serious questions the human mind raises regarding death and which are being addressed in eschatology. This being the case with death – the first element which yet is still at the margins of observable phenomenon, how hard would it be for the other elements of Catholic eschatology?

With the awareness of the methodological constraints adopted by evolutionists, the further eschatological inquiries can be answered with varying nuance. Evolutionists do not seem to have a direct access to elements pertaining to eschatology. The confines of their scientific approach offer no basis to refute or deny the claims made through unshared methods. However, the lack of direct access does not imply a complete eradication of eschatological concern. In fact, there is an implicit concern for individual eschatology among evolutionists. Unfortunately, the development of their research remain in most cases, inconclusive. They rank between agnostics and practical atheists. For the former, death and what follows is too complex, awesome and profound to be fully intelligible to the human mind.⁴⁶ For the latter, ontological naturalists for instance, the question is of less importance.⁴⁷ It is also the case for “scientists and philosophers who” as Ilia Delio notes, “maintain that Darwinian ideas

can explain in an exhaustively naturalist manner all living phenomena, including human thought, morality, and spirituality”.⁴⁸ They acknowledge death as a fact and accept it with resignation. As Provine says: “When you’re dead, dead, dead, you are gone, gone, gone”.⁴⁹ Such a position is the outcome of the conviction that there is no spirit, no soul; that nothing survives after death. Yet this stance of the naturalists provides little comfort to ones yearning to transcend the physical by the hope for something beyond this earthly life.

Another evolutionist approach to individual eschatological inquiry is practical. Moving away from denial and mere skepticism, the approach consists in engaging the scientific method towards inquiring on the possibility of life after death. The move consists of studying and investigating cases of near death experiences to verify the foundation for a hope for immortality.⁵⁰ The exquisite study of the human brain and the nervous system aims at finding a physiological ground for the sense for eternity and transcendence. Although this research remains inconclusive, it nevertheless bears witness to a growing tendency and conviction: an interest of scientific minded people in topics related to eschatology. Moreover, the pragmatic solutions of transhumanists can be attested by their resolve to engage and engineer technologies aimed at solving problems supposed to be of eschatological nature. All in all, these enterprises offer an orientation that dialogue between science and religion needs be an engagement of the methodology used by each field.

Evolutionism and Cosmic Eschatology

After looking at individual eschatology, it is proper to ask what evolutionists understand cosmic or universal eschatology to be. Questions raised from a catholic perspective are: the end of the world, resurrection of the bodies, general judgment, final consummation, etc.

Again as in the previous case, the first noticeable difficulty is with regard to methods and language. The Catholic formulations cannot simply be transferred into the evolutionist epistemic world. In the same way, the terminology used in scientific evolutionism, even those speaking of future, is not exactly the same as the *last things discourse* of Catholic eschatology. But there are futurist scenarios of “ends” in cosmology, bi-

ology and physics with well elaborated theories worthy being called “scientific eschatology”. The “freeze” or “fry” and “physical eschatology” Dyson and Tipler have introduced is just one example. The picture is depicted as follows:

“Thus cosmology depicts a universe vastly bigger than we ever imagined before this century, literally billions of light-year in just the visible universe alone! Moreover, the universe *as whole* is expanding in time [...] Finally, cosmology tells something amazing about the future: it’s HUGE! The universe may continue to exist for ever (if the universe is open), or for at least 100billions years (if the universe is closed). In either case, life will surely cease to exist on earth at the solar supernova in the “near” future (5billions years), and if constrained by the speed of light as an upper limit on migration to and communication between the stars, will undergo a diaspora of unthinkable dimensions. Moreover, the universe will darken as stars like ours turn into dwarf stars, and in the far future, all complex states of matter decay into elementary particles. The far, far future is, apparently, either “freeze” (open universe expanding and cooling for ever) or “fry” (closed universe collapsing to a final black hole of infinite temperatures)”.⁵¹

The universe of ecological evolutionism and astrophysics foster a language with teleological content. This can be captured in the description Robert Crawford gives of the cosmological answer to the question “what form life after the death of the Earth might take if there is one?” Crawford’s answer is positive even though it has to be held that the end to appear in billions of years will be bleak. “With the explosion of many stars there will be a vast number of them and soon after this our universe will die. What begun with the Big Bang will as, T.S. Eliot said, end with a whimper”.⁵²

Other ideas alluding to the possibility of the death of the cosmic are entropy, black holes, the death of the sun, anti-gravity, etc.⁵² All these

point out that even though it might take billions of years, the system is not eternal. “The universe is going to die by slow freezing rather than heat”.⁵⁴ Unlike the Catholic eschatology – which refuses to give a concise calendar of the eschatological events,⁵⁵ evolutionists are good with numbers. They calculate in terms of billions of years – a period hard to imagine for most people. Nonetheless, the picture depicted is still disturbing. Despite the ray of hope offered by Frank Tipler and Freeman Dyson’s physical eschatology – the end envisaged is still annihilation, a final death that does not allow inquiring questioning on “what may be next?”

Scientific minds are wrestling with those possibilities in their own ways. Those who consider that our planet might be one of the first to face extinction have been looking for possibility of life elsewhere. The space missions of NASA might have an eschatological motive attached to them! The same could be said with regard to cloning which Robert Crawford looks at as capable of offering benefits similar to those entitled to resurrection. He writes:

“Cloning has contributed to the discussion of life after death. It might be one way of conferring a kind of serial immortality on those who die and is dependent on the view that genetic identity is equivalent to personal identity. But a clone created with resurrection in mind would be of value for its conformity with his progenitor, that is, identity in personality, behavior, talents and so on.”⁵⁶

Frank Tipler and Freeman Dyson developed “physical eschatology”, a scientific eschatology enjoying a growing consensus regarding the necessity of dialogue between scientists and theologians. Their positions are based on the freeze or fry theory of cosmic end and literally hold that life is eternal. Dyson, a proponent of the open universe thesis argues that life can continue indefinitely into the far future even though temperature approaches absolute zero and the structures we know of – as galaxies, stars, planets, even atoms – eventually decay to fundamental particles. As for Tipler, the argument is that “the Universe must be such that intelligent life will continue to exist forever”. They compare life to a sophisticated computer capable of processing a big amount of informa-

tion and keeping traces of it so much that the system can recreate itself.⁵⁷ Tipler is convinced that something important will survive the big crunch: “when atoms disappear human bodies will disappear, but programs capable of passing the Turing test need not disappear”. And approaching this from a different angle, Dyson states: “whether the details of my calculations turn out to be correct or not, there are good scientific reasons for taking seriously the possibility that life and intelligence can succeed in molding this universe of ours to their own purposes. Twentieth-century science, when it looks to the future, provides a solid foundation for a philosophy of hope”.⁵⁸

On the basis of the examples here cited, similar observations can be made of evolutionism and universal or collective eschatology as those made with individual eschatology. In other words, there is an implied concern of addressing matters of eschatological nature using methods that pertain to the scientific field. The answers offered however fail to notice the immediacy of the eschatological angst. Talk of last things are primarily personal concerns. For example, when physical eschatology promises a self remaking of life after the big crunch, the personal eschatological question is how is the explanation important for me and people known to me? The theories are mitigated responses that unveil a gap between the nature of the eschatological angst and the responses that science can offer.

IS THERE A WAY OUT OF THIS IMPASSE?

The possibility of a dialogue rises from the closest allusions to futuristic scenarios and mentions of “ends” in cosmology, biology and physics or again the practical ways of addressing awareness of change and mutation in humans and in the universe in reference for instance to the technologies developed by transhumanists.

In the area of cosmology, for instance, the meeting point can be found in a pattern highlighted by Russell in terms of “Cosmic Christ” and “Standard Bleak Scientific Picture”,⁵⁹ a picture with scenarios – which according to Wolfart Pannenberg, represent a falsification of Christian eschatology.⁶⁰ Here Russell attempts a synthesis from two patterns. The

Cosmic Christ carries on the Christian tradition, especially the eschatological vision based on the resurrection of Jesus and the promises of enacting similar effect to the whole universe. The standard bleak scientific picture instead is a synthesis of cosmological eschatology based on present knowledge and discoveries.

Evolution theory and Catholic eschatology are indeed two wide, complex and intricate topics. The explorations of the two fields have unveiled different pictures, useful not only to emphasize the contrast but also to seek possible convergences between the two worldviews. The way out of the impasse has to be found through a dialogue that seeks the converging point between the methods and the contents fostered by the two worldviews.

Necessity of a Dialogue between Investigative Methods

Because of their methodological approaches, the two fields have been seen as developing and moving in two diametrically opposed directions. At first glance, the questions addressed were seen as completely unrelated. A closer look has instead shown ranges of articulations implying that the two discourses are not completely disconnected. There is a relation of mutual indwelling between the quests for “origins” and that of the “ends” trapped by the methods fostered by each side.

The task of explaining Catholic eschatology to an evolutionist, or engaging evolutionism and eschatology in dialogue necessitates a focus on the methods upheld in each of the two fields. On the one hand, the evolutionist’s insistence on strict scientific methods streamlines the range of investigation to layers or levels of existence with less direct accession to eschatological investigation. Logically, with regard to matters that cannot be investigated through scientific methods, evolutionism is compelled to silence and agnosticism. The danger of extrapolation has been denounced through rhetorical questionings and criticisms addressed to scientific naturalists, physicists and other scientific motivated denials of after-life, existence of soul, spirits and other foundational elements for eschatology.⁶¹ Ruse’s evaluation of evolutionism is one example. He sees evolutionism as a secular religion built around the concepts of progress, improvement, advances in life. Furthermore, he attracts attention to the

extrapolations evolutionists have made. Referring to the leaders of the evolutionary theory, he says that “they did not view evolution as just a dry ‘fact’ of science” but “a confirmation of a life principle”.⁶² The contention of extrapolation means that there is a boundary to which scientific explanation should be restricted, on the one hand. On the other hand, eschatology runs analogical risks when it ignores the solicitations coming from the scientific insistence on methods, and overstresses instead a dogmatic approach, and reiterates antiquarian forms of eschatology.

The dialogic approach to foster must be one harboring a convergence between the two trends. This convergence is capable of attaining the goal Russell attributes to theologians, namely the ability to make eschatology intelligible to a contemporary audience, which in our particular case, is made of believers and non believers alike, of people relying on scientific explanations that not always match traditional articulations. Henceforth, I will refer to the fruit of that convergence as “scientific eschatology”.

Scientific Eschatology for a Scientifically Minded Audience

The awareness of the hermeneutic challenges between the scientific and religious discourse has awakened the need for appropriate answers. Russell’s methodological guidelines for new research in scientific cosmology and Eschatology stand as the best illustration of a detailed, authoritative and yet sophisticated response.⁶³ Scientific eschatology intends to be a simplified methodological response, a cross-breeding of scientific mentality and faith. In a particular way, it is an attempt to creatively foster mutual interaction between Christian theology – eschatology in this particular case – and science (evolutionist theories). A scientific articulation of faith elements is one reformulated or packaged to correspond or contain answers to the questions of the scientific mind. It is a positive response to Haught’s observation:

“Unfortunately, while modern science has allowed educated people to expand their thoughts and images of the universe, Christian theology and spirituality have generally presented the figure of Christ in dimensions too di-

minutive to invite worship. A God or savior smaller than the universe will scarcely be noticed except by those who have little interest in the natural world”.⁶⁴

As a method, scientific eschatology needs to provide space for dialogic concessions. The necessity emanates from the uniqueness of the question under investigation. As McBrien says, they are the kinds of quests for which our answers will always be inadequate, because “we are at once the questioner and the questioned”.⁶⁵ Moreover, as questioner and questioned the confines of our potentials have not yet been established. Pierre Teilhard de Chardin wrote:

“No proof exists that Man has come to the end of his potentialities, that he has reached his highest point. On the contrary, everything suggests that at the present time we are entering a peculiarly critical phase of super-humanisation”.⁶⁶

Still as a method, scientific eschatology must also recognize the validity of evolutionism and resist any attempt to restrict it. It must be extended to embrace beyond the reach and confines of human scientific comprehension. From the interpretation of the historical bases of the doctrine, it is clear that there has been a progression in ways Christians understood their ends. For instance, in Jesus’ time, the Jewish people had several views about the after death. Some believed in resurrection, others did not. The question of the status and whereabouts of the first dead converts played an important role in developing the Christian doctrine of eschatology. The New Testament and early Church borrowed and reinterpreted Jewish eschatological views in the light of the promises of Jesus. It is in that sense that New Testament speaks of new creation; and reiterates that believers have already eternal life. It depicts Jesus as the fulfillment of the Jewish eschatology – “the One who is to come” at the end of times; He is the God among people, a restoration of “original time” – life in Eden – when God at the beginning was Emmanuel with the whole creation. The source of Christian hope is rooted in the discovery of the intertwinement of “beginning and end” in the divine plan. It is exactly

because “end” is not only understood as “finitude”, but as “finality” “goal”. God has an intention, a plan for human kind, a plan whose realization evolves through space and time. Creation and human history are neither aimless development nor a growth in a random *laisser-aller* doomed to nothingness. It rather evolves towards a goal which is divine.

Last, still as a methodology, scientific eschatology needs to integrate the recesses of the efforts of predecessors, correcting their shortcomings and expanding on their limitations. The great contribution of the scientific mentality is that learning is a never-ending endeavor. The process invoked implies the capacity to read through tradition, to recognize events and people who have positively effected it so as one can build on what they have established. A Catholic scientific eschatology cannot be thought without mentioning forerunners who took scientific explanations seriously and attempted to answer them.

Bergson’s “creative evolution” and his disciple P. Teilhard de Chardin’s notion of the “Omega point” are two examples of an evolving spirit towards a scientific eschatology. Bergson’s explanation of evolutionism mentioned “a vital impulse” within reality, which in his terms, is “either God or of God” and “whose nature can only be grasped by direct intuition”. As to the future, he held it “as an open adventure, an uncertain struggle between the life force and death matter”.⁶⁹ Teilhard de Chardin, admittedly recognized the same dynamism within the universe. “Using the word ‘evolution’ in its most generally accepted meaning, and in a purely experiential context, I would say that man’s origin by way of *evolution* is now an *indubitable* fact for science”.⁷⁰ He spoke of evolution with optimism, namely as an unfolding towards a cosmic terminus. “Since time began, even in inorganic matter, evolution has been an increase of the ‘conscious’. It will always remain an increase of the ‘conscious’. In the human person, the evolution has achieved a higher jump. The ‘conscious’ has raised to “self-consciousness” in man.⁷¹ The culmination of evolution must be the highest degree of consciousness, which P.T. Chardin calls “the Omega Point” “where all being will be apocalyptically gathered into a final divine union”.⁷² Their ideas were not only innovative; they further displayed a mastery of evolutionary theory with which they engaged in dialogue, while striving for a faithful and dynamic re-interpretation of the fundamentals of the Christian doctrine. The conversation

Bergson and Teilhard de Chardin initiated has served as inspiration for many theologians. It is still to be brought ahead in those specific areas; Peter C Phan's brief introduction to Catholic theology calls for further investigation of catholic eschatology. He speaks of the scientific theories of the big bang, big crunch, biology and physics.⁷³

Methodologically speaking, the further investigation mentioned needs to be inscribed creatively in the dynamics of a tradition. First, by tradition we refer to people, to a community endowed with a conviction, with an experience – in this case, of faith – that is being grasped, lived and at the same time transmitted through generations. Second, a creative and critical reading of tradition unveils the dynamisms and metamorphoses occurring during that transmission. It can also delineate the core from the accidental elements of the tradition, liberating hence the creativity needed to enhance proper adaptation of the tradition to new demands. Third, creative insertion in tradition unveils that there is more to Catholic eschatology than a discourse on *four (five, six) last things*.⁷⁴ Karl Rahner and Benedict XVI instantiate forms of this creative insertion. Without negating tradition, for instance, Karl Rahner views eschatology as *kairos*, a reality that has been already initiated in the Jesus' Event, even though it is still to be fulfilled. As for Pope Benedict XVI, he speaks of immortality not in terms of time, as living beyond the limits of time. For Benedict XVI, immortality is a relation – being in the loving and nourishing communion with God, with Jesus who is life in plenitude.⁷⁵ This modifies traditional tendencies that unilaterally ascribed eschatological topics to the after death.

Hope emanating from the resurrection of Jesus constitutes the founding element of the eschatological message that Christians have been conveying. The emphasis and formulation might differ but it should not obfuscate the centrality of the revolutionary impact of the Jesus' Event. This constitutes the novelty that can counterbalance the lack of scientific/evolutionist eschatologies. Last, creative insertion in tradition must identify salient moments and remarkable contributors to the dynamics of conservation and self-renewal of the tradition. This is a particularly needed step in fostering a creative but well rooted dialogue.

The Content of Scientific Eschatology

Besides being a methodological approach, a second important specificity of scientific eschatology is related to its content. It is not a by-product of the dialogic negotiation of the method but the unveiling of the core element of faith. The method does not create the answer but only helps to locate it and replace it in a much more visible position. Scientific eschatology is not a watering down of base foundations but it identifies them in a way which illuminates their potential. The criteria to define the content of scientific eschatology can be established on the basis of the middle way Peter Phan alludes to this when he writes:

“In conversation with cosmologies, Christian eschatology will seek to avoid both a naive evolutionary optimism and a paralyzing pessimism and will attempt to formulate a credible theology of hope. Furthermore, chaos theory, emphasizing unpredictability and genuine openness and novelty, offers Christian eschatology useful insights on the nature of the future not as a mere rearrangement of the past but as a variety of possibilities of true becoming, which God can bring about in God’s kingdom”.⁷⁶

What are the useful insights of Christian eschatology that can enrich the deficiency of scientific eschatology? Furthermore, on which scientific ground should they be posited so that their positive contribution can also be asserted by the scientific mentality?

If Christianity has a useful contribution to this eschatological quest, it is the Jesus Event. His life, death and resurrection constitute the core content of that insight. Here we find a paradigmatic and insightful model for a scientific eschatology. Jesus is a historical person whose deeds and words can be ascertained and certified through scientific means. As every human being, he experienced death. His after death however brought a radical change to the common trajectory of human existence. Resurrection modified the normal course of human evolution. It marked a discontinuity in the history of human evolution and set a ground to rethink last things questions. Furthermore, Jesus’ resurrection becomes the background

guaranteeing any talk on individual and cosmic eschatology, a talk that is rooted in his unfailing promises. As he promised, so it was and will continue to be.

One basic preoccupation is the scientific basis of proposing the Jesus Event as beholding the solution for scientific eschatology. As an answer, we need to recognize the many efforts addressing resurrection as a scientific fact.⁷⁷ It can be explained as a discontinuity in the order of human evolution. Jesus' resurrection operated a paradigmatic shift that brings about cosmic implications.

Dwelling on a method proper of scientific eschatology, one notes that evolutionary theories are familiar with discontinuities. Beginnings of the universe, beginnings of life and the rise of consciousness, of free and intelligent hominids are all referred to as evolutionary discontinuities. Resurrection is being hence proposed as a discontinuity *sui generis* and hence capable of enhancing scientific eschatological hypothesis.

AN INVITATION TO HOPE

Once the nature of the quest at the heart of the evolutionist and eschatologist inquirers has been established as a quest for deep meaning, what concerns us ultimately, it becomes easier to orient the investigation towards greener pastures. As Lionel Tiger says, "science no less than religion is a defense against meaninglessness".⁷⁸ And the core of Christian eschatology, according to Russell is to provide for hope, real hope – to answer to society's demand and aspiration for hope.⁷⁹ Once we realize the limitations of scientific explanations to cater fully for such needs, then the time comes to seek higher – beyond nature, beyond evolutionism – for a more encompassing solution. At this point, the Christian message can stand in a privileged position. It addresses these questions in a larger framework than the one circumscribed by the scientific mentality. The answers can hence touch the depth where they originate. The observation of Pope Benedict regarding questions related to death⁸⁰ can be extended to eschatological inquiries. Even before we are conscious of it, they are an invitation to hope. Responses to those inquiries must be beyond the rational certainties and/or moral duties. They constitute a form of knowl-

edge *sui generis*, for it pertains to a different kind of fundamental question, namely what Kant's epistemological system states as "What may I hope for?"⁸¹ Hope is the clue. For without it, we have no other ways of penetrating the unfathomable mystery lying beyond death and its realm. Without hope, death itself becomes a source of desolation, agony, absurdity; mostly because it negates our deepest aspiration for eternity.

Moreover, at the end of the day, the basis for the development of a scientific eschatology needs an attitude of openness to scientific methods and rootedness in the contents of the Christian eschatology. The development of such a theology will benefit from the dawn of that openness shown in the Church's environment. The nature and depth of that dialogue needs to be posited on hope, faltering point for the scientific mind but anchor for the Christian eschatology. Scientific eschatology needs to be a theology not limited to the last things but emphasizing the object and foundation of the Christian hope, rooted in the promises of Christ which according to Paul O'Collaghan are:

"the coming of Jesus Christ in glory at the end of time, the resurrection of the dead, the renewal of the cosmos and judgment of humanity, followed by eternal life for those who have been faithful to God, or its perpetual loss for those who have not".⁸³

CONCLUSION

In terms of methods and contents, Catholic eschatology and evolutionism emerge from two different epistemic frameworks or paradigms. As a precondition for an explanation of Catholic eschatology to an evolutionist interlocutor, an acquaintance with the dynamics ruling those paradigms is mandatory. This paper has hopefully shown that despite the difference, there are still some points of convergence, enabling a dialogue between the two fields. Evolutionism and eschatology are inhabited by a quest for meaning and understanding, understanding of the origins, the diversifications as well as the ends (finalities) of things, of existence. The earlier tendency was to highlight the discrepancies, leading to the conclu-

sion that there is no meeting point possible between eschatology and evolutionism. But this present reflection has taken a different approach. “Beginnings” and “ends”, “origins” and “finalities”, “evolutionism” and “eschatology”, formed two poles interconnected by a deep seated epistemological quest for existential meaning. Reflection on death is as important to evolutionary thinkers as the quest for origin is referential for eschatologists. The stress on the confines of each method wanted to highlight ways in which these two fields can complement each other. This has been underscored by the question on whether inquiries regarding “origins” and “ends” are mutual exclusive or do they call for each other? Our positive response has been formulated in a call for “a scientific eschatology”, that is, an explanation that merges the scientific concern and is capable of articulating the faith statement in a scientific manner. A scientific eschatology will find it easy to articulate that indeed a reflection on “beginnings” entails – at least implicitly – some concerns for the “ends”. It will recognize that preoccupation as partially articulated in the evolutionist explanation and calling for them to be addressed in a larger framework.

Moreover, scientific eschatology calls each party to humility. Questions of origins and ends are profound and complex. They remind us that our efforts of comprehension and mental conquest will always be limited and hence continuously in need of new reformulations. They call us to respect the principle of evolutionism, conceding that despite our endeavor, we will always be short of explanation. They warn us against the danger of dogmatism. No matter whether it is religious or scientific, dogmatism can hinder, falsify the process of understanding and the quest for deep meaning.

Finally, parting ways from dogmatism, scientific eschatology embraces hope as the pillar of the framework through which to address questions of origin and ends. In this way, it can provide a message not of despair, not of fatalism, not of indifferentism, not of triumphant assertions and/or imperialistic conquests but a message of hope and humility, for what we hope for is only achieved through an act of faith, and surrender to the promises of Jesus Christ.

Endnotes

¹<http://www.britannica.com/EBchecked/topic/197367/evolution> (Entered on Oct. 15, 2012).

²Lewen, *Darwin*. London and New York: Routledge, 2007, 18.

³“Evolutionism” in *Encyclopedia of Religions*, p.208-09.

⁴*The Structure and Distribution of Coral Reefs* published in 1842 related the theory to marine biology. *The Variation of Animals and Plants under Domestication*, published in 1868 reiterates the same theory, emphasizing earlier arguments.

⁵*The Descent of Man* published in 1871 applied the evolution theory to the human species.

⁶“Evolution” *Encyclopedia of Religion*, 211.

⁷David Ray Griffin, *Religion and Scientific Naturalism*, New York: State University of New York Press, 2000, 11.

⁸See Robert John Russell, *Cosmology from Alpha to Omega*, Minneapolis: Fortress Press, 2008, Freeman Dyson, *Infinite in All Dimensions*, New York: Harper & Row, 1988; Frank J. Tipler, *The Physics of Immortality: Modern Cosmology, God, and the Resurrection from the Dead*, New York: Doubleday, 194; John D. Barrow and Frank J. Tipler, *The anthropic cosmological principles*, New York: Oxford University Press, 1988.

⁹“The Genographic Project” <<https://genographic.nationalgeographic.com/about/>> Entered on January 21, 2013.

¹⁰“Transhumanist FAQs” <<http://humanityplus.org/philosophy/transhumanist-faq/>> Entered on January 22, 2013.

¹¹Nick Bostrom, “Transhuman Values” <<http://www.nickbostrom.com/ethics/values.html>> Entered on January 21, 2013.

¹²“Top Ten Transhumanist Technologies” <<http://lifeboat.com/ex/transhumanist.technologies>> Entered on January 21, 2013.

¹³C. Leon Harris, *Evolution Genesis and Revelations*, 2.

¹⁴“Darwinism” in *Catholic Encyclopedia*, 670.

¹⁵“Darwinism” in *Catholic Encyclopedia*, 670.

¹⁶In Buddhism for instance, the notion of reincarnation, layers of hells and even a conception of species as areas of retribution for created karmas constitute part of Buddhist eschatology, previous to attaining the realm of Bodhisattva and finally that of the Buddha.

¹⁷Simon Tugwell, *Human Immortality and the Redemption of Death*, London: Darton, Longman and Todd, 1990.

¹⁸An allusion can be made here to the cultural and religious depictions of the after- life existence, stories and conceptions of retribution in the after death existence, etc. It is in this sense that we might speak of a Hindu, a Buddhist, an Islamic, a Christian (Catholic and/or Protestant), an African or Chinese eschatology. The quest for meaning and explanation for ‘what next’ after this- life forms a set of homeomorphisms developed in their contextual eschatological views. For an overview

of eschatological religious views, see Arnold Toynbee and Arthur Koestler, *Life after Death*, London: Weidenfeld and Nicolson, 1976.

¹⁹For more explanations regarding this division see Colm McKeating, *Peace at Last: A Christian Theology of the Last Things*, Quezon City, Manila: Claretian Publications, 2004, 159-237.

²⁰McKeating, 91-157.

²¹These teachings are summarized as article of faith proclaimed from the Early Church. The Apostles Creed presents an eschatological view of Jesus and stresses its significance for the believers. "I believe in Jesus Christ, [...] He suffered under Pontius Pilate, was crucified, died, and was buried. He descended into hell. On the third day he rose again. He ascended into heaven and is seated at the right hand of the Father. He will come again to judge the living and the dead. I believe in [...] the communion of saints, the forgiveness of sins, the resurrection of the body, and the life everlasting". The Nicene Creed reiterates the same with some minor alterations. "He (Jesus) will come again in glory to judge the living and the dead, and his kingdom will have no end. [...] We acknowledge one baptism for the forgiveness of sins. We look for the resurrection of the dead, and the life of the world to come".

²²Genesis 2:17; Romans 5:12, etc.

²³2 Corinthians 5:10; John 9:4; Luke 12:40; 16:19...

²⁴Karl Rahner, *Theological Investigations* vol. 1. (London: DLT, 1963), 195.

²⁵Luke 16:22 sqq.; 23:43; Acts 1:25;

²⁶There is a need of a corollary note regarding "purgatory" as a locus or state of eschatological retribution. It has been often portrayed as a still transitory period, one other chance for further purification in between death and final judgment. The doctrine of purgatory has been in evolution since its final formulation which was only during the middle ages. That is why it remains one of the teachings of the Church contested by reformists. See Jacques Le Goff, *The Birth of the Purgatory*, transl. by Arthur Goldhammer, (Chicago: Chicago University Press, 1990).

²⁷"The 1979 Letter from the Sacred Congregation for the Doctrine of the Faith". in Simon Tugwell, *Human Immortality and the Redemption of Death*, London: Darton, Longman and Tod, 1990, 175

²⁸Dn 7:9-28; Mt. 24:3; 1Th 2:19; 2Th 2: 1; 1Cor. 5, 1 Th 5:23; Jas 5:7-8, 1 Jn 2: 28.

²⁹Mk 13, Mt 24, Lk 21.

³⁰In the letter to the Thessalonians, Paul answers the preoccupation regarding the brothers who have died before the imminent second coming of Jesus Christ, a coming that was associated with the end of the world. Moreover, the timing of the second coming still constitutes a leitmotiv for some Christian millenarian movements. For more details see, Terence Penelhum, "Christianity" in *Life after Death in World Religions*, edited by Harold Coward, (Maryknoll, N.Y.: Orbis Books, 1997), 37-40.

³¹The term "parousia" is used in reference to the second coming of Jesus Christ, an event described as glorious and with definitive implications.

³²Mt 25.

³³2 Peter 3:13; Romans 8:19; Revelation 21:1.

³⁴Acts 17:28.

³⁵1 Corinthians, 15:28.

³⁶Revelation 21:4.

³⁷Peter C. Phan, “Roman Catholic Theology” in *The Oxford Handbook of Eschatology*, edited by Jerry Walls (New York: Oxford University Press, 2008), 229.

³⁸Robert John Russell, 273.

³⁹This aspect is particularly highlighted by Jurgen Moltmann as he entitled his book on eschatology a “*Theology of Hope*” and Paul O’Callaghan’s Christ our Hope.

⁴⁰Colm McKeating, *Peace at Last: A Christian Theology of the Last Things*, Quezon City, Manila: Claretian Publications, 2004, xv.

⁴¹A first approach to this topic must realize how it is tributary of the historical debate on the relationship between science and religion, faith and reason. The debate in question has developed very concise and tricky wordings, many acronyms and schools of thoughts borrowing from as many fields as theology, philosophy, and science. In some occasions and places, it has not only been concerned with doctrinal orthodoxy, clarity of mind... It has served as platform to stand for religious convictions, to foster educational policies and even more. In a nutshell, the antagonisms are so complex to summarize. However, in explaining the catholic eschatology to the evolutionist mind, it is possible to highlight salient points of the debate in a more focused way. For a concise presentation of the recent formulation of the problem, see for instance Michael Ruse, “A Darwinian can be a Christian, too” http://www.huffingtonpost.com/michael-ruse/can-a-darwinian-be-a-chri_b_618758.html (entered on November 15, 2012).

⁴²See Peter J. Bowler, *Evolution: The History of an Idea*, revised edition, (Berkeley and Los Angeles, California: California University Press, 1989), 333-64; Kenneth R. Miller, *Finding Darwin’s God: A Scientist’s Search for Common Ground Between God and Evolution*. New York: Harper Collins, 1999); Mariano Artigas, Thomas F. Glicky Rafael, A Martinez, *Negotiating Darwin: the Vatican Confronts Evolution* (Baltimore: The Johns Hopkins University Press, 2006); David Ray Griffin, *Religion and Science Naturalism* (New York: State University of New York Press, 2000, especially chapter 8 on creationism and Darwinism).

⁴³Kenneth R. Miller, *Finding Darwin’s God: A Scientist’s Search for Common Ground Between God and Evolution*. New York: Harper Collins, 1999), xi.

⁴⁴Kenneth McKeating, *Peace at Last* 174.

⁴⁵Karl W. Giberson, *Saving Darwin: How to be a Christian and Believe in Evolution*, 38-39.

⁴⁶The implicit and transitional agnosticism as a way of facing eschatological inquiry goes back to Darwin. Darwin found death simply too profound to be comprehended. Additionally, questions related to individual eschatology played a determinative role in his formulation of evolutionism. According to James R. Moore, anger

and grief connected to the death of his father in 1848, who according to the current doctrine was in hell, followed three years later by that of, Annie, his ten year-old daughter constituted the point of no return. See Larry A. Witham, *Where Darwin Meets the Bible*. NY: Oxford University Press, 2002, 202; Karl W. Giberson, *How to be a Christian and Believe in Darwin*, Harper Collins e-books, 39-40. Charles Darwin and Francis Darwin, *The Autobiography of Charles Darwin and Selected Letters* (New York: Dover, 1958), p.87 and Randall Keynes, *Darwin, His Daughter and Human Evolution* (New York: Riverhead, 2002).

⁴⁷Naturalists claim that nothing exists beyond the natural universe. They also tend to explain everything, including human behavior, consciousness, as responding to mechanisms of natural laws. The universe and what occurs inside are products of the laws inherent to nature. There is no need to look for causality outside the confines of nature itself. Because of this radicalization, the naturalist view is also referred to as “ontological naturalism” or “philosophical naturalism”.

⁴⁸Ilia Delio, *Christ in Evolution*, Maryknoll, New York: Orbis Books, 2008, ix.

⁴⁹Cited in Larry A. Witham, *Where Darwin Meets the Bible*. NY: Oxford University Press, 2002, 23.

⁵⁰See Robert Crawford, *Is God a Scientist? A Dialogue between Science and Religion*, N.Y.: Palgrave, MacMillan, 2004, 135-36; and Raymond Moody’s best seller, *Life after Life*. San Francisco: Harperone, 2001.

⁵¹Robert John Russell, *Cosmology: From Alpha to Omega*, New York: Fortress Press, 2008, 282.

⁵²Robert Crawford, *Is God a Scientist*, 133.

⁵³Gary North in his book, *Is the World Running Down? Crisis in the Christian Worldview*, speaks pessimisms of the scientists, of entropy and social cataclysms. See Gary North, *Is the World Running Down? Crisis in the Christian Worldview*, (Texas: Dominion Press, 1998); Mary Midgley, *Evolution as a Religion: Strange Hopes, Stranger Fears*, London and New York: Methuen and Co. Lt., 1985.

⁵⁴Robert Crawford, 134.

⁵⁵The New Testament texts reiterate Jesus’ obstinate refusal to give a precise date of his second coming. Nobody not even the Son, knows the time of *parousia*. Mt. 24:36.

⁵⁶Robert Crawford, 135.

⁵⁷See John Robert Russell, 283.

⁵⁸Dyson, quoted in John Robert Russell, 285.

⁵⁹Robert John Russell, *Cosmology: From Alpha to Omega*, New York: Fortress Press, 2008, 280-282.

⁶⁰Robert John Russell, *Cosmology: From Alpha to Omega*, New York: Fortress Press, 2008, 282.

⁶¹John Haught’ *Is Nature Enough?* is a rhetorical provocation to the mentioned view. See John Haught, *Is Nature Enough? Meaning and Truth in the Age of Science* (Cambridge: Cambridge University Press, 2006). See also John Fidor and

Messimo Piattelli-Palmarini, *What Darwin Got Wrong*. (New York: Farrar, Straus and Giroux, 2010); Harun Haya, *The Dark Spell of Darwinism: How Darwinists Twist the Truth to Turn People away from God*, (Istanbul: Global Vision, 2006).

⁶²Michael Ruse, *The Evolution-Creation Struggle*, Cambridge MA: Harvard University Press, 2005, 31.

⁶³Russell, 304-318.

⁶⁴J. Haught, Preface to Ilia Delio, *Is a God a Scientist? A Dialogue between Science and Religion*, x.

⁶⁵Richard P. McBrien, *Catholicism* (New Edition, New York: Harper San Francisco, 1994, 100.

⁶⁶Pierre T. Chardin, *The Future of Man*, 113.

⁶⁷Rev. 5.17, Gal. 6:15.

⁶⁸Jn 3:36.

⁶⁹Evolution, *Encyclopedia of Religions*, 212.

⁷⁰P.T Chardin, *Christianity and Evolution*, (transl. by R. Hague, New York: Harvest Book, 1969, 139.

⁷¹Paul Emile Duraux, *Histoire naturelle de l'humanite selon Teilhard*. Paris: Editions Universitaires, 1964, 120-122. (l'hominization est une mutation differente car avec elle est venue la conscience).

⁷²Pierre Teilhard de Chardin, *The Future of Man* (translated by Norman Denny, New York and Evanston: Harper & Row Publishers, 1964, 122-23.

⁷³Peter C. Phan, "Roman Catholic Eschatology" in *The Oxford Handbook of Eschatology*, Edited by Jerry L. Walls, (New York: Oxford University Press, 2008), 229.

⁷⁴Traditionally, Catholic eschatology has been referred to as a doctrine on the last four things: death, judgment, heaven and hell. The terminology remained unchanged even after the insertion on the discussion on purgatory as one of the elements of the doctrine. The 1992 *Catechism of the Catholic Church*, in its explanation of the last article of the Creed, speaks of the "six last things", namely, particular judgment, heaven, purgatory, hell, Last Judgment and finally New Heaven – New Earth.

⁷⁵Peter John Cameron, "L'immortalit?" in *Une Ann?e avec Ben?it XVI*, Paris: Magnificat, 2006, 51.

⁷⁶Peter C. Phan, "Roman Catholic Theology" in *The Oxford Handbook of Eschatology*, New York: Oxford University Press, 2008, 229.

⁷⁷Is resurrection a metaphor, a miracle or a literally scientific fact? The question has been and will still be attracting the attention of apologetics, theologians and scientists as well. From the 19 Century on, the emphases had stressed different points among exegetical interpreters who all aimed at a scientific explanation. One area worthy to notice is the scientific attention given to the *Shroud of Turin*. Latest conclusions imply that the piece could be a scientific evidence of the resurrection.

⁷⁸Lionel Tiger quoted in James Carpenter, *Nature and Grace: Toward an Integral Perspective*. New York: Crossroad. 1988, 165.

⁷⁹John Robert Russell, 274.

⁸⁰Benedict XVI, "Man Needs Eternity -- and every other hope, for him, is all too brief" <<http://www.vietcatholic.net/News/Html/93755.htm>> Entered on November 30, 2012.

⁸¹Highlighting the peculiarities of methods, Kant structured his *Critique of Pure Reason* (1781) around three questions: "what can I know?", "what I ought to do" and "what may I hope for". According to this classification, religious questions, and especially those addressed in eschatology fall under a discussion on hope.

⁸²JPII's assessment of evolution as a possibility and Benedict XVI reiterated call on a dialogue between faith, reason and science can serve as a ground to revisit some theological reflections such as those pertaining to relations between faith and science. For instance, Bergson's "creative evolutionism" and Pierre Teilhard de Chardin's intuition of the Omega Point manifest awareness of evolutionist views. Hence, the current openness and willingness to take in scientific theories might profit from the methods, insights and endeavor of these Catholic thinkers. Their efforts displayed the tasks expected from a scientific eschatology.

⁸³Paul O'Callaghan, *Christ our Hope: An Introduction to Eschatology*. Washington DC.: The Catholic University of America Press, 2011.

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