The *Tree of Life* : Philosophical and Theological Considerations

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Biology continues to use the *Tree of Life* image to show the temporal continuity and discontinuity of the living beings. Moreover, the development of genetic, molecular biology and paleontology has originated phylogenetics. This discipline studies evolutionary relatedness among various groups of organisms through molecular sequencing data and morphological data matrices. The *Tree* offers interesting points for semiotic perspectives and for theological approaches too. The symbolic reading of the *Tree of Life*, on the one hand, and the analogies with the Biblical genealogies and some Christian images, on the other hand, will be explored.
Keywords: Tree of life, Phylogenetics, Image, Analogy, Genealogy, Narration, Drama

Introduction

The *Tree of Life* (ToL) is a particular scientific representation of the history of the life. It is "an iconic organizing principle in the modern theory of evolution"[1]. This image, in its different versions, tries to show the temporal continuity and discontinuity of animals, vegetables and other living beings.

The aim of this article is to develop the idea that ToL offers the possibility of different readings, in scientific, philosophical and theological levels.

Firstly, ToL can be read literally, as a representation of the phylogeny of species. Secondly, ToL will be considered from the philosophical point of

1 FORD DOOLITTLE, W.: The Attempt on the Life of the Tree of Life : Science, Philosophy and Politics. In: *Biology and Philosophy*, 25, 2010, p. 455.

view. In this sense, the logic of the life, the semiotic dimension of the ToL, and the neutrality of this image will be analyzed in this article.

Finally, it is possible to link ToL with the theological perception of the life. The last part of the reflection will develop some theological approach to the phylogenetic image.

I. The *Tree of Life* and phylogenetics

1. The image of the tree

The graphic of the tree to represent the life has a complex history. Charles Darwin himself drew a tree to represent the history of life in his notebook[2], but he considered it just as a way to express the idea of a descendent with modification[3]. From that period there were countless efforts to formulate a method for phylogenetic reconstruction and its graphic representation by means of a genealogical tree.

The scientific plan of structuring the history and diversity of life by means of a graphic that includes morphological (visible and genetic or molecular), temporal (studied by palaeontology and geology) as well as spatial (studied by biogeography) aspects is behind the construction of the ToL. These aspects enable the specification of features a certain individual, population or species possesses in order to express them graphically. Resorting to individualizing techniques (morphological description, genetic sequencing description, dating, comparison, bio-geographical data, etc.) population continuities are established which are completed by means of hypotheses in those cases where species belong to the past. Current genomic sequencing techniques make corroboration or improvement of the lines that illustrate relationships and origins among species possible.[4]

2 In *Notebook "B"* there are two designs, accompanied by an explanation. Cf. Charles Darwin's *Transmutation Notebook 'B'*. 1837–1838, 26; Darwin online http://darwin-online.org.uk.

3 Cf. PENNY, D.: Darwin's Theory of Descent with Modification, versus the Biblical Tree of Life. In: *Plos Biol*, 7, 2011, e1001096.

4 "From the time of Aristotle in the fourth century BC to Darwin, Huxley, and Owen in the nineteenth century, the study of the diversity and history of life focused on morphology and, to a lesser extent, behavior. Only in the second half of the twentieth century did it become possible to compare the genes and molecules of different species, and thus to understand more clearly both the evolutionary relationships among species and population processes such as gene flow and genetic drift. The impact of molecular biology on evolutionary has been so profound that it is hard to imagine that evolutionary biology could experience further methodological conceptual shifts of similar magnitude. And yet, the tools of genomics (a suite of biotechnologies that can be described as molecular biology writ large) are causing just such an impact. Genomics is to twenty-first century evolutionary what protein electrophoresis and DNA sequencing were to the field in the twentieth century, and likewise promises to provide as many questions as answers." (EDWARDS, S. In: FUTUYMA, D. J.: *Evolution*. Massachussets : Sinauer Associates Inc., 2005, p. 522.)

2. Conceptual options as regards the *Tree of Life*

a. "Tree", "forest" or "net"?

What complicates in our times the construction of the Tree of Life is the detection of two phenomena: lateral genetic transfer and whole genome fusions.[5] The former are common among bacteria and *Archaea* and it consists of genes from one individual passing on to another one. Thus, the genome a bacteria passes on to its descendant may resemble or not the genome it inherited from its own predecessor. The global image produced is something in between a tree and a net, with essential genes that tend to construct a tree while others tend to build a net.

Genome fusion, on the other side, makes the tree to be seen in the opposite direction: instead of divergence there would be convergence. Consequently, one should wonder: which of the two genomes reflects the course of evolution? If we only locate the ribosomal RNA genes, a traditional branching Darwinian tree is achieved. However, if more genes, or whole genomes, are taken into account, the resulting image is that of a ring in which the branches that had previously diverged now converge and fuse.

b. Tree of "species", "organisms", or "genes"?

Another source of debate lies in the unit upon which the *Tree of Life* is to be applied: on the species, as Darwin suggested and was continued by classical systematic taxonomy or rather on the individual organism?[6] Would it not be more appropriate to choose a gene tree, considering that genes manifest continuity along time and are those contributing the logics to the process? In any case, systematic biology continues relying on the species, though enriched by the ever more detailed genetic trees.[7] ToL would represent the history of the species. Then, it would require a concept of species in which the genealogy of the species be determined by the genealogical histories of the organisms making up species. Along said perspective, species are phylogenetic units and so they should be groups of organisms joined by a shared history. ToL can,

5 Cf. LANE, N.: *Los diez grandes inventos de la Evolución*. Barcelona : Ariel, 2009, p. 126–127 (original: *Life Ascending*, 2008).

6 Cf. VELASCO, J. D.: Species, Genes, and the Tree of Life. In: *Brit. J. Phil. Sci*, 61, 2010, p. 599–619.

7 "Phylogeny is the history of species and populations. It records the branching pattern of evolving lineages through time. One of the grand missions of Systematics is to reconstruct and provide details on the great Tree of Life. As difficult as it may be for modern methodologies to reconstruct this history, and as fraught with reticulations, hybridization events, horizontal gene transfer, and other mechanisms that cloud the picture of organismal history, it is important to reiterate that, at the level of populations and species, there is only one such history, even when reticulate. With species and populations as the focus, there is no heterogeneity in this demographic history, because the history has happened only once." (EDWARDS, Scott V.: Is a New and General Theory of Molecular Systematics Emerging? In: *Evolution*, 63, 2009, 2.)

consequently, represent the history of the species and, at the same time, the history of the organisms.[8]

3. Methodological reduction enables the identification of the structure in the history of life

The different versions of ToL suggest a view of what we call "life" considered along its history. The aim here is to represent a model of the evolutionary processes resulting from the bifurcation of the species lines.[9] Such view includes its visible and molecular morphology as well as its probable histories and interrelations. Those trees are provisional or modifiable: they can and should be redesigned following new data or hypotheses. In that sense, it becomes a design subject to permanent modification. In spite of that variability, the tree offers a view of the genesis of living beings that, perhaps more in its generalities than in its details provides a high dose of epistemological reliability. Such reliability derives from its systematic base, of which it is merely a representation. Even when links continue to be made to its branches, the mere existence of a tree intuitively evidences that the phenomenon "life" is in fact a web of interconnections among organisms and species along a vast period of time. Life, in its complex of differentiations, relations, temporality and spatiality, is synthetically shown by ToL. And so, the tree provides its readers a better understanding of the reality of life.

II. Philosophical approaches

1. New phenomena and old problems

The *Tree of Life* proposes giving classic philosophical issues a new consideration:

8 "However, a better option is to hold on to the view that the Tree of Life represents the history of species and require that we use a species concept where the genealogy of a species is determined by the genealogical histories of the organisms that make up that species. This is the strategy used by defenders of some versions of the Phylogenetic Species Concept. On this view, species are units of phylogeny and so must be groups of organisms united by a shared history (Mishler and Donoghue [1982]; Baum and Donoghue [1995]). With the right definition of species, the Tree of Life can represent the history of species and of organisms at the same time. In this way, we have a basis for phylogenetic classification. In such a system, only clades can be taxa. Since which groups are clades depends on the Tree, our classification depends on the Tree, not the other way around." (VELASCO, J. D.: Species, Genes, and the Tree of Life. In: *Brit. J. Phil. Sci*, 61, 2010, p. 600.)

9 O'MALLEY, A., MARTIN, W., DUPRÉ, J.: The Tree of Life: Introduction to an evolutionary debate. In: *Biology and Philosophy*, 25, 2010, p. 441.

a. The classical debate between Nominalism (there are no essences, just names) and Realism (names express something that beings possess, and species as well) emerges again when interpreting the tree of life. On the one hand, Phylogenetics – ToL being a symbolic expression of it – indicates that it is logically possible to locate living beings in a certain relation. This implies that classifications have real basis: species, populations and individuals possess a certain original entity which is detectable both in their phenotype and genotype. Genes are also real, consequently, they can be identified and their role in expressing phenotypes can be understood. Besides, all of them have a logical aspect: they are relations, there are similarities allowing connections among species and individuals themselves. The medieval dispute between Nominalists and Realists on if names merely designate a set of individuals or, on the contrary, they express the natures or essences (*quidditas*) of things, here acquires a new episode for debate. Although the definition of gene is in a radical revision – and some authors speaks of "computational module" to think it[10] –, current genomic research specifies that there exist something real – gene diversity and their interactions – that explains the relationships among individuals. The classical concept of analogy may shed some light on this issue. Animals and plants are predicated as individually different but common because of certain shared genetic heritage. On the other hand, the image – tree, forest or net – makes the panoramic visibility of the unit within the multiplicity the phenomenon of life offers possible. The trees contribute to the perception of the existing interrelation among units such as genes, individuals and species. Life appears, thus, as a complex unit in the simultaneous diachronic and synchronic multiplicity.

b. The issue of the last subject in the evolutionary process has to be considered again as well: genes, organisms, populations, or species? This question motivates the problem of the "subject" to be brought again into discussion. Some have chosen to grant operative entity basically to genes;[11] the other ones, however, seems prone to consider species, or even organisms conforming species. Even though the word of systematic biologists is deemed essential to settle this issue, they are unable to approach – due to the constraints of their own method – the ontological question of the entity underlying

10 "With the discovery of incredible diversity of gene structures, patterns of duplication, gene splicing patterns, and regulatory interactions, even the definition of gene itself has undergone radical revision. Some biologists now view the gene as a 'computational module' rather than favoring the traditional definition emphasizing information content or a template for an eventual amino acid sequence. This juxtaposition of old and new presents a tension in the field that may not be resolved for several decades. A reasonable assessment, however, is that the genome appears increasingly fluid and dynamic, and that the categories of gene, exon, protein, and RNA transcript are becoming less distinct." (FUTUYMA, D. J.: *Evolution*, p. 525.)

11 Such is Richard Dawkins's case. Cf. DAWKINS, R.: *The Selfish Gene*. New York : Oxford University Press, 1976.

the process. This philosophical subject, naturally, is not without theological repercussions.[12]

2. The tree as semiotic object

In any of its versions – Darwin's one, and those current ones combining trees of genes, or any other that might be produced in the future – the *Tree of Life* is a translation of the phylogenetic phenomenon into an image. Through a complex abstraction process of morphological and genetic notes different branches are composed. ToL formalizes what evolutionary biology detects in the connection of living beings along time. The path from phylogenetics to formalisation in an image such as that of a tree presupposes yet another abstraction: certain elements are transferred to a geometrical graphic. This, in turn, being a formal graphic, reaches a new level in the process of understanding: it becomes an image integrating perception for any given reader. He, at a glance, shall be able to grasp the fruit of countless observations and theories.[13]

The *Tree of Life* constitutes a symbolic *image*. Science has recurrently resorted to images or metaphors in history. Nowadays, a certain formalistic view of positivisms and structuralisms already superseded, the role played by these images in the life of sciences is admitted.[14]

Anyway, a distinction can be made between metaphors and symbols: the former constitute an attribute of the linguistic expression; the latter, are of the things themselves instead. ToL seems to be a metaphor and a symbol at the same time. It is a metaphor for it compares biological life in its multiple individuals along time with a tree. One hears things such as "life is like a tree". However, its use seems to legitimate yet a deeper reading, along the line of the symbol. The symbol is rooted in things themselves and it consists of one of its several properties to suggest meanings that surpass its univocal reading.[15] That is the case of realities such as the way, water, the sun, etc. Even though some authors support the conventional character of symbols[16], a great deal of

12 Cf. NIELSEN, M. V.: *Sin and Selfish Genes : Christian and Biological Narratives*. Leuven : Peeters, 2010.

13 Andrew Robinson and Christopher Southgate say: "...semiotic growth is dialectical in that new symbolic contexts offer new possibilities for iconicity, and new icons invite new developments in symbolically mediated understanding. It is in novel juxtapositions of different sign types, not in a unidirectional progression towards a superior kind of sign, that new cognitive possibilities arise." (ROBINSON, A., SOUTHGATE, C.: Incarnation and Semiotics : A Theological Anthropological Hypothesis.In: *Theology and Science*, 3, 2010, p. 286.)

14 Cf. PALMA, H.: *Metáforas en la evolución de las ciencias*. Buenos Aires : Jorge Baudino Ediciones, 2004, p. 301–302.

15 Cf. CHEVALIER, J., GHEERBRANT, A.: *Diccionario de los símbolos*. Barcelona : Herder, 1995, p. 15–37.

16 In this respect, Umberto Eco notes that the term "symbol" changes meaning among authors and currents of thought: while for formal logicians and mathematicians it means expressions devoid of meaning that occupy a defined place with a specific function in a formalised calculation (such as *x* and *y,* and the algebraic formulae*)*, other authors believe that a symbol is a series of not totally defined meanings. Cf. ECO, U.:*Come si fa una tesi di laurea*. Milano : Bompiani, 1971, p. 21–22.

contemporary hermeneutic philosophy has reappraised its place in aesthetic, religious, and metaphysical understanding of human being.[17]

Once ToL is admitted to be a linguistic or semiotic product, it can be treated as such. This does not imply that the way in which it was elaborated, empirical and univocal in character, is to be ignored. However, it can be dealt with as an open reality at other hermeneutical levels. In fact, the search for these images on the part of systematic in biology brings to a generalisation that may enable a comprehensive view of the phenomenon of life. It already is an intentional interpretation in that respect, regulated by epistemological and logical mechanisms that go beyond those used in the experimental field.

How can we interpret the phylogenetic trees? The "analogical hermeneutics"[18] can be a respectful method of the univocal and symbolic dimensions of the semiotic expression of phylogeny. We speak of *hermeneutics* because the scientific illustration of ToL is, ultimately, a reality that can be subjected to interpretation. And we use the expression *analogy* as a logical procedure which aims at finding a common reason within divergences – that may be qualitatively and quantitatively higher than similarities.

3. Neutrality of the image

In its configuration and interpretation, the phylogenetic image does not include neither the Natural Selection principle nor Intelligent Design theory nor any other theoretical explanation about the evolutionary process. The tree merely indicates the community of living beings and their probable common origin. In this respect, ToL constitutes a field shared by different kinds of evolutionists. In fact, it can be said to be a neutral figure. In biology, the interpretation of the way of the process is obviously crucial. The tree only indicates the community of living beings. In this respect, the tree constitutes a field shared peaceably by different kinds of evolutionists. In fact, it can be said to be a neutral figure. In biology, the interpretation of the way of the process is obviously crucial. Anyway, the graphic allows perceiving the history of life before any determinate explanation of it. In this sense, it is possible to speak of the tree as a "neutral" place to see the evolution process, because it shows the evolutionary process without any determination of its logical laws of real conformation. The tree of life, then, appears as a neutral and not-ideological image for the understanding of life. As a semiotic object, it shows an aspect of the history of the life, leaving within parentheses the mechanisms of the process. This *epoché* of any explanatory aspect of phylogeny allows a neutral access to the biological evolution. Nevertheless, the tree is neutral only if we

17 Cf. PALMA, H.: *Metáforas en la evolución de las ciencias*.

18 The expression "analogic hermeneutics" belongs to Mexican philosopher Mauricio Beuchot. Cf. FLORIO, Lucio: *Latin-American Prospective to an Integration of Knowledge : Beyond "Interdisciplinarity" and "Transdisciplinarity"*. (http://www.metanexus.net/conference2009/articles/Default.aspx?id=10807l)

see it as a finished figure, but not in its elaboration, because it is the end of a complex epistemological process that includes observations and theories.

Hermeneutics philosopher Paul Ricoeur says that symbol "gives to thinking"[19]. Certainly, the French author deals with natural and traditional symbols, which is not the case of the ToL. Anyway, because of the intentionality of the image of the tree of life, it is possible to widen the perspective and, then, to apply the reflections of Ricoeur to this image. Following this application, the tree gives to thinking beyond its univocal aim – the phylogeny – towards a global perspective of history of life. Any reader, any mere observer, directing his/her look to this graphic, can go beyond it towards an integral comprehension of the phenomenon of the life. Even though the tree is a scientific construction – and as such, provisional –, it operates as a symbol in its ability to generate a meta- univocal understanding of the life.

III. Theological approximations

First, it is necessary to highlight the *absolute epistemological heterogeneity* between ToL as a graphic construction of experimentation framed in a scientific theory with any other phenomenon originated in what Biblical tradition calls "revelation". Even though revelation has historical and natural bases, it still shows realities that transcend the experimental and theoretical field of natural sciences. Nevertheless, between the two orders, scientific reason and faith may find interconnections.[20]

1. Biblical genealogies

The Bible has genealogies. They are are constructions of kinship along time. Orally transmitted, they are not expected to be as accurate as those we have available today. Their theological intention is far more important than their historical accuracy. Their aim is to find the line of continuity in the history of salvation within the biological continuity of the human agents of that history.

The Old Testament reports several genealogies. The book of Genesis, made up by various traditions, consists of two parts: in 1-11, it narrates the history of the origins and in 12-50, the history of the ancestors. It clearly points out that the history of salvation has as presupposition the history of creation.[21] There emerge two genealogies there (Gen 5, 1-32: Adam's genealogy; 11, 10-32: post Deluge patriarchs) aiming at establishing the nexus between the first

19 RICOEUR, P.: *Finitud y culpabilidad*. Madrid : Taurus, 1991, p. 490.

20 The basis for the possibility of integration between the two orders lies in the relationship "nature and grace", according to classical Christian theology. To a certain extent, this problem is dealt with in the subject "Science and religion".

21 Cf. ANDIÑACH, P.: Génesis. In: LEVORATTI, A. J.: *Comentario Bíblico Latinoamericano*. Vol. I. Navarra : Verbo Divino, 2005, p. 363–367.

couple and Abraham.[22] Thus, the history of creation interconnects with that of salvation, protology, and soteriology.[23]

In the New Testament we find genealogies about Jesus in the synoptic gospels of Matt 1:1-17 and Luke 3:23-38. While Matthew's gospel initiates its genealogy beginning with Abraham with the aim to show Jesus' Jewish condition,[24] Luke follows the opposite direction: he begins with Joseph and goes backwards, through David and Abraham, to Adam and, from him to God himself.[25] Luke pursues a wider purpose that Matthew: to bring the figure of Jesus to his roots as human being.

In the gospels, genealogies do not seek to be accurate as we would demand a family genealogy to be today. However, supported in an oral tradition far more accurate than the contemporary one, it aims at relating the figure of Christ with Adam, the first man according to the Genesis (Luke) or to Abraham, the father of Israel's faith (Matthew). In both cases, the genealogies interconnect Jesus with humanity and the Jewish condition. That interconnection – that, once again, does not pretend to be historically accurate with models of contemporary historiography – seeks to link the history of humanity and of Israel with what they consider the definitive sense of those histories. Those "genealogical trees" converge in Christ as axis of life and of sense. They respect the individuals who have made the preceding history that has made the human emergence of Jesus possible.

Biblical genealogy constitutes a restrained model for the history of salvation. It shows how in parts of that history, particularly in the succession of certain human actors, it is possible to find a synthesis of the whole plain of God. The genealogy indicates the action of God intervening in the history of few of clans and peoples of Israel; at the same time, it shows that the divine action is going on precisely through the men and women related by blood or at least, interconnected by generation.[26]

The differences between both formulae – i.e. the *Tree of Life* and the biblical genealogies – are naturally enormous. On the one hand, ToL is an image that translates a scientific search for interrelation among species along time. Empirical accuracy is essential here, even though the configuration of the tree may include numerous hypotheses that contribute to complete the provisional image. On the other hand, the genealogies constitute theological

22 LOZA, J.: *Génesis 1-11*. Bilbao : Desclée De Brouwer, 2011, p. 11.

23 Cf. RUIZ DE LA PEÑA, J.: Teología de la Creación. Santander : Sal Terrae, 1988, p. 47–48.

24 Cf. MCKENZIE, J. L.: Evangelio según san Mateo. In: BROWN, R. E., FITZMYER, J. A., MURPHY, R. E.: *Comentario Bíblico San Jerónimo*. Vol. III. Madrid : Cristiandad, 1972, p. 173–174.

25 STUHLMUELLER, C.: Evangelio según san Lucas. In: BROWN, R. E., FITZMYER, J. A., MURPHY, R. E.: *Comentario Bíblico San Jerónimo*. Vol. III. Madrid : Cristiandad, 1972, p. 331–332.

26 "As regards the biblical genealogies, they may not say much to many people in the North Atlantic world. But for some other cultures to lack knowledge of one's ancestors is to suffer diminishment in one's personal identity. In any case, given the chequered career of some who feature in biblical genealogies, including those of Jesus himself (Matt. 1: 1-17; Luke 3: 23-38), we could be helped to grasp more deeply the truth that 'God writes straight but with crooked lines'." (O'COLLINS, G.: *Rethinking Fundamental Theology*. New York : Oxford University Press, 2011, p. 220–221.)

constructions founded in the oral memory on the lines of parental interrelation of certain human figures. They are lines of historical interconnection having a strong theological intentionality. In the first case, the subjects are living beings on a common history; in the second case, the subjects are human beings within a frame of divine action.

The tree and the genealogies, always remembering his deep epistemological distance, have a thing in common: a certain unit in the complex processes of life and history. Coincidences are considered absolutely by analogy, i.e., some similarity in some respects between things that are otherwise dissimilar. These coincidences are the followings: Firstly, the tree and the genealogies try to establish a relationship among individuals according their genesis. Secondly, they respect the individuals to chart the processes. They respect the originality of the individuals to describe the processes. Finally, they symbolize a certain progression in the story: of the life in the case of the ToL, and of the salvation in the genealogies.

This perspective is hermeneutical because implies an interpretation of signs; it is also analogical because it compares an empirical datum with a datum of faith. However, ToL and genealogies illuminate one to the other. In fact, ToL frames the history of salvation within a previous and contemporary process of species phylogeny. Biblical genealogies in turn confer meaning to the ramification of the the tree, because from one of them, that of *Homo sapiens*, other line of meaning is originated, and it provides a new perspective to the whole tree. To a certain degree, the biblical traditions go deep the analogy of *Tree of Life*, because they add a transcendent sense to the lines of human genealogies included into the wider net of lines of genealogies of the species. These are used in the Bible to express human continuity within the history of salvation. It is worth to highlight that, in the first half of the 20th century Pierre Teilhard de Chardin tried to combine evolutionary history with the history of salvation. For the French palaeontologist and Jesuit, there existed continuity between the tree of life (biogenesis) and that of genealogy (as symbol of Christogenesis). The linear character of "cosmogenesis – biogenesis – noogenesis – christogenesis" expresses that among universe, life and human life there is continuity, and they would converge in the reality of Jesus Christ. Moreover, the process seems to refer to a hypothetical "omega point", the existence of which is presumed starting precisely from that tendency of "moving towards" that seems to be present in the structure of life.[27] Leaving Teilhard's theory aside, it is interesting to point to the emergence of an integrated view between the "tree of life" and Christology.[28]

27 Cf. NUÑEZ DE CASTRO, I.: The Bio-Philosophy of Teilhard de Chardin. In: DEL RIEGO, H. (ed.): *God Seen by Science : Anthropic Evolution of the Universe*. Madrid : Universidad Pontificia de Comillas, 2008, p. 99–126.

28 Cf. GALLENI, L.: *Darwin, Teilhard de Chardin y los otros : Las tres teorías de la evolución*. Buenos Aires : Epifanía, 2010; GALLENI, L.: Is Biosphere Doing Theology? In: *Zygon*, 36, 2001, 1, p. 33– 48.

2. The *Tree of Life* in Christian aesthetics

Other line for comparison can be established between ToL and the *Tree of Life* used by primitive Christian theology to express the cross of Christ and its irrigation of supernatural life upon nature and human beings. We enter here into a strictly symbolic terrain. This means that semantic understanding along the line becomes diluted not in the metaphorical image but in the real one. It is an aesthetic metaphor. In the Christian tradition, communication of divine life from the mystery of the cross of Christ was illustrated precisely under the image of a tree of life. The apse of the Basilica of St. Clemens in Rome provides an interesting example of this. The cross of Christ fertilises the earth and the different human and religious activities. Thus, both creation and the human world are nourished by the new life transmitted through Christ.

The semantic heterogeneity existing between the graphic of ToL and that of Christian symbolic becomes evident. Anyway, our interest lies in pointing out that in both cases it is understood that there exists some unity in the diversity of what is alive, on the one hand, and that individuals are included (plants, animals, human beings) into the picture, on the other. Each being is, in this way, located within a religious territory. Even though there is a distinction between ecclesiastical and secular work, the incarnation, the plenitude of which is the cross, implies that all that is creature acquire a saintly dimension. The animals themselves are included too, as the Roman mosaic illustrates, in their specific and individual diversity.

3. Theological reflections beyond symbols

The tree of life, as iconic expression of phylogenetics, radically modifies the anthropocentric perception of the phenomenon of life. The human being emerges in a very marginal branch of the phylogenetic history. Recent illustrations have provoked a more humble perception of human being, one that could be equated to that suffered by the Copernican revolution when astronomical maps appeared. The new maps of genes, especially, show the profound genetic nearness to other animals. The tree of life, then, is a perceptible expression of evolutionary biology, and it demands to a certain non anthropocentric vision of the place of the living beings.

Besides, the tree does not allow us to see an end of the process of life. In fact, we know its past but we cannot anticipate its direction or its culmination. We ignore the direction the evolutionary process may be going. It is an open end. Due distance taken, something similar is suggested by biblical genealogies. If we read them from the rest of the New Testament, they seem to point to a mysterious consummation in the Parousia.

Moreover, if we project the image of ToL on the future reality of the Parousia, we should think it not as a situation focused in the human creature, but as a bio- centric and anthropocentric process at the same time. It demands consider the destiny of the physical and spiritual from another perspective.

It will be an event for a whole of creation (biosphere and cosmos), whose human branch is deemed important for certain reasons (mainly because of the incarnation of the Son), not because of its ontological place within the whole of creation.

Is the description of evolution of life a narration of a dramatic process? On the one hand, it is clear that is a narration, because it describes a history of organisms, populations and species along the time. On the other hand, evolution is clearly a dramatic process also, because it includes cruel mechanisms in itself. Anyway, the image of the tree of life allows perceiving the process at a glance, without any complementary explanation. And finally, in the more extended frame of the Revelation, ToL appears as a moment of the history of creation and salvation. The tree is an image of Life in the context of a big history of the action of God in his work.

Conclusion

ToL is the product of a very complex work of empirical researching of biology put into an image. It has different versions, according with the modifications in the understanding of phylogenetics. This image can be read according to the scientific intentionality, i.e., the aim to understand, in an iconic way, the history and connection of living beings.

Anyway, the *Tree of Life* is not an object merely conceptual, but a combination of concept and image: that is its originality. This feature allows practicing a philosophical reading of it, especially from its symbolic dimension.

It is also possible to essay a theological approach to the Tree of Life. Firstly, the biblical genealogies have some aspects in common with the phylogenetic tree: its historicity, some relation with the image (some figurative names, the "figure" of genealogies as an oral or visual text), the sense of continuity in diversity. Secondly, Christian art has also its trees of life, considering Jesus Christ as the true tree of supernatural life for humans and cosmos. This esthetic approximation integrates the whole creation under its perception. Finally, the *Tree of Life* and the genealogies illuminate each other and then they give some integral view of the place of life and of man in creation.

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