

# Creationism or Evolutionism: an Optimistic View of Evolutionism by Teilhard de Chardin

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## Abstract:

When analyzing a reality, it is inevitable that one inquires about its origin. The question of origin is inherent in any comprehensive inquiry into the nature of realities. Up to the scholastic time, not only in religious beliefs but also for scientists and philosophers, *creatio ex nihilo* was an accepted sound and convincing theory to explain the origin of all things. It refers to creation of the entire universe out of nothing: not out of anything pre-existing. Thus creationism supplied a straightforward answer and explanation to the origin of realities.

With the development of science, biblical and religious concept of the God as a creator was replaced by the theory of evolution in the modern era. The rationalistic, mechanistic and atheistic trends and the theory of evolution claimed that everything evolved from matter, even life and consciousness. This gave birth to the fiery debate whether creation or evolution is the valid theory to explain the origin of realities.

There are however those who subscribe to the *raison d'être* for both creationism and evolutionism. Such thinkers were able to reconcile science and religion, faith and reason and did not recognize any contradiction between creationism and evolutionism. Pierre Teilhard de Chardin, a Roman Catholic priest of the Society of Jesus, both a geologist and a paleontologist, is one among those who held this view. He was able to present evolution as not contradicting a creator God, but saw in creationism and evolutionism the same fact of the origin of realities. He was thus able to develop a view which was commensurate with evolutionism which the religious community considered atheistic and heretic. This article therefore analyses this optimistic and wholistic view of evolution developed by Teilhard de Chardin by rationalizing the arguments presented by him for evolutionism versus creationism with an attempt to reconcile the two.

Key Words: *Creatio ex nihilo*; Darwinism; Big Bang; Hominization; Biosphere; Noosphere; Consciousness; Omega; Teleological; Christogenesis; Anthropogenesis;

## Objectives:

To discuss that theory of creation which, up to the scholastic time, was an accepted and established theory to explain the origin of all created beings.

To critically assess the views of the mechanical and evolution theories of the modern times which claimed that life and consciousness evolved from matter.

To elaborate the views of the scholars who have developed arguments to reconcile creationism and evolutionism with special attention to the contributions of Teilhard de Chardin.

To develop the optimistic view of evolution developed by Teilhard de Chardin who saw evolution as not contradicting a creator God, but saw in creationism and evolutionism the same explanation of the origin of realities.

To defend that faith and reason do not contradict each other; that science and religion point in the same direction (or have the same focus) though they differ in their methods and articulation.

## 1. Introduction

It is quite natural that when analyzing a reality the human mind raises the fundamental and essential question about its origin. Man looks at the world and perceives the realities around; there are organic beings like human beings, animals and vegetation; and there are inorganic objects which are material and inanimate in nature which may take the form of solid, liquid or gas. The Human being transcends the world beyond and perceives the realities like the planets or in the Aristotelian terms ‘the heavenly bodies’. By perceiving these, human beings thus gather knowledge about them and through their inquiries and investigations wish to gain further knowledge by making deeper questions. If the human mind wants to understand and align the cause effect relationship for these realities, the fundamental question of their origin must be established. The question of origin is inherent in any comprehensive inquiry into the nature of realities and organisms.<sup>1</sup>

The question of the origin includes two aspects; first is about the origin of the material universe or the inorganic objects and the other is about the origin of the living beings or the organic creatures. Even before the development of science and systematized methodical formulation of knowledge and rational theories, the myths and religions provided a firm answer to this question by accepting the existence of a being beyond the human beings. That is, all the organic and inorganic creatures were created by an intelligent, transcendental and omnipotent being. The researches of Durkheim about the primitive religions is noteworthy here for whom the about said aspects are innate to the very nature of man.<sup>2</sup>

However the study of the origin of realities poses an acute problem, a difficult hurdle to be cleared, since there are no uniform, objective, stable and acceptable solutions proposed thus far. The above said mythological or religious solution is challenged by the scientists who consider that such an explanation is not acceptable to the rational mind with regard to its logic, objectivity and intelligibility; the objection is belief in the existence of the divine being who created everything out of nothing: *creatio ex nihilo*. This presents an insurmountable problem for a non believer who does not accept or believe in a divine or a transcendent or an intelligent being other than the human being.

The rationalistic, mechanistic and atheistic modern trends developed the theory of evolution excluding a creator and giving the realities all freedom to come into existence, survive and develop independently. This is a substitute for the creation theory which claims a rational, logical and intelligible basis for the origin of realities. The claims and counter claims of the explanations result in perennial debates; the difficult point of contention here is the big bang theory and the explanation of the origin of the universe by chance. A simple question that arises to the ordinary human mind based on common sense is how life could originate from matter which is inert, dead and unconscious, whereas life implies something vivacious and spiritual? Further, the Christian scholastic tradition basing itself on the Hellenistic philosophy affirmed the existence of three types of souls in organisms: vegetation with a vegetative soul, animals with vegetative and sensitive souls and humans with vegetative,

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<sup>1</sup> H. Jonas, (2001), *The Phenomenon of Life: Toward a Philosophical Biology*, Evanston: Northwestern University Press, 37.

<sup>2</sup> Robert Alun Jones, (1986), *Emile Durkheim: An Introduction to Four Major Works*. Beverly Hills: Sage Publications, 119.

sensitive and rational souls.<sup>3</sup> In an attempt to explain the origin of realities, the difficulty is also the need to explain the origin of the soul which is a spiritual concept. Even though the ultimate nature of this principle and its origin is not fully explored even by religious and philosophical trends, it is clear that it cannot have its origin from matter because it is essentially spiritual. Therefore there is a need to admit that the soul or spiritual aspect of the organism should have its origin through the action of an intelligent being referred to as God.<sup>4</sup> Scientists, however contest this view as illogical and unintelligible. At the same time the religious tenets who advocate the creation theory on the other hand claim that the scientists are not united in their alternative theory for creation. Crick says that the justification of the scientists for the origin of realities has produced more theories than facts.<sup>5</sup> In short, the doctrine of creationism upheld by religions and philosophical trends accuse evolutionism as incompatible to explain the origin of realities and evolutionism advocated by the scientists challenges creationism as illogical and unintelligible. This gave birth to a fiery debate as to whether creation or evolution is the valid theory to explain the origin of realities.

This impasse therefore justifies the need for a deeper study of both creationism and evolutionism. There is a need for a middle theory to eradicate the extreme aspects of both theories and to promote an a more harmonious view which in reality would demonstrate that creationism and evolutionism do not contradict each other, but express the same fact with different perspectives. An uncritical acceptance of the theory of evolution would ignore the existence of God and the unquestioning adherence to the traditional creation theory would challenge science and rational human thinking. The debate between creation and evolution has become a dispute between faith and reason; a question whether the religion or the science provides the proper solution.

There are however those who could see the *raison d'être* in both creationism and evolutionism.<sup>6</sup> They were able to reconcile faith and reason and did not see the existence of any contradiction between creationism and evolutionism. Pierre Teilhard de Chardin, a Roman Catholic priest of the Society of Jesus, who was a geologist and a paleontologist, is one among those thinkers. He was able to present evolution as not contradicting a creator God, but recognised in creationism and evolutionism the same fact of the explanation of the origin of realities. Thus he was able to develop an optimistic and a more helpful explicable view of evolution which was seen by the religions authorities of that time as heresy or abomination. This article therefore does an in depth analysis of the fundamentals of creation and evolution as postulated by Teilhard de Chardin with an attempt to reach a more logical and unifying conclusion.

## 2. Theory of Creation

Up to the scholastic time, not only for those with religious beliefs but also for scientists and philosophers, creationism was an accepted and logical means to explain the origin of all the created beings. God was seen as the creator of everything material and spiritual; inorganic and organic. The Abrahamic religions affirm in their scriptures that the

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<sup>3</sup> Aristotle, *On the Soul*, III, 7,431<sup>a</sup>-431<sup>b</sup>, in *The Complete works of Aristotle*, ed., Jonathan Barnes, (1984), 2 vols. vol. I, New Jersey: Princeton University Press, 685-686.

<sup>4</sup> B. Mondin, (1991), *Philosophical Anthropology: Man an Impossible Project*, Bangalore: Theological Publications in India, 41.

<sup>5</sup> Francis Crick, (1966), *Of Molecules and Men*, Seattle: University of Washington Press, 70.

<sup>6</sup> Pierre Teilhard de Chardin and Hans Jonas are some of the important critics of evolutionism. They wanted to combine creationism and evolutionism and tried to see optimism in evolution. This article concentrates on Teilhard de Chardin's contribution for an optimistic view of evolution.

almighty God created everything out of nothing (*Creatio ex nihilo*) over six days.<sup>7</sup> Indeed all the religions shared this view each in their own way which was adopted as an article of faith, strongly formulated in their sacred books and accepted in their theological teaching. Thus creationism provided a ready explanation for any inquires about the origin of realities till 1859 in which year Charles Darwin published the “Origin of Species” which provided a scientific explanation for the origin of realities, challenging the theory of creation.

## 2.1 Biblical Account of Creation

Torah which is a sacred authoritative text for Judaism and Christianity is the chief proponent and defender of creationism. The first book of Torah, the book of Genesis records that the world and everything contained in it were created by God. ‘Genesis’ means the ‘origin’. The Biblical account of creation in Genesis proclaims God to be the source and maker of all things. The creation story begins with the claim that nothing existed before God’s act of creation except God himself. The beginning of the book of Genesis narrates how God created the earth literally within a period of six days: light on the first day, the sky and air on the second day, land and plants on the third day, the sun and moon on the fourth day, birds and water animals on the fifth day and animals and man on the sixth day. God then called creation good and rested on the seventh day. This is a summary of the Biblical account of creation.

There are two parallel accounts of the creation in the Book of Genesis. The first account is in Genesis 1:1-2:3; the second account follows in Genesis 2:4-3:25. While both accounts affirm that God created the earth and everything contained in it, the details in their narration differ. The first account affirms that God created the animals before man (Genesis 1:24-26) and created man and woman at the same time (Genesis 1:27), while the second account affirms that he created the animals after man (Genesis 2:18-19) and created man first (Genesis 2:7) and woman later (Genesis 2:21-23).<sup>8</sup>

There are some who believe literally in the accounts of creation as contained in the Bible. But there are others who believe that the Biblical account of creation is the expression of the fundamental truth, that God created all that exists, but do not contribute to the literal belief in the narrative. For an example, the six day narrative of creation is not to be interpreted as a day with 24 hours as we understand it. It is entirely possible that ‘a day’ was a figure of speech: the term ‘day’ could designate various periods of time or periods of unspecified length. However, when taking into consideration the whole narrative of the creation story certain essential features of evolution could be incorporated: that God is the uncreated creator who created everything *ex nihilo*; that everything was created in time and there is no possibility for anything to exist previously other than God; that man is the last to be created in the line of creation, the epitome of creation, given that everything was prepared gradually for his arrival.

## 2.2 Types of Creationism

Basing on the Biblical account of creation there are various types of creation theories.

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<sup>7</sup> Soskice, M. Janet, (2010), “Creatio ex nihilo: its Jewish and Christian foundations”, in R. William, ed., *Creation and the God of Abraham*, Cambridge: Cambridge University Press, 15.

<sup>8</sup> The Biblical scholars give varied explanations for the question, why are there two accounts of creation in the same book of Torah? Different traditions involved in the formation of Torah, varied literary genres, authors’ intention and context of the narration can be given as some of the reasons for the diverse explanations and emphases.

### **2.2.1 Young Earth Creationism**

There is one view that God created the world within the last ten thousand years, literally as described in the Biblical account of creation.<sup>9</sup> The literal and historical interpretation of Genesis is that the six days of creation means six days each of 24 hours.<sup>10</sup> This doctrine also asserts that God created the world with its full form of maturation just as he probably created Adam as a mature man, not an infant.

### **2.2.2 Old Earth Creationism**

A further belief advocates a literal interpretation of the Genesis account, but it interprets the word ‘day’ to be an era or some other kind of longer period of time which means, that each day signifies an epoch of time. It also affirms that God supernaturally created the universe out of nothing, but the creation event described in the book of Genesis is to be taken figuratively. Old Earth creationism itself comes in at least three types; *Gap creationism* holds that life was recently created on the pre-existing earth, which means, God created the universe long time ago and life was created later after a time lapse; *Day age creationism* states that the ‘six days’ in the book of Genesis do not refer to the 24 hour day, but rather much longer periods. This version of creationism often states that the Hebrew word ‘yôm’ found in the book of Genesis has to be interpreted as ‘age’; *Progressive creationism* holds that species have changed or evolved in a process continuously guided by God, which means it is God who directly intervened in the progressive changes in the development of natural order of the world history.

### **2.2.3 Allegorical Approaches to Creationism**

There is an allegorical approach to creationism prevalent among some Christians. It is also viewed a non literalist approach to the Bible. Day age creationism could fit into this category as well. In this approach the Bible is a scriptural book of religion expressing the deep faith life of a people and therefore not intended to be read as either historic or a scientific account/document.<sup>11</sup> Among those who accept this approach there are some who are referred to as ‘evolutionary creationists’ or ‘theistic evolutionists’. They believe that God created the world with the potential for life which has to appear eventually as a consequence of natural processes.

### **2.2.4 Philosophical Creationism**

The philosophical creationism is primarily based on principle of efficient causality. Efficient cause is the one that produces an effect or gives being to something. Here the difference between the causality of God and the causality of creatures should be recognized and differentiated. The creatures also cause other things or produce beings. In creationism causality of God is highlighted rather than the causality of creatures. “Creation is the total

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<sup>9</sup> Young Earth creationists reject evolution theories in order to maintain a literal interpretation of biblical passages. Other Christians called ‘progressive creationists’ accept the scientific evidence for some evolution over a long history of the earth, but also insist that God must have performed some miracles during that history to create new life-forms. Y. Stewart, Melville, ed., (2010), *Science and Religion in Dialogue*, Malden: Wiley-Blackwell, 168.

<sup>10</sup> Hugh Ross, (2004), *A Matter of Days: Resolving a Creation Controversy*, Colorado: Colorado Springs, 51-57.

<sup>11</sup> V. S. Poythress, (2013), *Christian Interpretations of Genesis 1*, Philadelphia: Westminster Seminary Press, 17.

production of being: the effect of the absolutely first and total cause of the *esse*. On the other hand, the causality of creatures is not creative, since it only transforms things into other things: they produce the becoming of things, not the *esse* of things. When we produce or cause, we transform; God creates.”<sup>12</sup>

Thus creationism asserts principally *ex nihilo*, that is “the fashioning of the cosmos out of a pre existing indeterminate stuff by some divine being or principle.”<sup>13</sup> Therefore philosophical creationism affirms a creator God who is the efficient cause of the universe. “To create is proper and exclusive of God, since ‘to create’ means to give the *esse*.”<sup>14</sup> Philosophically this creator God is called the intelligent designer. This means the features of the universe and of living things are best explained by an intelligent cause, not by chance or by natural selection.<sup>15</sup>

On the whole, though creationism is fundamentally religious and philosophical, up to now this traditional explanation is maintained for the origin of realities. Even the scientists who were in favour of evolution have proposed the plausible reasons to support creationism.<sup>16</sup> There are many organizations which support creationism worldwide: American Scientific Affiliation, Christians in Science, Creation Ministries International, Creation Research Society, Institute for Creation Research, Old Earth Ministries, Access Research Network, Centre for Intelligent Design, Center for Science and Culture, Discovery Institute and Bio Logos Foundation are some of such organizations functioning throughout the world to support creationism, to safeguard the concept of creator God and the teleological aspect of the created realities.

### 3. Evolutionism

The traditional religious beliefs promoted creationism as a valid explanation for the origin of all realities. However, this effortless and uncomplicated explanation could no longer be continued with the advent of rationalistic trends of modern science. The seventeenth century brought changes in the theistic beliefs about the origin of realities: the biblical and religious concept of the God as a creator was replaced by the physical and mechanical theories of modern times. The classical concept of God as the unmoved mover (*quid quid movetur ab alio movetur*) was replaced in the milieu of the mechanistic theories with the concept of God as an initial mover ‘who had imparted a fixed momentum in the past’.<sup>17</sup> With these initial mover theories, mechanistic philosophy raised questions about the origin of the realities which it began to explain or analyze mechanically and this was later well formulated in evolution theories.

Etymologically the term evolution from the Latin word *volvere* means to turn or to change. With the prefix ‘e’ added, evolution means a turning out from, an unfolding or becoming. The origin of the evolutionary idea had its inception with the Greeks, the first writers being Anaximander and Empedocles. The proposal that one type of organism could descend from another type goes back to Empedocles (492 BC) who is regarded as the father of evolution as he was the first to show the possibility of the origin of the fittest forms

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<sup>12</sup> Joseph De Torre, (1981), *Christian Philosophy*, Philippines: Vera-Reyes, 112.

<sup>13</sup> Kwasi Wredu, (1995), “Creation”, in *The Oxford Companion to Philosophy*, Ted Honderich, ed., Oxford: The Oxford University Press, 170.

<sup>14</sup> Joseph De Torre, (1981), *Christian Philosophy*, 154.

<sup>15</sup> It is promoted mainly in North America. It is a form of progressive creation. The Christians called ‘theistic evolutionists’ or ‘evolutionary creationists’ assert that the scientific theory of evolution and the religious beliefs of Christianity can both be true. Y. Stewart, Melville, ed., *Science and Religion in Dialogue*, 164.

<sup>16</sup> Max Scheler, (1961), “Attempts for a Philosophy of Life”, in *Man’s Place in Nature*, tr., Hans Meyerhoff, New York: Noonday, 65.

<sup>17</sup> H. Jonas, (2001), *The Phenomenon of Life*, 38.

through chance rather than through design.<sup>18</sup> From Empedocles, the idea of evolution has gone through various interpretations which were mostly philosophical. The mechanistic theories of the seventeenth century used the idea of evolution for the origin of cosmic systems and in the nineteenth century the theories of evolution were used to explain the origin of organisms. According to Richard Swann Lull, “evolution is the gradual development from the simple unorganized condition of primal matter to the complex structure of the physical universe; and in like manner, from the beginning of organic life on the habitable planet, a gradual unfolding and branching out into all the varied forms of beings which constitute the animal and plant kingdoms.”<sup>19</sup>

Evolution can be seen in the original and literal senses: the original sense signifies the phenomenon of individual genesis and the literal sense presupposes the existence of species. Among these two senses of evolution, the original concept of evolution affirms that, life is seen as existing in matter, progressively setting its own conditions for the mechanical play of variations.<sup>20</sup> Thus evolution affirms the importance of matter to life and life is contained in matter. In other words, evolution in the modern sense supports the materialistic monistic concept of science which affirms that the living kingdom was produced by or from matter. But the basic question here is, as evolution theories hold, can matter give rise to life?

Generally in evolutionism, Darwinism is used to explain the origin of organic systems and the big bang theory proposed by Georges Lemaître is used to explain the ‘cosmic evolutionism’ or the origin of the inorganic systems of the universe. Some critics of evolutionism assert that the traditional cause and effect theory can be accepted with regard to the evolution of the inorganic systems, because in any origin, the effect must be in the same order of its cause. But in the organic kingdom, the cause is inferior to its effect because the effects in the series of the genetic outcome are more complex, qualitatively higher and more refined. So in the evolution of the organisms contrary to what the mechanistic theories have proposed has taken place; from the simple, less perfect and crude causes have come the complex, qualitatively advanced and superior effects.<sup>21</sup>

### 3.1 Evolution Theories for the Origin of Realities

René Descartes in modern times presented animal bodies as machines which have a mechanistic rule within them, but do not have intelligence and purposiveness. Though the function and structure of the animal bodies resemble the performance of a machine, their structure demonstrates the functions of a living thing.<sup>22</sup> Evolutionism considers this structure itself as a product of life which is a continuous dynamism. Therefore evolutionism becomes one of the most far reaching discoveries with regard to the nature of life.

The nineteenth century evolution theories affirmed the concept of life as central to organisms and the descent of man as a superior organism only through an accidental process of evolution. Perfection, according to the evolution theories, is not intrinsic in nature but is an accidental outcome of life.<sup>23</sup> In this sense life too is an accidental outcome of chance and mere biological processes. Thus life has the character of contingency and evolution asserts that the human being has descended from animals or lower forms of life. Accordingly there is

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<sup>18</sup> Schofield Malcolm, (1983), *The Pre-Socratic Philosophers: A Critical History with a Selection of Texts*, Cambridge: Cambridge University Press, 132.

<sup>19</sup> Richard Swann Lull, (1976), *Organic Evolution*, Delhi: Seema Publications, 6.

<sup>20</sup> H. Jonas, (2001), *The Phenomenon of Life*, 44.

<sup>21</sup> *Ibid.*, 41.

<sup>22</sup> *Ibid.*, 42.

<sup>23</sup> Teilhard de Chardin, (1959), *The Phenomenon of Man*, tr., Bernard Wall, London: William Collins Sons, 151.

a genealogy in life forms, from lower to the higher, from the simplest to the complex.<sup>24</sup> Even the Aristotelian biological hierarchy of souls, from vegetation to rational soul, has an evolutionary model; it can be noted that what is last in the evolutionary processes, that is the human life, is affirmed as the highest in the Aristotelian order of souls. The same is affirmed by the evolution theories as well. In short evolution in general terms is a “way irreversible process in time, which during its course generates novelty, diversity, and higher levels of organization. It operates in all sectors of the phenomenal universe but has been most fully described and analyzed in the biological sector.”<sup>25</sup>

### 3.1.1 Darwinism

Modern times witnessed the publication of many books on the history and origin of organisms especially about man and all of which make reference to Charles Darwin (1809 - 1882) either positively or critically. Darwin’s intellectual heritage is universally applicable but its legacy remains sometimes controversial. His evolution theory, which appeared in *Origin of Species* (1859), posited that all species, including man, are descended from other species. From the variety of species nature selects the fittest to survive and bear offspring; in other words, all life and organic species evolved from a common origin via genetic and behavioral variation and natural selection.

Darwinism was undoubtedly a major basis for evolutionism. This was a controversial thesis to those who believed in the biblical creation theory. When this publication became popular the religious circles immediately condemned it, as time went by however some thinkers who analyzed Darwinism and raised the possibility of whether a creator God could be consistent and incorporated with Darwinism. Some even considered that even religion could be accommodated within Darwinism.<sup>26</sup>

Among other evolution theories Darwinism made a landmark for its systematic explanation for the origin of species. Darwin credited the material nature with the generation of life forms and paved the way for the elimination of dualism and an establishment of a monistic concept. Thus the metaphysical dualism of mind and matter in the organisms is taken away in Darwinism and the unity of the organism which is an essential combination of matter and mind is emphasized.<sup>27</sup> Darwinism also places the human being in lines of common descent from a variety of different life forms and makes an effort to relate all forms of earthly life. Natural history, according to Darwinism, is explained in terms of a mechanistic process in which higher and more complex species resulted from utterly contingent alterations in lower forms.<sup>28</sup> It evokes the mechanism of natural selection and provides a naturalistic explanation of how the various forms of organic life in the ascending order of plants to animals, from lower to higher organisms evolved through time. By doing so, it explains the appearance of a *telos* or design in the organisms which was seen by religions as the fulfilment of a divine purpose, but in Darwinism in terms of chance and mutation.

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<sup>24</sup> H. Jonas, (2001), *The Phenomenon of Life*, 57. *The Phenomenon of Man* is one of the most important works of Teilhard. The Roman Catholic authorities never approved this work during his life time. This book brings out clearly his views of creative evolution, man’s place in the universe and the teleological nature of evolution. It is called as the crux of Teilhard’s thought. He develops the perspectives of biological evolution to cosmic proportions, proportions that would include the past and the future, the sub-human and the human, the individual and the social. Bernard Delfgauw, (1961), *Evolution*, tr., Hubert Hoskins, London: William Collins Sons, 19.

<sup>25</sup> Henry Kenney, (1970), *A Path through Teilhard’s Phenomenon*, Ohio: Pflaum Press, 22.

<sup>26</sup> M. Grene - D. David, (2004), *The Philosophy of Biology: An Episodic History*, New York: Cambridge University Press, 193.

<sup>27</sup> Teilhard de Chardin, (1959), *The Phenomenon of Man*, 79.

<sup>28</sup> Idem. (1968), *Writings in Time of War*, tr., René Hague, London: William Collins Sons, 19.



Darwinism understands nature in terms of chance, natural selection and diversity. It sees that there is always an action and reaction between organism and environment. The chance and mutation are on the part of the organism and natural selection is on the part of the environment. According to Darwin, the mutations of a species are transmitted to the offspring aided by sexual selection. Heredity is transmitted through gene system. Thus Darwinism gave impetus even for the modern genetic researches.

### 3.1.2 The Big Bang

In 1927 George Lemaître a Catholic Priest from Belgium, proposed the beginning of the cosmos by a Big Bang. The beginning of the universe is explained by cosmologists through this theory. The time of Big Bang was the point of the beginning of time for the universe and its creatures. Accordingly a rough calculation would show that time is equal to 13.7 billion years (Time = 13.7 Billion).

The term Big Bang generally refers to the idea that the universe has expanded from a primordial hot and dense initial state at some finite time in the past, and continues to expand to this day. The theory bases itself on three evidences: the expansion of the universe, the cosmic microwave background radiation and the primordial abundance of elements. Such an expansion began by a reason which is not known, may be an accident or a chance. The initial stuff was a highly dense and hot tiny particle. The expansion continues even today creating new galaxies and with the most distant galaxies (quasars) expanding faster than nearby galaxies. This tiny particle is considered by the contemporary scientist as the God particle which was responsible for the origin of the cosmos.<sup>29</sup>

## 3.2 Creationism Versus Evolutionism

Creationism, strictly speaking, is a religious or philosophical doctrine which attributes God or some supernatural force being responsible for the origin of the universe and the organisms and life therein. Evolutionism is a theory which claims that the change that occurred during the long history of the universe through a natural process by which species developed as a consequence of natural selection, and with survival have become multiple descendant and independent species. While creationism gives a unique and singular explanation for the origin of realities, evolutionism puts forward varied theories. For example, 'Big Bang' explains the cosmic evolutionism and 'Darwinism' upholds organic evolutionism.

Since creationism and evolutionism, though two diverse theories, explain one and the same phenomenon, it seems futile to continue to find out which of these two is correct. Therefore, there is an attempt to find a common ground or to merge them into one or to abandon one for the other by many scientists and theologians over centuries, since no one can objectively prove the *creatio ex nihilo* by God or the Big Bang and the natural selection. Some of these efforts have resulted in the so called synergized explanation for the origin of

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<sup>29</sup>There are different interpretations of God particle. What was found in the CERNE experiment is referred by Higgs Boson as the God particle. It is a sub atomic particle which explains the energy and mass in the universe. An experiment was initiated by the scientists from 39 countries and 169 organizations from worldwide, to find this particle. It was named as the CERN's accelerator complex which started on the 10<sup>th</sup> of September 2008 and completed on the 04<sup>th</sup> of July 2012. The Large Hadron Collider (LHC) was the world's largest and most powerful particle accelerator used for this experiment which consisted of 27 kilometers ring in 100 meters depth of superconducting magnets with a number of accelerating structures to boost the energy of the particles along the way. Fabiola Gianotti, an Italian physicist was the chief in this experiment. At the end of the experiment, they were able to find the nature of the primordial, tiny, dense and hot particle which would have been responsible for the origin of the cosmos.

realities, namely evolutionary creationism or theistic evolutionism. This may be viewed as a middle theory or an optimistic view.

Such a consensus view brought about an integrated view of creationism and evolutionism which follows a middle path between the concept of the origin of realities and organisms by direct creation on the part of God and the contrary view that their origin is by spontaneous generation, mutation and natural selection. Many Christian scientists and philosophers share this view and through their collaborative researches the theory of 'programmed evolution' has been formulated which is widely gaining acceptance today in intellectual and academic circles. According to this theory, evolution is achieved through a programme designed by God who instituted that at some point in time matter originated from some forces from which life originated.<sup>30</sup> Philosophically and logically this is a feasible explanation since it accepts the principle of causality, that every effect must have a proportionate cause and God is the prime mover. This theory also inherently accepts that God would have created the prototype or the archetypes of realities and organisms and through them different species would have descended through the process of evolution.

The theory of programmed evolution analyzes in a coherent way the explanation given by some material scientists that the realities and organisms originated from matter. G. Ludwig observes that "it is scientifically reasonable to imagine that even the birth of the living beings occurred from inanimate matter, if it is done according to the complete principles of the organic order."<sup>31</sup> Further this theory accepts the marvelous order which is obviously present everywhere and thereby adheres to creationism.

The debate between creationism and evolutionism is also seen today as a debate between religion and science because creation is religious and evolution is scientific. Those who pledge to the theory of creation surrender to their faith and those who accept the theory of evolution recourse to empirical observation and thus only to reason. An extremist view may creep in here to call the former as theists and the latter as atheists, which is fanatical and unrealistic. There are some thinkers who adopt a divergent approach to science and religion. However, there is a wholistic understanding that faith and reason cannot contradict each other, and that they rather complement each other. Such an integrated approach to religion and science and to faith and reason is essential to have a wholistic understanding of creationism and evolutionism.

Some thinkers during the 20<sup>th</sup> century explored whether a creator God would be compatible with Darwinism. They arrived at the conclusion that even religious views of creation would be consistent with Darwinism as long as a creator God is accepted. As Henri de Lubac observed, Christianity and evolution are not two irreconcilable visions, but two perspectives destined to fit together and complement each other.<sup>32</sup>

Among the many proposals to make an intellectual compromise between the seemingly contradicting theories, the view of evolution developed by Teilhard de Chardin becomes an ideological pedestal to verify that faith and reason by virtue of their fact that they both originate in God and cannot contradict each other and that science and religion go on the same direction and have a common focus though they differ in their approach and articulation.<sup>33</sup>

**(To be continued in the next issue in December 2018)**

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<sup>30</sup> B. Mondin, (1991), *Philosophical Anthropology*, 48.

<sup>31</sup> G. Ludwig, *Science of Nature and a Christian Vision of the World*, quoted in B. Mondin, (1991), *Philosophical Anthropology*, 48.

<sup>32</sup> Henri de Lubac, (1968), *Teilhard Explained*, tr., Anthony Buono, New York: Paulist Press, 61.

<sup>33</sup> Anthony Hanson, ed., (1970), *Teilhard Reassessed*, London: Longman and Todd, 159.