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Metaphysics of cosmological models

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This article aims to address the metaphysical dimension of cosmological models, be they mythological, philosophical, religious or modern scientific models, using multidisciplinary and transdisciplinary methodology. Such an approach is a novelty, both in the theological field and in the philosophical field and secular sciences, which studies the origin of humans and the universe.

Contribution: The originality of this article consists in introducing the concept of transcendental cosmology, which, along with spiritual cosmology, can be a serious theological and philosophical reply to the Bing Bang theory.

Keywords: metaphysics; cosmological models; transcendental cosmology; Bing Bang theory; transdisciplinary methodology; patristic cosmology.

Introduction

Ever since acquiring self-consciousness, human beings have begun to wonder about the origin of the universe and its condition. Questions such as the following crossed the mind of any human being with a minimum of intelligence and sensitivity: Who made the cosmos? Who made us? Is there a personal God? If so, who made him? How was the universe created? Is the universe infinite or finite? Is there extraterrestrial life? Thus arose mythological conceptions of the world, ancient philosophical conceptions, religious conceptions, modern philosophical systems, scientific cosmological theories, astrophysics, astronomy, and so on. Therefore, in addition to the rational effort of human beings to decipher the mystery of the birth of the universe according to religious dogmas, certain revelatory moments took place in history, when the cognitive initiative came from the divinity which revealed certain things about the origin of creation in a supernatural way.

While Christian theologians claim the existence of a personal, creative and providential God who made, out of nothing, the universe and human beings, body and soul, a part of the scientific community believes that the ideas of divinity and soul are mere myths, conjured up in the pre-scientific age. In other words, there is no reality other than the physical, visible, quantifiable one, which has the capacity to organise itself.

However, the questions remain open, and at a certain point, the scientific-type cosmological discourse involuntarily slips into metaphysics. The scientist, the cosmologist, the physicist and the astrophysicist can each analyse everything up to the 'Plank Wall', that is, up to 10^{-43} s. Is it impossible then to explain what was before this explosion: chaos, quantum vacuum, energy mass? True, scientific cosmology tells us that it is absurd to ask what was before the Big Bang, since time came into being through this singularity. The observation is as logical as possible, if we refer to the empirical dimension of time. But if we approach the problem of temporality and creation from a metaphysical, transcendental, archetypal perspective, such a question becomes legitimate.

The intention of this study is to confront philosophical cosmology, mythological and religious conceptions of the world, with the data of modern scientific cosmology, using the pluri-interdisciplinary and transdisciplinary methodology.

Religious cosmological models

Mosaic cosmology

The first book of the Old Testament, Genesis, describes how God created the spiritual world, the angelic realm and the physical world: the cosmos, plants, animals and human beings.

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The process of cosmic creation lasted six days, and on the seventh day God rested.

On the first day, God created light, a form of light different from the sunlight that He made on the fourth day. On the second day, he created the sky. On the third day, he created the earth, the plants and trees. And on the fourth day, he created the sun, moon and stars. On the fifth day, God created the animals of the sea and the birds of the air. And on the sixth day, he created the living creatures of the earth and human beings in his image and likeness. Then, from the rib of the first man, God fashioned Eve, placing the primordial couple in the Garden of Eden (Gn 2:15–25).

Kabbalah, with its two parts, Maaseh Bereshith, dedicated to the first chapter of Genesis and Maaseh Merkavah, which examines the first chapter of Ezekiel, focusses more on the mystical meanings of creation.

Buddhist cosmology

Early Buddhism did not have an articulated cosmology because Buddha considered that answers to questions about the origin of the universe, human beings, etc., are not necessary for salvation. When asked such questions, Siddhartha smiled, and hence Buddha's famous laugh.

Later, however, a cosmological conception emerged in the Buddhist tradition. The universe has neither a beginning nor an end, which means that there is no creative deity (Harvey 2013:36–38). The endless cycle of life, death and rebirth is called *Saṃsāra*. There are five realms through which the so-called Wheel of Existence (*Bhavacakra*) is recycled. These are hells (*niraya*), hungry ghosts (*pretas*), animals (*tiryak*), people (*manushya*) and gods (*devas*). Later, the sixth realm was added, represented by the demigods (*asuras*) (Wilson 2010).

These cosmological realms are interconnected. Because of ignorance, desire and unethical deeds, human beings go through these cycles until they manage to free themselves, reaching Nirvana.

Islamic cosmology

The Creator of the universe and of human beings is Allah, as it is said in the Qur'an: 'Allah is the Creator of all things and He is the One, the Supreme' (Qur'an, 13:16).

The Muslim thinker Nasir Khusraw states that the creation of the world takes place in six cycles, which are initiated by the arrival of God's messengers (ṣāḥibān-i adwār). This will culminate in the coming of the Lord of the Resurrection (Qāʾim al-Qiyāma), and will represent the seventh day, the time when the world will come out of ignorance (Virani 2005:74–83).

In the Qur'an, the genesis of the world lasted seven days, because Allah, unlike the Christian God, did not rest. In the beginning, Allah created the nine heavens, the earth and its layers (*tabaquat*), the sun, the moon, the first humans, Adam and Eve, but also Iblis, the demon who tempted them. From the clay that remained after Adam's creation, he made animals, birds and fish. Also in the beginning, Allah made the throne (*kursi*), 'the well-preserved book' [*lauh al-mahfuz*], the vault of heaven [*arş*], the eternal fire [*nar*] and paradise with the 12 gates.

Patristic cosmology

The Holy Fathers of the Eastern Church, who consecrated systematic exegesis to the biblical account of creation – St. Basil the Great, St. John Chrysostom, St. Gregory of Nyssa, St. Gregory the Theologian, St. Ephrem the Syrian, St. John of Damascus, etc. – state that God created human beings and the cosmos as their own habitat, to enter into communion with him, to share his infinite love. Patristic authors generally affirm the creation of the world out of nothing, the usual chronological status of the six days of creation, the unchangeability of species, the throwing of human beings into a corrupt natural environment as a result of disobedience to the divine command, the appearance of disease and suffering culminating in physical death, death as a punishment for disobeying the divine command, placing the earth at the centre of the universe, and so on.

The Bible is not a scientific work, just as biology does not act within a revealed, infallible logic. Creation is not only chemistry, but also not only spirit. This is why not only scientists but also theologians, patristic authors, have erred in explaining cosmology. St. John Chrysostom states in his writings that God made the world in six days, literally, that is, a day being the succession of 24 hours; that Adam was actually made of dust; that Eve was actually made of Adam's rib; and that the serpent was the physical serpent through which the devil spoke. Therefore, this well-known patristic author does not appeal to allegory when commenting on the Book of Genesis:

> Not to believe in the contents of Sacred Scripture, and introduce instead other views from one's own reasoning, is in my opinion to bring great peril to those rash enough to attempt it. (Chrysostom 1986:152)

Patristic cosmology emphasises the continuity of the creative process that begins with proto-creation and ends with the arrival of the eschatological moment, when God will restore the entire cosmos, as stated in Revelation (21:1–4).

Scientific cosmological models

A brief history of scientific cosmological models

The geocentric model dominated the thinking of ancient civilisations such as the Jews, Greeks, Romans, Babylonians, Egyptians and Persians. This cosmological paradigm was supported by great philosophers such as Thales, Anaximander, Anaximenes, Pythagoras, Plato, Aristotle and later by the fathers of the Eastern Church such as St. Basil the Great, St. John Chrysostom, Lactantius and Jerome. The Greek

astronomer and mathematician Aristarchus of Samos (b. 310 BC), trying to calculate the distance from Earth to the Sun, came to the conclusion that the Earth revolves around the Sun. However, the geocentric model is imposed especially by the publication in 150 AD of the work *Megiste Syntaxis* (Great Treatise) also known as Almagesta, by the Greek astronomer and mathematician Klaudios Ptolemaios (about 87 AD) in which he rejects the idea of a heliocentric universe, previously set forth in the works of Aristarchus of Samos and Seleukos. This concept dominated throughout the medieval period. At the same time, there were voices that doubted this theory, such as King Alfonso X of Castile (b. 1221), French philosopher Nicolas Oresme (b. 1323), adviser to King Charles V of France, and philosopher and theologian Nicolae Cusanus (b. 1401). The Ptolemaic theory was abandoned in the 16th century, when the priest, mathematician and astronomer Nicolaus Copernicus developed a mathematical model of the heliocentric system, which was later confirmed and completed by the German astronomer Johannes Kepler (b. 1571).

Until the beginning of the 19th century, it was believed that the planet was shaped by catastrophic events, that is, earthquakes, comets and volcanic eruptions. This contributed to the development of the idea of Big Bang (Singh 2012:37), given the evolutionary, changing and finite character of the universe. Another vision of this period was the uniformist one, according to which the Earth was shaped by gradual and uniform transformations. This theory generated the idea of an eternal, static, unchanging universe. At the beginning of the 20th century, the need for a cosmological model of the universe was imposed. But this had to answer a few questions: what substance does the universe consist of? What is gravity and how does it act? What are space and time? What is the nature of the speed of light, infinite or finite? In 1878, the American astronomer Albert Abraham Michelson measured the speed of light at 299 910 km/s ± 60 km/s. This was followed by the Michelson–Morley experiment, which found that light propagates through a vacuum and not through that 'luminous ether', and then by Einstein's special theory of relativity in 1905, which changed Newton's perception of time, demonstrating the existence of the space-time continuum.

Starting from the General Theory of Relativity, without the cosmological constant, which Einstein later gave up, the astronomer and mathematician Alexandr Alexandrovici Friedman developed three models of the universe, depending on the speed with which the expansion of the universe began, the average density of the universe and the interaction of matter with gravity. The third model took into account the idea that if the average density is at an average level, this leads to a small expansion of the universe (Barrow 2007:33). Through these re-interpretations of the General Theory of Relativity, Friedman anticipated the expansion of the universe, as evidenced in 1929 by Hubble. Finally, the Belgian priest and physicist Georges Henri Lemaître spoke of the 'cosmic egg that explodes at the moment of creation', of a primordial atom of small dimensions which disintegrated, thus generating the energy responsible for the expansion of the universe.

Ralpf Appher, together with the physicist Robert C. Herman, predicted since 1948 the existence of cosmic background radiation, advanced by the proponents of the Big Bang model, which in their opinion should have a temperature of 5° Kelvin and a wavelength of one thousandth of a millimetre (Barrow 2007:25). This was proven true in 1964, when Arno Allan Penzias and Robert Wilson, unaware of the prediction of the aforementioned, discovered such cosmic background radiation, which had exactly the predicted wavelength. This was the proof that definitively imposed the Big Bang model.

Contemporary cosmological models

Big Bang theory

The standard cosmological model, represented by the Big Bang theory, starts from the idea that the universe appeared about 13.8 billion years ago following a primordial singularity, at which point an incandescent and dense particle exploded.

The scientific basis of this theory is supported by the following arguments: the age of old stars being 12–13.2 billion years, which corresponds to the age of the universe; the separation of galaxies from other galaxies at a rate that increases as they move farther away from Earth, suggesting that galaxies were initially grouped into a single region of space; the presence of background radiation throughout the universe; and the fact that, in this background cosmic radiation, a model capable of confirming the existence of gravitational waves involved in the rapid expansion of the universe was identified.

The Big Bang cosmological model, called the standard model of cosmology, is parameterised in the formula lambda cold dark matter (ΛCDM) or lambda-CDM, which shows that in this singularity the universe contains three components: a cosmological constant denoted by the Greek letter lambda (Λ), associated with dark energy; cold dark matter (abbreviated CDM) and ordinary matter.

Extensions of the conventional Big Bang model

The Big Bang model also has some scientific limitations because beyond this singularity we can no longer operate with our current mathematical model of space-time. Also, the Big Bang theory cannot approximate the extent to which the universe will expand; it cannot explain the flat shape of space or the uniformity of cosmic background radiation. Therefore, despite the popularity of the Big Bang theory, scientists over the years have proposed not only extensions of this conventional model, but also alternative cosmological models.[1]

1.See https://www.space.com/24781-big-bang-theory-alternatives-infographic.html; https://listverse.com/2015/12/27/10-alternatives-to-the-conventional-big-bang-theory.

The model of eternal inflation

To try to scientifically justify the genesis of galaxies, which is difficult to explain by the Big Bang theory, the American physicist and cosmologist Alan Guth introduced the term 'cosmic inflation' in 1980. He states that before the moment 10^{-32} s there was an expansion of space by a speed that exceeded the speed of light. According to this cosmological model, the Big Bang would have been only the end of the inflation process, observed in a small area of a very large universe.

According to eternal inflation, the expansion of the universe in certain areas of the universe never ends. This means that there is an infinite multiverse, a fractal universe. Given the continuity of the inflation phenomenon, Ukrainian physicist Alexander Vilenkin and Russian physicist Andrei Linde believe that there are always Big Bangs in the universe (Linde 2012; Vilenkin 2007).

The theory of chaotic inflation

The theory of chaotic inflation was also later supported in 1983 by Andrei Linde who considered that, through the phenomenon of inflation, we witness the doubling of the universe at each 10^{-43} s. Inflation decreases where the inflationary field is low but increases where the inflationary field is high. Inflation continues indefinitely because the speed of space expansion is faster than the speed of light. Thus, in some areas no new universes appear, while in other areas universes appear chaotically, separated from each other.

Stephen Hawking, in a study written in collaboration with Thomas Hertog, a physicist at KU Leuven University, Belgium, and published in the *Journal of High Energy Physics* (Hawking & Hertog 2018:1–14), claimed the existence of a limited number of possible universes, denying permanent inflation. Proponents of the multiverse theory include Brian Greene, Michio Kaku, David Deutsch, Leonard Susskind, Neil deGrasse Tyson, and others.

String theory

String theory, according to which the matter of the universe is made up not of point particles such as electrons and quarks, but of one-dimensional 'strings', has also tried to explain and complete, without success, the Big Bang theory. These strings vibrate and give the particles electric charge, mass and colour. The mathematical foundation of this theory seems to make it the main candidate for the Theory of Everything or M Theory.

It is true that many of the alternative cosmological models, as well as the extensions of the officially accepted cosmological model, have not yet been sufficiently scientifically proven. Some of them, although extremely interesting, still remain at the level of speculation.

Alternative cosmological models

Stationary state model

Seen as an alternative to the Big Bang theory, the Steady State theory, also called Equilibrium theory, was published in 1948 by English astronomer Fred Hoyle, Austrian English cosmologist Hermann Bondi and Austrian astrophysicist Thomas Gold. It is said that the idea of this theory was inspired by the authors of the 1945 film *Dead of Night* (Gregory 2005:36–37). According to this theory, the universe is eternal and remains unchanged in the sense that it retains the same properties in space and time and has neither a beginning nor an end. This does not mean that the universe is static; on the contrary, the proponents of this theory accept expansion, as postulated by the Big Bang theory. Given that expansion causes the density of the universe to decrease over time, steady-state model theorists support the notion of the continuous creation of matter in a field of creation called the C field in imperceptible proportions, that is, one atom per cubic meter every 10 billion years to maintain a constant rhythm of density (Barrow 2007:45).

If, immediately after its appearance, this theory did attract some interest, the discovery of cosmic background radiation in 1964 made it less frequented (Kaku 2015:299). However, the steady-state model does still have some supporters today, such as astrophysicist Jayant V. Narlikar, director of the Centre for Astronomy and Astrophysics in Pune, India.

The model of the three-dimensional Universe generated by the collapse of a star in another Universe

Dissatisfied with the Big Bang theory that, for decades, has not been able to explain what caused this explosion and why the universe has a uniform temperature, and because relatively little time has elapsed since that supposed singularity, a group of cosmologists claim that the universe was formed following the collapse of a four-dimensional (4D) star in a black hole.

Niayesh Afshordi, a Canadian astrophysicist, has been studying a theory by physicist Gia Dvali since 2000, which states that our three-dimensional (3D) universe is like a floating membrane through an even more voluminous universe, consisting of four spatial dimensions. Following a computer simulation of the death of a 4D star, it was discovered that the ejected material forms a 3D membrane that surrounds the 3D horizon. Therefore, the universe itself could be such a membrane; meanwhile, we confuse the growth of the 3D membrane with cosmic expansion (Tormsen 2015).

As we have seen, these alternative cosmological models have a metaphysical foundation in the background, either by postulating the birth of the universe out of nothing, or by appealing to the unknown, unconventional laws of physics, or to strange phenomena that suggest a horizon of mystery assimilable to the divine mystery. These laws that govern the universe could be the divine reasons imprinted by the Creator in his work. Given the nature of matter, which in its ultimate essence is, according to quantum physics, energy, it is very likely that the transcendent principle is manifested in nature through uncreated energies that have a conservative and providential role (Petcu 2008:160–161). On the other hand, the limits that the theories

of physics eventually run into refer to the measurable reality, not to the problem of a metaphysical, creative principle. Beyond the scientific, experimental, cognitive discourse, there are 'meta-empirical' interrogations that lead to an original cause of the universe (Küng 2017:87–89).

Philosophical cosmology

After the mythological narratives, in which Earth was seen as a living being, and after the Homero-Hesiodic cosmogonies in which the earth was considered a flat, circular disk surrounded by the ocean, while the sky was considered the abode of the gods and so on, along with the concept of the three Milesians, we move on to a rational, scientific type of thinking. For Thales, the earth 'floats on water like a piece of wood'.[2] Anaximander identifies the first principle as an infinite substance, from which 'they draw the origin of all the celestial vaults and the worlds from their core'.[3] Anaximenes considers the earth to be flat and carried by the air,[4] and the sun, moon and stars have their origin in the earth.[5] In conclusion, in the concept of the three Milesians, the earth was flat and fixed, and the other celestial bodies revolved around it. Pythagoras of Samos states that the earth is spherical and 'inhabited all around',[6] while 'the sun and the moon together with the other stars are gods because in them heat predominates, and this is the cause of life'.[7] Around the central fire (the Throne of Zeus) revolve the 10 spheres, the celestial bodies: Earth, Moon, Sun, Mercury, Venus, Mars, Jupiter and Saturn, the fixed stars, and the counter-earth (antichthon).

According to Heraclitus of Ephesus, the essence of the world is fire. For him:

> [*T*]his world, the same for all, was made neither by any of the gods, nor by any of the people. It has always been, is, and always will be an eternally living fire, which after the measure ignites and after the measure goes out.[8]

He states that the sun is nothing but 'a torch endowed with reason'.[9]

Presented mainly in the dialogue of Timaeus, but also in other dialogues such as Phaidros, the Sophist, Philebos and in *The Republic*, Plato's cosmology has no important contributions to pre-Socratic philosophers because he is aware that such ideas have no value of truth (*aletheia*), but rather only of probability (*pistios*). However, the philosopher develops a mythical cosmology, with the static earth in the centre, around which the planets and stars are rotated by the 'goddesses of destiny'.

The universe is seen by Plato as a living being, built according to mathematical and musical proportions by a Demiurge, according to the model of the intelligible world. Therefore, the Demiurge does not make this world out of nothing, as in the Christian cosmological model, for example, but according to the world of pure ideas which are considered part of the species of the uncreated.[10]

From chaos, the Demiurge made a cosmos dominated by reason, one which is none other than the idea of the supreme Good, that Nous, of which Anaxagoras spoke, identical with the divinity in Plato's vision.

If in Plato's cosmology we speak of an accentuated form of transcendence through the fact that the essence of sensory things consists precisely in their participation in the intelligible world, for Aristotle the intelligible is not separate from the material world, but is inherent in it. For this reason, we are dealing with gradual forms of transcendence.

In Metaphysics XII (λ), Aristotle divides substances into sensory and non-sensory. The non-sensory substance is the first cause, as a pure act, prior to any potential. The visible substances are the cosmic ones, which in turn are also of two kinds: corruptible visible substances (sublunar substances) and incorruptible, eternal substances (supralunar substances).

Therefore, for Aristotle, the visible cosmos had two regions: one subject to birth and perdition and the other eternal. Everything inside the moon's circular orbit fell within the realm of corruptibility, while celestial bodies outside this orbit (supermoon bodies) were considered eternal, being made of an incorruptible substance to which birth and death were foreign.

The celestial bodies were, in Ptolemaic-Aristotelian mechanics, pushed by angels because Aristotle, not knowing the principle of inertia, considered that a body ceases to move only when there is no agent to continue acting on it. Being that the celestial bodies were constantly in motion, there had to have been an agent to act on them, to 'push' them. Theology has identified these agents as angels. By stating the principle of inertia, Galileo refuted this principle of Aristotelian mechanics, arguing that a body retains its state of motion as long as it moves in a vacuum, even when there is no force to act on it (Chira 2012a:71).

Another critique of Aristotelian cosmology came from Kepler, who deduced by mathematical formulae that the orbits of celestial bodies are not circular, but elliptical. After these two critical moments, science claimed total autonomy from theology, thus later reaching Enlightenment rationalism (Chira 2012a:71).

In 1755, the young Immanuel Kant published the *Allgemeine Naturgeschichte und Theorie des Himmels* [*Universal History and*

2.See Aristotel, *De caelo* B 13. 294 a 28.

3.Simplicius, *Physica* 24, 13.

4.See Plutarh, *Stromata* 3 (D. 579) and Hippolytus, *Refutatio* I, 7.

5.Hippolytus, *Refutatio* I, 7.

6.Diogene Laertios, VIII, 25.

7.Diogene Laertios, VIII, 27

8.Clemens, *Stromata* V, 105.

9.Aetius, II, 20, 16 D. 351.

10.Ideas are above the Demiurge, so transcendent, superior to him. Augustine will make these ideas inferior to the Demiurge, understanding by ideas even the thoughts of the divine, the concepts of the mind of God.

the Theory of Heavens] in which, based on the principles of Newton's mechanics, he spoke about a primordial chaos, created by the divinity which, through condensation, turned into an ordered universe. Later, in the *Kritik der reinen Vernunft* [*Critique of Pure Reason*] in 1781, he nuanced his ideas.

In the 19th and 20th centuries, cosmology went from being a metaphysical discipline to a scientific one, being included in the study of physics. Stephen Hawking's statement that 'philosophy is dead' and Steven Weinberg's anti-philosophical theses in *Dreams of a Final Theory* (1992) have led cosmologists, physicists and astrophysicists to dissociate themselves from philosophical discourse, despite the fact that science cannot answer a number of fundamental questions about the nature of existence. Obviously, the cosmologist is not required to answer such questions, nor is the philosopher required to deliver a total theory to science, but a collaboration between the two fields could contribute enormously to the knowledge of the universe (see Falck 2021).

If we accept the existence of a physical Big Bang, we must naturally accept the existence of an agent responsible for explosive matter, the moment of the Big Bang, and the physical laws that shaped the exploded matter into coherent forms, planets, suns, solar systems, galaxies, swarms of galaxies, etc.

Transcendental cosmology

In order to avoid the frequent confusions made by some representatives of the scientific community, by some philosophers, but especially by theologians, regarding cosmogonic and cosmological problems, it is extremely important to have, from the very beginning, a clear distinction between the two plans of the creation of the world: the transcendent and the empirical plan. One thing is certain: the Book of Genesis is not a treatise on cosmology, astrophysics, astronomy or biology, but it is a sacred cosmogonic writing, inspired by God for followers of the Mosaic and Christian religions. We are dealing here with an archetypal, transcendental discourse, while scientific cosmology approaches this subject from an empirical level. To equate heaven and earth in the Bible with some physical entities, in a geological, geodesic, astronomical, astrophysical sense, is a completely epidermal matter which belongs to a childish cognitivism. In order to understand such an archetypal discourse, even if it is revealed, it is necessary to have a completely different type of hermeneutics, which appeals to sacred semiotics and symbolism, to the poetics of mythical structures, to metalanguage. This perspective does not infringe on the idea of a divine, personal, transtemporal, providential and omnipotent creative God. In any case, after Carl Gustav Jung and Mircea Eliade, we can no longer have the same understanding of the Bible. Jung identified the collective unconscious, the unhistorical, timeless structure of archetypes, and Eliade studied archetypal myths and symbols in archaic cultures.

The current cosmos is based on the second principle of thermodynamics, and is subject to wear, corruptibility and ultimately to death, while the divine energy that generated these forms of existence, from sidereal, galactic architecture to the living world, is eternal. Because of this, in addition to evolutionism, scientific creationism also needs an archetypal creationism. For this reason, it is difficult to accept that the original singularity of Big Bang was the beginning of creation itself. On the contrary, this moment could be the result of the Adamic guilt that occurred at the transcendental level. So, the transcendental anthropogony, the space with translucent matter, the immortal condition of human beings, etc., must be placed *illo tempore*, in an eonic time. Therefore, the seven days of creation are seven quasi-infinite, eonic time units, not days in the astronomical sense, that is, they do not belong to the succession of the 24-hour cycles. Divinity creates in a multidimensional time that is neither pure eternity nor cosmological time. The difference between these temporal species is visible, including at the linguistic level, if we consider that the Greek word *aionos* is translated in Latin with *aevum*, not with *saeculum*. If Eternity, God's infinite quality, is only simultaneity, without succession, *eonic* time has both simultaneity and succession. As for chronological time, this is a succession without simultaneity. *Eonic* time is created time, so it is the time of angelic beings, and also the time mentioned in the first book of *Pentateuch*.

It is not at all ruled out that singularity, that infinitely dense and hot particle which exploded at the beginning of the visible universe, was the result of the fall, a physical rewriting of the structure of the intelligible world. Between the seventh and eighth days, there is a caesura in which the fallen version of the cosmos unfolds. Neither the Big Bang nor the evolution is a properly creation, for God creates at an archetypal level. What we call matter was not created during the Big Bang, but is a transcription of translucent matter, into a fallen, corruptible earthly realm. As a person, Adam contained in himself the whole of humanity, but without individual souls existing in him before the fall. After the fall from Eden, human beings received a fallen material body, they were clothed in 'skins' as suggested by patristic and neo-patristic anthropology (Nellas 1994).

Spiritual cosmology

If ancient Greek cosmology is centred on matter and form, Mosaic and patristic cosmology also emphasise the spiritual dimension of creation. In the Old Testament writings, in the vision of King Solomon, the three parts of the temple had a cosmic symbolism. The court [*ulam*] and the saint [*hekal*] symbolised the earth and the sea, and the Holy of Holies [*debir*], into which no one was allowed to enter except the bishop, and even he only once a year, symbolised heaven.

The Great Canon of Saint Andrew of Crete, for example, recreates the act of creation, the drama of human being's fall and the return to their heavenly homeland. The darkness inside the Church, the grave silence, the psalms and prayers that are read, the songs, etc., reconstruct the moments of

creation, the fall of human beings, divine forgiveness and the soteriological approach. Through forgiveness (synhoresis, a word derived from *choros* = place, space), human beings return to their original *topos*. They reunite with God in the church, they coexist in the same space with him. There is a transcendence of space and time, a transfiguration of reality, in the space of an intelligible, spiritual cosmology. In fact, any liturgical space and time is constituted at another level in a sacred ontology and cosmology (Nellas 1994:120–128).

God made this world like a poem. He combined intelligible particles, spiritual photons, as the poet combines words, the composer sounds, and the painter colours and brought to life from nothing angels, suns, lights, birds, animals, people, fruitful trees, clear rivers and flowers.

For the act of conceiving the world, in the book of Genesis, the Septuagint uses the aorist form (*epoiese*) of the verb *poieo*,[11] related to the word poetry and poet. That is why our relationship with God can only be poetic, harmonious, sensitive, free, alive, loving and creative. If the ancient Greeks called this fallen world, this garden of Thanatos, this lit stone quarry, Cosmos, that is, beauty, adornment, harmony, this helps us to imagine the splendour of the true world, created by God.

According to Saint Maximus the Confessor, human being's vocation is to be a mediator between created nature and Creator, to be a priest of creation. Unfortunately, human beings failed to fulfil this mission, because of Adamic guilt, which is why it was necessary for God to descend in time through the second person of the Holy Trinity, the New Adam, who will fully achieve the harmony of the creature with its Creator (ed. Migne 1862:91:1304 D–1312 B).

Christians therefore have another Adam, Jesus Christ and another Eve, the Virgin Mary. This is where the true story begins. Mosaic history was a laboratory experiment, a rehearsal for the incarnation of the Logos in the world. The true spiritual Big Bang is the resurrection of Jesus Christ, the moment that divine particle exploded, that luminous Christ-like diamond. Only this was able to nullify death and create the conditions of possibility for a spiritual, incorruptible universe. In the particle of light that triggered the resurrection, the beginnings of an eternal time are hidden (Chira 2012b:202–208).

Conclusion

The multidisciplinary and transdisciplinary approach of this theology of creation is not only welcome, but also mandatory in the context of postmodern human being's interrogations and desecration. In parallel with this approach, an interpretation of the transcendental, hidden plan of the creation of the world is needed. If certain Holy Fathers had lived after the Copernican revolution, they would have interpreted the account of Creation in an allegorical, archetypal manner.

The conflict between theology and science, related to the cosmological problem, cannot be justified as long as both have the same purpose: to decipher the mystery of the universe. Both theological and scientific discourses operate correctly at different levels of reality (Nicolescu 2009:74–98). Therefore, the divorce between the two domains is not only mutually unfavourable, but also threatens the gnoseological coherence in general. The mystery of the universe persists even if it is said in a psalm that natural revelation helps us to intuit the origin and author of the universe.[12] The universe, however, remains, as Origen said, an '*alogos logos*', that is, a 'wordless reason'. That is why the duty of human beings, as beings endowed with reason, is to return to the Adamic condition, to know, to research and to give names to the present cosmic realities. This is possible only through a common cognitive approach of an inter-, multi- and trans-disciplinary type, assumed without pride and preconceptions of theology, philosophy and science.

Considering the scientific cosmological models, quantum physics, chaos theory, quantum mechanics, molecular biology, neuroscience, etc., theology must review certain positions that belong to a distant, pre-scientific historical context. A series of abyssal questions cannot be avoided. For example, scientific cosmology states that at the time of the appearance of the human being, the universe was already almost 15 billion years old. In this situation, the question is legitimate: why did a providential God, omnipotent, keep the universe empty for such a long time, if it was intended for human beings? On the other hand, scientists must accept, at least in theory, that current cosmic coherence, cosmological constants, billions of galaxies, biological diversity, physical laws, and the infinity of the universe have behind them an orderly intelligence, which cannot be disregarded, no matter of what nature it may be.

Given the lack of answers to the big questions about the appearance of the cosmos and the causes that generated this reality, scientists have only two options: to capitulate to the unknown and ignore any metaphysical question, or to accept the idea of a divine existence at the level of hypothesis (Küng 2017:129).

Beyond scientific theories, revelatory models and arguments, the creation of the world remains a mystery that is ultimately the object of faith, either religious belief or belief in science. Therefore, all theories and opinions related to this subject, from mythical cosmologies to contemporary scientific theories or to extraterrestrial origins of human beings (Silver 2017), will never lack followers.

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11.*'En arhe epoiesen o Theos ton uranon kai ton gen'* (Gn 1:1).

12.'The heavens declare the glory of God; and the firmament sheweth his handywork' (Ps 18:1).

Author's contributions

V.C. is the sole author of this research article.

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