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The Bible and Science: The Relationship between Science and Christianity

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Abstract

The relationship between the Bible and science has been debated for decades. Science has emerged as a multifaceted discipline focused on the natural world, viewed as a growing body of facts and a path to understanding. While the Bible has been considered authoritative, knowledge generated by science has been so reliable in different things, including attempts to prove Christian beliefs. Sceptical controversies persist over encroachment of one domain into the territory of another. The purpose of this paper was to examine the relationship between the Bible and Science based on ideas from scientists, philosophers, historians and theologians. The paper found the existence of a super intelligent designer as a common idea, with a confrontation on timeliness, creation story and divine action. While Christians appeal to factual statements when science, with its lack of moral judgment, cannot prove the Bible, the conclusion qualified the Bible as authoritative for faith and life.

Keywords: Bible and Science, Christianity and Science, Evolution and Creation, Archaeology and Biblical Timeline, Christians in Science.[‡]

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1. Introduction

The relationship between Christian religion and science is the continuing debate in philosophy and theology (Helen De Cruz, 2017). In the present age, there is a widely held discussion as to whether science conflicts with the Bible or whether they are in harmony (Francis, et al., 2018). This raises the question of whether science is the only source of truths since it can be tested in laboratories as scientists claim, or whether the Bible is the sole authority on all matters, as Christians believe. Besides the secular scientists, we often hear people say that science disproves the Bible's chronology, miracles, or creation story (Miller, 2020), and this confuses secular people who have yet to take a stand. It also challenges young believers and lay Christians who struggle to defend their faith with non-believers, as the Bible instructs (1 Peter 3:15).

Most notably, since the Enlightenment, the question of scientific theories such as evolution naturalism, positivism and theism, among others, seemed at odds with the biblical account of creation, but most scientists who introduced the theories eventually repented and maintain the biblical account (Ham & Mortenson, 2009 ; The Doc, 2021). However, their theory still affects people's perspectives on worldviews, especially of the origin of life. For example, some Christians today believe that they should match the Bible with current scientific theories of the time (Don Stewart, 2021), while others still struggle to get out of the confusion as to whether the evolutionary biology has refuted or not the Genesis (Morri, 1997; Ortberg, 2020; Biblica, 2021). While science and the Bible are most remarkably intertwined, it is important to find out whether one is at odds with the other or whether late science has disproved the Bible, especially with regard to the origin of life.

The main objective of this exploratory study is to uncover the relationship between science and the Christian religion. The paper’s specific objectives were [1] to demonstrate the extent to which science and Christianity are compatible and [2] to find out if either one view is conducive to another. To do this, the study was guided by two major questions: (1) to what extent are religion and science compatible? (2) are Christian beliefs conducive to science, or do they inevitably pose obstacles to scientific inquiry? The authors have explored the historical and contemporary interactions between theology and science to provide philosophical analysis on the key difference and similarities between science and Christian religion, in particular the conflicting scientific theories of naturalism, positivism and theism.

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Research methods

This study was exploratory with qualitative. It drew on secondary sources to develop a solid foundation for answering the above research questions. The researchers reviewed different relevant publications on Bible and science. The researchers also used several techniques to gather secondary data required, such as Bible scripture, Internet literature search, published materials, blogs and journals. These literatures provided secondary data that was analysed to better understand both the worldviews and truth behind literature.

2. What are Science and Religion

2.1. A brief history

The relationship between science and religion has been studied since the 1960s, often by scholars in the fields of history, science, philosophy and theology. Since then, religion and science have been fields of study recognized in various journals, recurrent conferences, learned societies and university chairs. Most of the authors were either philosophers interested in science or theologians, including the ordained clergy, or scientists interested in religions (Helen De Cruz, 2017).

Barbou (1966) and Torrance (1969) were among the first authors who conducted systemic studies of science and religion in the 1960s, to challenge the prevailing idea that science and Christianity were at either odd, or indifferent to each other. Barbour published presented several relevant and persistent themes, including a comparison of methodology and theory in the two fields. This led to the creation of the first scientific journal on science and religion, under the name Zygon. Authors from the late 1980s to the 2000s like Brooke (1991), unlike early studies, developed contextual approaches, including detailed historical examinations of the relationship between science and religion. Harrison (1998), who argued that Protestant theological conceptions of nature and humanity helped give birth to science in the 17th century, challenged this model of warfare between religion and science. Bowler (2001) drew attention to a large movement of liberal Christians and adaptive evolutionists of the 19th and 20th centuries who sought to reconcile evolutionary theory with religious belief.

The 1990s saw a series of five Conferences, co-sponsored by the Vatican Observatory and the Centre for Theology and Natural Sciences, aimed at understanding divine action in the light of contemporary science. The contributors were philosophers and theologians, and the resulting edited volumes were devoted to an area of the natural sciences and its interaction with religion. Themes focused respectively on quantum cosmology, chaos and

complexity, evolutionary and molecular biology, neurosciences and the person, and quantum mechanics (Russell, et al., 2008).

In today's public sphere, evolutionary theory and creationism / Intelligent Design has become the most important interaction between science and religion (Helen De Cruz, 2017). The battles and lobbies around the teaching of adaptive evolution and creation, especially in America (Masci, 2019), suggest a conflict between religion and science. However, the relationship between religion and science remains complex, even if one focuses on one or the other theory. For example, while in the United Kingdom popular writers, clergy and scientists sought to reconcile religion and science in the 19^{th} and 20^{th} centuries, Bowler (2001) uses the Scopes trial of 1925 to illustrate how the United States has seen the rise of fundamentalist opposition to evolutionary thought.

Over the past decades, we see the propitiatory statements of church leaders on the theory of adaptive evolution. For example, in his message to the Pontifical Academy of Sciences, Pope John Paul II (1996) asserted the theory of evolution, but rejected it for the human soul, which he thought was the result of a distinct and special creation. Likewise, one reads from Brown (2008) that the Church of England has apologized to Charles Darwin for the initial rejection of his evolutionary theory. Science and religion have been a reality in present day Christianity; however, the extent to which Christian beliefs are aligned with the results of science is still an age-old question.

2.2. The interaction between science and religion

There are different models that define the interaction of science and religion. According to (Stenmark, 2004), there are three distinct points of view: (1) the independent view which stems from the lack of overlap between the fields of religion and science; (2) the contact view which sees some overlaps between religion and science; and (3) a union of the realms of religion and science. While these views may have subdivisions, Stenmark defines contact in the form of either harmony or conflict. This makes Barbour's (2000) the most influential model of the relationship between science and religion because it offers four taxonomies: conflict, independence, dialogue and integration. The model has been adopted and amended by later authors, including Barbour himself, but later challenged by Cantor and Kenny (2004) who do not see the point of trying to understand the past interactions between the two domains because: *"it focuses on the cognitive content of religions at the expense of other aspects, such as rituals and social structures*." However, it was not so clear whether the "*conflict*" was defined as logical or evidential, so the model was not refined philosophically as some of its successors such as Stenmark (2004). Nonetheless, it is always useful to discuss this taxonomy in detail, due to its lasting influence.

The Conflict model

The conflict model asserts that religion and science are in principle and unending conflict. It heavily relies on the reception of Darwinism (Bowler, 2001) and the trial of Galileo (Dawes, 2016), which are two main historical accounts. Its development in the 19th century followed two popular publications by Draper (1874) and White (1896), which hold that religion and science are in inevitable conflict because they deal essentially with the same field. The conflict model has been criticized by various science and religious writers on the basis of a cursory and adherence to historical records. Ironically, extreme biblical literalism and scientific materialism have little in common, as they both assume a pattern of conflict: both if religion is right, science is wrong, or vice versa.

Although the model of conflict between religion and science is currently in the minority, recent authors, like Philipse (2012), have argued for this model through philosophical argumentation or by re-examining historical evidence, like the Galileo trial (Dawes, 2016). Plantinga (2011) argued that the conflict is between naturalism and science rather than between religion and science.

The Independence model

The model of independence holds that religion and science explore distinct fields, which pose distinct questions. The most influential model under this view has been the one of Gould (1989), developed under his NOMA principle (Non-Overlapping Magisteria). He affirms the absence of conflict between the two fields of religion and science because their respective domains of professional expertise do not overlap.

According to Gould (1989), the areas of expertise of science are empirical questions about the constitution of the universe, while the areas of expertise of religion are ethical values and spiritual meaning. He therefore argues that scientists should never pretend to ideas on moral issues, just as religious leaders should not make factual statements on, say, evolutionary theory. Gould's model predicts interactions at the boundaries of each magisterium, such as our responsibility to other creatures. According to Worrall (2004), an obvious problem with the independence model is that it would be difficult to justify claims of value and ethics, if religion were prohibited from making a statement of fact. For example, we cannot claim that we must love our neighbour because it pleases the creator. Yet, religions seem to make empirical claims, for example, that the early Hebrews crossed the separated waters of the Red Sea.

The Dialogue Model

Thirdly, the dialogue model proposes a mutualistic relationship between science and religion. Contrary to the two previous models, this model asserts common ground between science and religion, perhaps in their concepts, presuppositions and methods. For instance, the biblical doctrine of creation may have encouraged science by assuming that creation is both orderly and intelligible, so it can be expected that pertinent laws could be discovered (Helen De Cruz, 2017). Creation, as a product of God's actions, is also contingent, so that the laws of nature cannot be learned by thought a priori, which arouses the need for empirical investigation.

According to Barbour (2000), theological and scientific investigations depend either on a theory and rely on models, metaphors and value consistency, comprehensiveness and fruitfulness. For example, he understands that the doctrine of the Trinity depicts the way Christians interpret the early chapters of Genesis. Therefore, his argument is that in the dialogue model, religion and science use common methods, concepts, and presuppositions to speak to each other, even though they remain separate. Likewise, Van Huyssteen (1998) argues that the epistemological overlaps of science and religion makes them a graceful duet.

The Integration model

Lastly, a more extensive model in unifying religion and science is the integration model. Barbour (2000) distinguishes three main forms, which are the natural theology, the theology of nature and the philosophy of processes. Through natural theology, man uses the results of the natural science as premises, to formulate arguments about the existence and attributes of God. An example, which is present in the contemporary cosmological arguments for the existence of God, is the assumption that the universe has a temporal origin. The central contemporary arguments use the fact that cosmological constants and the laws of nature allow life, while many other combinations of constants and laws would not allow life. The theology of nature, for its part, examines how to enrich or even revise scientific discoveries, from the religious framework. This is, for example, evidenced in McGrath's theology (2016) which examines how nature and scientific discoveries can be viewed from a Christian perspective. Lastly, according to Barbour (2000) the Process Philosophy is a promising way to integrate science and religion.

However, it is difficult to do justice to both the religious and scientific aspects of a given field, especially given their complexity, even if the integration seems good to theologians. For example, Teilhard de Chardin (1971) who specialized in both paleoanthropology and theology, proposed an unorthodox theology with an unconventional interpretation of original sin and an unconventional view of evolution as teleological, which respectively put him in

difficulty with the Roman Catholic Church and put him in trouble with the scientific establishment. Although theological heterodoxy being undoubtedly a model, it points to difficulties for integrative model to be successful in the larger community of philosophers and theologians. Further, the integration appears biased towards theism, as arguments were described based on scientific findings that support theism, but Barbour failed to use the scientific findings to discuss arguments that support the denial of theism.

3. Contemporary connections between science and religion

A wide range of subjects are encompassed in current development in the fields of religion and science, such as human nature, ethics and conscience. Contemporary natural theologians, like Collins (2009), discuss the optimization of the interpretation of multiverse cosmology and the meaning of the Big Bang, especially on the underlying design arguments. For example, the idea that God actualized the best of all possible multiverses was recently explored by Hudson (2013), examining two broad areas of the contemporary debate: divine action and human origins.

3.1. Divine action and creation

Before scientists developed their vision of cosmology and the origin of the world, Western cultures had already developed the doctrine of creation based on the biblical account and the writings of the church Fathers (Helen De Cruz, 2017). This doctrine of creation has four main interrelated features: (1) creatio ex nihilo, that is, God created the universe from nothing. In other words, God did not need pre-existing materials to make the world. This is opposed to the Demiurge philosophy that God created the world from chaotic or pre-existing materials. (2) God is distinct from the world, i.e., the world is neither equal nor part of God or any emanation of the being of God. The idea presents the asymmetry between God and the creature: the world radically depends on God while God doesn't depend on the creatures (Jaeger, 2012). (3) Creation is essentially good (repeatedly affirmed in Gen 1). Although the world contains evil, God does not directly make this evil exist. Furthermore, God plays an active role in creation using special divine actions such as miracles and revelations to care for the creatures. (4) God has made arrangements for the end of the world and will create a new heaven and a new earth, thereby eliminating evil.

The views of diving actions are firmly related to the doctrine of creation, but theologians often distinguish between general and special divine actions,

although no accepted definition of the two concepts exists in science, theology or religion. Wildman (2008, p40) distinguishes them viewing general divine action as the creation and sustenance of reality, while special divine action is made up of collections of specific providential acts, often at particular places and times, such as revelations to prophets and miracles. However, since some phenomena are difficult to classify as general or special divine action, the distinction is not always clear. A related distinction made by Alston (1989) shows that direct acts are performed without the use of natural causes, while indirect acts are performed by natural causes. The later classification gives four possible types of Divine actions: (1) God could not act in the world at all, (2) God could only act directly, (3) God could act only indirectly, or (4) God could act both directly and indirectly.

The two central questions arising from scientific and religious literature, concerning creation and divine action, are: (1) How compatible are Christian creation doctrine and traditional views of divine action with science? (2) How can these concepts be understood in a scientific context, for example, what does it mean for God to create and act? Even if some scientific theories, like the Big Bang theory of Georges Lemaître (1927), seem close to the creation doctrine, it is of the utmost importance to note that the creation doctrine says nothing about the mode of creation or the age of the Earth. The possibility for a wide range of views within science and religion if offered, but the Young Earth creationism only conforms to the Scriptures. Although the interpretation that the universe has a temporal beginning has been opposed by philosophers like Pitts (2008), the Big Bang theory specifies that the universe originated from an extremely hot and dense state about 13.8 billion years ago (Craig, 2003); hence an apparent support for creation ex nihilo.

Since the 17th century, scientific discoveries have come to the net results that God has been pushed further and further to the margins. There are two ways in which this intrusion of science into the territory of religion has occurred: (1) Scientific discoveries - particularly in evolutionary theory and geology - have challenged and replaced biblical accounts of creation. Although the creation doctrine does not reflect on how and when the creation was done, the Bible has been considered authoritative. (2) The concept of scientific laws that emerged in 17^{th} and 18^{th} century physics seemed to leave no room for special divine action. These two challenges, scientific discoveries and the concept of scientific laws will be discussed below, along with the solutions proposed in contemporary religious and scientific literature.

The Bible has traditionally been the source of historical information for Christian authors. The exegesis of the biblical creation stories, in particular Gen 1-2 and a few passages scattered throughout the Scriptures such as in Job, remains strewn with pitfalls. The question is whether these texts should be interpreted in a poetic, metaphorical or historical way and, as Harris (2013)

points out, what we should do because the order of creation differs between these stories. James Ussher (1581–1656), an Anglican bishop used the Bible to do a literalistic interpretation of the biblical creation narratives and dated the beginning of creation to 4004 BCE (cited in Helen De Cruz, 2017). Although this literal interpretation has not been unfamiliar and is still used by today's Young Earth creationists; early theologians like Augustine (416 [2002]), had given an alternative: *the non-literalist readings of the biblical materials*. Since the 17th century, geology has given pressure to the creation doctrine with findings suggesting that the Earth was significantly older than 4004 BCE. Beginning in the 18th century, the transmutationist (the current evolutionary theory) was proposed by natural philosophers, such as seems incompatible with scriptural interpretations of the particular creation of species. As Bowler (2009) puts it, Darwin's Origin of Species (1859) initiated ongoing discussions of how to reinterpret the creation doctrine in accordance with the theory of evolution.

The spectrum of divine action of Peters & Hewlett (2003) presents two dimensions: (1) the form of causal explanations, which relate divine action to natural processes and (2) the degree of divine action in the natural world. At one extreme are creationists who, like other theists, believe in God's creation and its fundamental laws. They also believe that God sometimes performs miracles (special divine actions) that intervene in the fabric of laws. They totally deny any role of natural selection in the origin of species. In creationism, there are Old Earth creationists who accept geology and reject evolutionary biology, and the Young Earth creationists who reject both. The next creationism as described by Dembski (1998) is the intellect design creationists, who see a conception of the intellect in the irreducible complexity of organisms to infer the design and purpose. Although they do not call their intelligent designer God for political reasons, with the intension of bypassing the constitutional separation of church and state (Forrest & Gross, 2004); they completely deny the role of natural selection in the formation of organic complexity. They also assert an interventionist account of divine action.

Theistic evolutionists take a hands-off approach to divine action. They believe that God creates indirectly through the laws of nature, including natural selection. An example is theologian John Haught (2000) who views divine providence as "*self-giving love, and natural selection and other natural processes as manifestations of this love, as they foster autonomy and independence*". According to Deane-Drummond (2009), theistic evolutionists accept special divine action, especially the Incarnation in Christ. On the other hand, deists like Corey (1994) claim that God established the laws of nature, which is the only general divine action, and let it run like clockwork without further interference.

These views of divine action have also been influenced by developments in physics where natural philosophers have implemented mechanistic views of the

world governed by seemingly unchanging and stable ordered and law-like processes. These make it difficult to understand special divine action, leading to the question of how God could act in a world determined by laws (Pannenberg 2002). A worthy way of looking at divine action remains to see it as actions, which, in a certain way, ignore the laws of nature. Here is the definition given by Hume (1748: p181): "*a transgression of a law of nature by a particular volition of the deity, or by the interposal of some invisible agent" and by Swinburne (1968: p320): "a violation of a law of Nature by a god*".

This concept of divine action is generally seen as interventionist, making the world an occasional determinist. However, non-interventionist forms of divine action are needed in order for God to act without having to suspend or ignore the laws of nature (Murphy, 1995).

Debates about how nature works in terms of elegant physical laws reached their peak in the 17th and early 18th centuries with the suggestion of the ingenuity of a divine designer (McGrath, 2016). Another conclusion suggested by the new law-based physics was that the universe was able to function smoothly without the need for an intervening God. This continued deterministic understanding of the universe that leaves no room for special divine action was rejected by Newton: "*the planets' motions could be explained by laws of gravity, but the positions of their orbits, and the positions of the stars—far enough apart so as not to influence each other gravitationally—required a divine explanation"* (Schliesser, 2012). Unlike authors like Polkinghorne (1998), Alston (1989) argued that pre-20th century mechanistic physics is compatible with divine action and divine free will.

Twentieth-century developments in physics, such as chaos theory, quantum theory, and theories of general and special relativity, overturned the mechanical view of creation. In the second half of the 20th century, the chaos theory and quantum physics became the possible avenues for reinterpreting divine action. Chaos theory was used to present both the "*epistemological limits*" of what we can know about the world and provide an "*ontological openness*" in which God can operate without violating the laws of nature (Polkinghorne, 1998). The only difficulty presented by this model was the fact that it goes from our knowledge to assumptions about how the world is. It is unclear here whether the results of chaos theory are indeterminate or if we, limited humans, cannot predict them. A non-interventionist model proposed by Russell (2006) illustrates that God acts in quantum events, in order to act directly without having to break the laws of nature. This way, God is not reduced to a natural cause, as there are no effective natural causes at the quantum level. A similar ascending model developed by Murphy (1995) shows that God acts in the space provided by quantum indeterminacy. Strong criticism has been made of these attempts to situate God's actions within chaos theory or quantum mechanisms that Jaeger (2012) has called "physicalism plus God", but eventually, it was not even clear whether

quantum theory could allow free human action and let alone the unknown divine action (Jaeger, 2012a). Moreover, the Thomist philosophy of William Carroll (2008), suggested that his predecessors, such as Murphy, made a category error: "*God is not a cause in way creatures are causes, competing with natural causes, and God does not need indeterminacy in order to act in the world. Rather, as primary cause God supports and grounds secondary causes*." The idea came about consistent with determinism, but blurring the distinction between general and special divine actions! Moreover, Sollereder (2015), based on the theory of the incarnation, suggested that God at least sometimes acts as a natural cause, so the idea that God is a cause among natural causes is not a foreign idea in theology.

Since chance and stochasticity are important features of evolutionary theory, questions have been raised about the extent to which chance is an authentic feature of creation, and whether divine action can be linked to chance. Gould (1989) imagined, in a famous thought experiment, a situation where one rewinds the tape of one's life 508 million years ago (the time of the Burgess Shale) to ultimately argue that the chance that he ends up with something like current life forms is infinitely little. On the other hand, Simon (2003) understands that species very similar to those we know today, including intelligent human-like species, would evolve under a wide range of conditions. Under a theistic interpretation, one conclusion according was that randomness could be either an authentic characteristic or a merely apparent aspect of creation. For example, Plantinga (2011) is so keen that: "*Randomness is a physicalist interpretation of the evidence. God may have guided every mutation along the evolutionary process*". This means that the evolutionary history could have been guided by God, by causing the right mutations to appear at the right time and preserving the life forms that lead to the results He intends. Contrary to this view, other authors believe that stochasticity is the true hallmark of design rather than a physicalist gloss. However, these writers take up the challenge of explaining the providence of God in terms of genuine randomness. Rather than deists who claim that God started the universe and did not interfere with its unfolding, the theists who constitute most scientific and religious writers are not open to this option. Johnson (1996) afirms that the compatibility of divine providence and genuine randomness:

> God gives creatures true causal powers, thus making creation more excellent than if they lacked such powers, and random occurrences are also secondary causes; chance is a form of divine creativity that creates novelty, variety, and freedom.

From this point of view, one implication is that if God does not have a providential plan for possible outcomes, then He becomes a risk taker. This is

what Johnson (1996) underlines, that leaving the creator in a position of control brings Him a risk. So, why would God take risks? The answers include the theory of theodicy, which says that creation that exhibits stochasticity can be truly free and autonomous. Miller (2020) argues that genuine love requires not manipulation but freedom. He understands that such freedom is best assured not by the chains of divine direction attached to every living creature but by the open contingency of evolution. Further, Southgate (2008) holds that a combination of chance and law is the only way God can accomplish His creative plans, but not just the best way mentioned in the "*one theodicy*".

3.2. Human origins

The creation stories of Christianity date back to the first book of Genesis, in the Hebrew Scriptures, which states that humans are the result of a special act of creation. The creation account detailed in Genesis 1 shows that God created in six days and humans were created last on the sixth day. God created a man and a woman and they were created in God's own image. However, a different order of creation is provided in Genesis 2, which shows that humans were created earlier before animals, and only a male was initially created and later God fashioned a female from the rib of the male. Regardless, it is well known that these first hand-made humans are considered the ancestors of all living humans today. These views are reflected in Ussher's Chronology; and Western culture maintained them until the 18^{th} century that, in an act of special creation, humans were created only 6000 years ago.

Humans occupy a privileged place in these creation stories, in particular because humans were created in the image of God. As Cortez (2010) puts it, image-bearing can be explained in atleast three ways. (1) humans are in the image of God by virtue of what they do, such as having dominion over nature (the functionalist account); (2) the possession of unique characteristics such as reason (the structuralist account)e; or (3) a special relationship between God and mankind according to the relational interpretation.

Another special place is given to humans in creation following the Fall as illustrated in Genesis 3. This account of the Fall attributes a state of innocence and perfection to the first couple of humans living in the Garden of Eden, but they fell from that state since the ate of the forbidden fruit of the Tree of Good and Evil. As a result, humans were kicked out of the garden and curses were introduced, including death, manual labour, and pain during childbirth. The effects on the first human sin, known as original sin, are passed on to all humans in a such way that all humans today tend to sin. According to Augustinian's interpretation of the original sin, it also affected our reasoning capabilities such that our original reasoning abilities and perception became impaired, due to sin. In the current analytical philosophy of religion is influenced by this

interpretation. An example is Plantinga's (2000) Aquinas/Calvin model that sought to explain disbelief and religious diversity by appealing to the noetic effects of sin.

Irenaeus believed that Adam and Eve before the Fall were innocent as still developing children, while Augustine attributes them a state of perfection in the prelapsarian state. Either way, Augustine and Irenaeus come to the same ground that the Fall damaged the relationship between humans and God but did not erase God's plans for humans, which gradually grew until the Incarnation as a means of God to repair the damage.

A range of scientific disciplines, such as palaeoanthropology, geology, archaeology, and evolutionary biology, has studied human origins. The published findings dispute with narratives of the traditional religion about mankind, such as the special creation of mankind, the historic Adam and Eve, the imago Dei, and original sin. The human is withdrawn from his position of special creation in natural philosophy as can be found in the first transmutationist before Darwin. For example, by racing the origins of humans and other land animals from creatures, Chimpanzees were proposed by Jean-Baptiste Lamarck as ancestors of humans through his work of 1809 entitled "*Zoological Philosophy*". Likewise, with his naturalistic account of the origin of species, a geologist Robert (1844) sparked this controversy, claiming that the earliest organisms arose by spontaneous generation and that all subsequent organisms evolved from of them. His argument has become radically different from the Augustinian interpretation of humanity in a state of prelapsarian perfection, because according to Robert man comes from a single line, which initially was in a state of simplicity, if not barbarism.

Darwin (1859) published his *Origin of Species*, but did not discuss human evolution, instead promised that light would be shed on the origin of man and his history (p487). Drawing on Darwin's points, a discussion made by Huxley (1863) focused on fossil evidence, especially the skulls from Gibraltar among other uncovered Neanderthal fossils. Africa was later identified as the origin of the first humans in another publication by Darwin (1871), where he attempted to prove that chimpanzees and gorillas were most closely related to humans, using comparative anatomy.

The paleoanthropologists of the 20th century have debated whether humans separated from other great apes, mistakenly classified in the paraphyletic group of Pongidae long ago, but the early immune response and direct genetic evidence favours the timeline (Helen De Cruz, 2017). The discovery of numerous hominid fossils has created a complex picture of their evolution. Detailed analysis of ancient DNA extracted from fossil remains supplemented these findings, bringing to light a previously unknown hominid species (the Denisovans) that lived in Siberia around 40,000 years ago. Genetic and fossil discoveries have gathered evidence that humans evolved as a complex

branching tree with many dead ends in line with the evolution of other species, rather than in a simple linear fashion. They support a relatively recent origin of our species, Homo sapiens, in Africa around 200,000 years ago, with crosses with Neanderthals and Denisovans (Stringer, 2012).

In line with the above, it is clear that scientific findings and writers of the contemporary religion and science have attempted to question the imago Dei, the human uniqueness, the historicity of original sin and the Incarnation. For example, van Huyssteen (2006) proposes that the key characteristic of uniquely human behaviour is its ability "*to engage in cultural and symbolic behaviour, which became prevalent in the Upper Palaeolithic*". Rather, the notion of imago Dei has been broadened by theologians. Deane-Drummond (2012) argues that the imago Dei should be reconceptualized to include certain non-human animals, since some animals have the capacities of morality and reason. This completely removes the ontological distinction between humans and non-humans, supporting Moritz's question (2011) of whether extinct hominid species, such as Homo neanderthalensis and Homo floresiensis, which coexisted with Homo sapiens for part of prehistory, participated in the divine image.

Discussions also took place on how we can interpret the Incarnation, with evidence of human evolution. For example, Peacocke (1979) gives a liberal definition that the divine nature of Jesus is the point where humanity is perfect for the first time. A teleological interpretation of adaptive evolution by Teilhard de Chardin (1971) shows Christ as the progression and culmination of that towards which evolutionary biology has been moving, even though the historical Jesus lived 2000 years ago. In Teilhard's views, although the evil is no longer incomprehensible, it is still dreadful. Teilhard (1971) understands that God chose adaptive evolution as the mode of creation, but evil has become a natural feature of creation and an inevitable by-product. However, Deane- Drummond (2009) rejected the Teilhard's Spencerian progressivist model of evolution that led to such a problematic interpretation. Drummond challenged this interpretation, arguing that by viewing humanity as the culmination of evolution, Teilhard was anthropocentric.

The progressive Spencerian view has been rejected by contemporary evolutionary theory to strictly adhere to the Darwinian model. For example, human morality is viewed as a continuum with the social behaviour of other animals (Deane-Drummond 2009). In Deane-Drummond's debate on the Fall, she conceptualizes the Fall NOT as a historical but as a mythical event. According to her, the Fall is all about humanity's heightened awareness of moral concerns. She sees Christ as an "*incarnate wisdom, situated in a Theo drama that plays against the backdrop of an evolving creation*". She understands that as we are all connected to the rest of creation by common descent, so is Christ, and therefore by saving us he also saved all of creation.

The narratives of the historical Adam and of the Fall have been discussed at length with an emphasis on how they can be interpreted taking into account the contemporary science. At first glance, the limitations of our cognitive abilities seem to have little explanatory gain for appealing to the account of the Fall, rather explained in a naturalistic way as the result of biological constraints. Van Inwagen (2004) interprets the concepts of sin and Fall in line with the paleoanthropology. According to him,

God could have providentially guided hominin evolution until there was a tightly-knit community of primates, endowed with reason, language, and free will, and this community was in close union with God. At some point in history, these hominins somehow abused their free will to distance themselves from God.

Building on following Augustinian tradition, van Inwagen considers the Fall as the fall from perfection. On the contrary, there is a lack of paleoanthropological or genetic evidences for that community of superhuman beings (Schneider, 2014). This prompts Helen De Cruz (2013) to accept the Irenian's interpretation of the account of the Fall versus that of the Augustinian's, which emphasizes original innocence at the prelapsarian state and does not involve a historical Adam.

4. Summary of findings

Scientists and theologians present three major relationships between science and the Christian Religion: (1) independence, (2) conflict and (3) union of these two realms.

In the first model, authors point to the fact that science and religion explore two different fields because areas of expertise of science are empirical questions about the constitution of the universe, while the areas of expertise of religion are ethical values and spiritual meaning. This view confirms that science cannot prove the existence of God, make neither value nor moral judgments (Moore, 1999 ; Yates, et al., 2015 ; Francis, Astley, & McKenna, 2018).

The conflict model argues for a no compatibility between science and Christian religion while dealing with the same things, hence exist in unending conflicts. This incompatibility holds mainly on three main elements: (1) the story of creation, (2) the miracles and divine actions and (3) timeliness. While scientists tend to deny the biblical creation, account found in Genesis 1-2, they seem to accept the existence of the supernatural [which they do not call God], but claim to have established and governed natural laws which made human evolution possible. Moreover, scientists also seem to agree that the universe has a starting point and attest to the creation ex nihilo through the Big Bang theory

which drove the explanation of how the universe began, claiming that it started with a small singularity and then swelled over the next 13.8 billion years towards the cosmos we know today (Howell, 2017). However, this theory was refuted by many qualified scientists concluding that science simply echoes the words of Genesis 1: 1, "*In the beginning, God ...*" One who cannot be coerced by the universe and the very laws He created (Moore, 1999; Francis, Astley & McKenna, 2018 ; Don Stewart, 2021). With regards to timelines, the studies of genealogical records estimate the age of the Earth to be around 6,000 years while vast majority of the science asserts that there is ample scientific evidence indicating an age of 4.6 billion years for the Earth and around 14 billion years for the entire universe. However, after examining how various scientific tests failed to prove the earth's probable old age, many scientists rejected the theory. The conclusion was that the claim intended to support Darwinism's theory of adaptive evolution (or evolutionary biology) because for the theory of adaptive evolution to be true, the Earth has to be very old and for life to develop spontaneously from an original single cell to our present complex universe, billions of years are needed (Ball, 2003; Peretó & Català 2012; Don Stewart, 2021). Therefore, with this model, recent authors like Plantinga (2011) conclude that the conflict is between science and naturalism rather than between science and religion.

Lastly a union view of science and religion tries to intentionally unify science and theology. These developments rely on (1) the natural theology whereby man formulates arguments about the existence and attributes of God, using the results of the natural science as premises; (2) the theology of nature, for its part, starts from the religious framework and examines how this can enrich or even revise scientific discoveries; and (3) the Process Philosophy. This model is very complex because it brings an unconventional interpretation of things such as the origin of sin, the view of evolution as teleological and it seems biased towards theism.

5. Conclusion and recommendations

The conclusion is an exhortation to consider that questions of science and religion are almost always complex and that the answers they imply are also complex. It is only when we consider as many claims as possible and our own reflection on those claims that we can grow in faith and knowledge.

On one hand, we recognize that science is a way of finding out what is in the already existing universe and how those things work today. It can also explore how things worked in the past and how they are likely to work in the future. The knowledge generated by science may be reliable, for example in developing new technologies, treating diseases or many other types of problems. However, science is continually improving, and when new evidence emerges,

new theories are developed and existing theories rejected or refined. By improving and expanding our knowledge of the universe, it also leads to new questions for future investigation. Again, science would not prove the existence of God or pass moral judgment. This makes it an unreliable benchmark for all truths, but deserves consideration in learning about certain natural phenomena. However, nothing on earth is more secure and reliable than the Bible. If human thought conflicts with the Word of God, then may God be true and every man a liar (Romans 3: 4). We should not think that the reliability of the Bible depends on our ability to gather evidence, but serves to confirm the Bible and to support our confidence. Scientific evidences from any discipline would continually contradict each other as science evolves. However, stronger evidences for the Bible exist such as Old Testament prophecy fulfilled in the New Testament, Findings of archaeology, Reliable manuscripts, Inner testimony of the Holy Spirit, the Bible's power to transform lives and cultures. It is not just a matter of scholarly analysis. Biblical correctness is not just an academic notion to be classified with other ideas that we believe. We must trust and cherish the Bible and put it to good use. The scriptures make us wise for salvation through Jesus and are helpful in equipping us to live godly lives.

Christians who engage in science should be aimed primarily at finding out what to learn about God's creation, through understanding the natural world mechanisms, processes, relationships, powers, entities and structures. When the Holy Spirit lights up our hearts, we see evidence of His power and majesty all around us (Psalm 19), recognizing the created world as the "*theatre of the glory of God*" (John Calvin). As we reflect on his creation, we gain knowledge that complements our experiential knowledge of Him and the knowledge we derive from His special revelation of Himself. We can worthily praise Him and know Him more deeply through prayer and careful study and reflection on His creation. The universe was formed by the one and only one who possesses extremely great knowledge and power. We realize the complexity of His creation which far exceeds the limits of human understanding, even in the face of scientific developments. Our knowledge of his creation therefore gives us the opportunity to recognize, praise and worship the Creator.

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