

Creatio Ex Nihilo and the Literal Qur'ān

Abdulla Galadari*

Abstract: In the modern age, the conflict between science and religion manifests itself in the debate between evolution and creation. If we adopt a creationist's reading of the Qur'ān, we discover an interesting anomaly. Reading the Qur'ān literally does not necessarily provide the foundation of creationism. Creationists usually have in mind the concept of *creatio ex nihilo*, or 'creation out of nothing'. However, in the Qur'ān, one of the words used for creation, *khalaqnā*, has the root *khlq*, which means 'to split' or 'to divide'. This root word may even apply to the biological process of cell division. Therefore, from a scientific perspective, using the word *khlq* to describe this physical process is not problematic. In addition, with close textual analysis of the Qur'ān, we realize that the word for creation 'be' (*kun*) does not truly describe the moment of creation, but rather that of 'being'. The Qur'ān separates the notion of creation from being, which poses the question as to what the text constitutes as the ontological nature of the human being and the universe. Therefore, even if we do adopt a literal reading of the Qur'ān, we find that it does not necessarily support a worldview that endorses *creatio ex nihilo*.

Keywords: creationism, exegesis, evolution, Islam, Qur'ān, science and religion

Abstrak: Dalam era moden kini, konflik antara sains dan manifesto agama berlaku dalam perdebatan antara evolusi and penciptaan. Jika sekiranya kita mengambil penciptaan dalam pembacaan al-Qur'an, kita akan menemui anomali yang menarik. Dengan membaca Qur'an secara literal, ia tidak semestinya memberikan asas tentang penciptaan. Pencipta selalunya mempunyai pemikiran bahawa terdapat konsep *creatio ex nihilo* atau 'penciptaan daripada tiada apa-apa'. Walau bagaimanapun, terdapat di dalam Al-Qur'an bahawa satu daripada

* Dr Galadari is Assistant Professor of Engineering Systems and Management at Masdar Institute, UAE. He holds a PhD in Civil Engineering as well as a PhD in Arabic and Islamic Studies (Al-Maktoum College of Higher Education). E-mail: aigaladari@gmail.com

perkataan yang digunakan untuk penciptaan adalah *khalaqnā*, yang mempunyai kata akar *khlq* yang bermaksud ‘untuk dipecahkan’ atau ‘untuk dibahagikan’. Kata akar ini dapat digunakan dalam proses biologi bagi pembahagian sel. Oleh itu, daripada perspektif sains, dengan menggunakan perkataan *khlq* untuk menerangkan proses fizikal, ia tidak mempunyai masalah langsung. Tambahan pula, dengan analisis teks yang terperinci terhadap Al-Qur’an, kita dapati bahawa perkataan untuk pembedakan (*kun*) tidak menerangkan pembentukan yang sebenarnya, tetapi perkataan ‘menjadi’. Al-Qur’an memisahkan tanggapan penciptaan daripada ‘menjadi’; oleh itu, ia menimbulkan persoalan mengenai apa yang ditulis sebagai sifat ontologi manusia dan alam semesta. Oleh itu, walaupun kita menerima pakai pembacaan Al-Qur’an secara literal, kita dapati bahawa ia tidak semestinya menyokong pandangan dunia yang mengamalkan *creatio ex nihilo*.

Kata kunci: Penciptaan, eksegesis, evolusi, Islam, Al-Qur’an, sains dan agama

Introduction

Sometimes the clash between religion and science is thought to be a clash between the spiritual world and the material world. Science attempts to understand the material world, while religion tries to connect human consciousness with a spiritual world. Can science explain the spiritual world, or does it deny its existence and claim the spiritual world is only an illusion? Similarly, does religion attempt to explain the material world, or does it equally claim its existence is an illusion (as some Eastern religious philosophies do explicitly state)?¹

What is the purpose of religion? Some would argue that religion’s purpose is to control human minds. Karl Marx called religion the opiate of the masses (Marx, 1982, p. 131).

Religion can be politically abused by many of its followers in order to control people. Though religion might have been introduced by humanity in their attempt to search for truth, religion has also been used in the search for power.

According to the New Testament Gospels, Jesus Christ condemned teachers of the law and the established religious order. Buddha, Moses, Muḥammad, and many founders of religions condemned the established religious and social orders of their time. It seems that the purpose of

the many founders of the great religions of the world is to counter the existing opiate of the masses. People believe in things due to tradition, the inherited knowledge from parents to children. Thus, they become close-minded and blinded, unable to seek the truth. Nonetheless, the founders of the great religions tried to open people's minds by questioning their existing faiths and traditions.

What is the purpose of science? It is a method for humanity to understand the physical environment. Science starts with an observation. Then, it attempts to make a hypothesis of the phenomenon that is being observed. The hypothesis is thereafter tested with controlled experiments to ensure the circumstances in which it is valid. Science is a method of explaining the truth or the facts of natural physical phenomena through experimentation and evidence (Kuhn, 1962; Popper, 1983).

May we assume that the very core of the philosophy of religion and science is to seek the truth (Farnham and Kellert, 2002)? The difference between them is primarily in the methods used. Religion is based on belief in supernatural or spiritual powers, while science is based on evidence. Nonetheless, the goal of both is to allow humanity to understand its place in this universe. Curiosity is humanity's fuel. It is the reason humanity developed both science and religion. The main problem that exists between science and religion is the dispute in the method used by each in its journey to seek the truth (Galadari, 2011).

The foundation of science and religion are different, but the process of thought is sometimes similar. Robert Geraci has shown how the rituals of science labs are social phenomena that are understood in light of the relationship between science and other cultural phenomena, such as religion (Geraci, 2002). For example, in scientific labs or surgical rooms, people wear a specific type of outfit and need to perform certain cleansing procedures to ensure that they are sterilized. The process is important, even if it is known that it is not always necessary, but those who enter must abide by the rules. How is this ritual, as a social phenomenon, any different than those rituals performed in churches, synagogues, mosques, or temples? Scientists need to follow the ceremonies of the ritual of entering a lab or a surgical room, and they need to do it religiously. Geraci (2002) states:

Although religion and science differ in their information content, they share the significant characteristics of

particulates embedded in mediated networks. Moreover, there are similarities of form between the scientific and religious enterprises. Ritual action and interpretation is key to knowledge-making ventures of scientific as well as religious nature. (p. 901)

There might be scientists who are theorists, having no rituals. However, they may also be compared to theologians, who perhaps philosophize on the nature of divinity without adhering to any particular ritualistic tradition. One of the major debates between science and religion is the theory of evolution. Teaching evolution in schools has been hotly debated for decades with many legal battles, especially in the United States, where creationism or intelligent design have been argued as alternative theories to be taught alongside evolution (Nelkin, 2000). In the United States, while evolution has been taught for years in public schools, this does not seem to have significantly shifted public opinion about creationism due to a literal interpretation of the Bible in many households (Baker, 2013). In some countries, especially in the Middle East, evolution is not widely accepted, even if it is taught in schools (Hameed, 2008; BouJaoude, et al., 2011). In secular Turkey, the majority of biology and science educators do not even accept evolution (Peker, Comert, and Kence, 2010). On the other hand, in Islamic Iran, the science curriculum in schools includes evolution and excludes any religious indoctrination from the Qur'ānic account of creation (Burton, 2010).

What is the debate really all about? For the purposes of this article, I define Muslim creationism as a belief in God creating things out of nothing (*creatio ex nihilo*); this belief is held by those who have a literal understanding of the Qur'ān. The concept of *creatio ex nihilo* was debated by early Muslim theologians and philosophers with a wide array of views (Fackenheim, 1947; Ālūsī, 1968). Many Orthodox Muslims today have been influenced by one of the most influential Islamic philosophical schools, the Ash'arī school, which has long debated the concept of *creatio ex nihilo*. However, even their rival, the Mu'tazilī theological school of thought, equally accepts the concept of *creatio ex nihilo*, and some of its philosophical stances still exist within some Shī'ī schools. These theological (*kalām*) schools of thought were influenced by Greek philosophy, and the concept of *creatio ex nihilo* may have come from Greek philosophy, and not from what the Qur'ān had initially intended.

The debate between evolutionists and creationists stems from the same debate between science and religion: Which is the best method to understand the world? Science uses evidence collected by observation, DNA mapping, and fossil-dating. The physical evidence is used to prove that some sort of evolution occurred within living organisms. This is a fact that cannot be denied, given the available evidence. However, many faithful Muslims, especially those who espouse an Ash'arī creed and who favor the interpretation of creation out of nothing, hold a completely different point of view. They are not as interested in the physical evidence as they are in the literal evidence from the Qur'ān.

The concept of *creatio ex nihilo* apparently existed in the biblical milieu that pre-dated the Qur'ān (O'Neill, 2002; Niehoff, 2006). As such, it would not be surprising for the Qur'ān to explicitly adopt such a concept. I examined the literal evidence from the Qur'ān to see if it does, in fact, present God creating the world *ex nihilo*. The methodology I use is philological, that is, to search if the meanings of the terms used in the Qur'ān, at least at the time the Qur'ān was written, provide us with a definitive and explicit understanding of *creatio ex nihilo*.

I need to be very clear about what this article is arguing and what it is not arguing. The purpose of this article is not to necessarily harmonize Islam with science. As such, I am neither debating Taner Edis' (2009) stance about the pitfalls of Muslim attempts to harmonize science and religion by downplaying the tensions between science and Islam nor am I epistemically analyzing how Muslims attempt to harmonize their faith with science, as Leif Stenberg (1996) does. I may not even fundamentally fit Stefano Bigliardi's definition of a 'new generation' of those who attempt to harmonize Islam with science (Bigliardi, 2014).

The purpose of this article is definitely not to state that the Qur'ān speaks of evolution, nor am I using the Qur'ān as evidence for evolution. The purpose of this article is also definitely not to state that evolution proves the inimitability of the Qur'ān by talking of this scientific theory centuries before the theory emerged. Many Muslims, who reject the notion of *creatio ex nihilo* and adopt the scientific theory of evolution, shy away from a literal reading of the Qur'ān. They try to debate and convince other Muslims and Muslim theologians to read the Qur'ān more spiritually. However, many Muslims and Muslim theologians may find it difficult to accept a non-literal reading of the Qur'ān. As such, the

debate between those two groups may appear to be unending, perpetually reaching a stumbling block. This article shows that even if we adopt a *literal* reading of the Qur'ān, we find that a literal reading has no basis for the concept of *creatio ex nihilo*. Therefore, accepting evolution would not contradict the faith of Muslims or Muslim theologians who remain faithful to a literal reading of the Qur'ān. Hence, university professors, who teach evolution to their Muslim students, could show that evolution need not conflict with their faith, even if they accept a literal reading of the Qur'ān.

Religious Views of Evolution

There is a wide range of views from various religious perspectives on the issue of evolution. The Catholic Church, for example, holds no official position on evolution. It gives the idea that it is possible for the human body to have evolved biologically from various other organisms, but insists that the human soul is a special creation by God. The papal encyclical, *Humani generis*, by Pope Pius XII in 1950, says:

For these reasons the Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter - for the Catholic faith obliges us to hold that souls are immediately created by God (*Humani generis*, 36).

The Orthodox Church, similar to the Catholic Church, is flexible in not always interpreting the Bible literally (Breck, 2001). This flexibility in biblical interpretation allows adherents to the Orthodox Church to have multiple views of the nature of creation without necessarily rejecting scientific theories of evolution, while maintaining that the human soul is directly from God. At the same time, adherents still have the freedom not to reject creation of the human out of nothing (Bulgakov, 2002, pp. 168-182).

Many creationists within conservative Protestant Christian churches are divided into different camps. Young earth creationists believe that creation of the universe occurred a few thousand years ago (Numbers, 1993, p. 19; Scott, 1997). Old earth creationists believe that the earth

is ancient, and not confined to few thousands of years (Numbers, 1993, p. 19). There are those who argue for intelligent design, in which the universe appears to have been conceived by a conscious creator, but intelligent design advocates do not directly identify this intelligent agent as God (Numbers, 1993, p. 19). On the other hand, Judaism generally accepts evolutionary biology, but rejects principles of natural selection (Cherry, 2001), as Jewish thought does not typically remove God from the process, and thus promotes a theist evolutionary view.

The Baha'i faith believes in the total unity and harmony between science and religion. Abdul-Baha' (d. 1921), the son of the founder and the promulgator of the faith, has explained this concept:

Any religious belief which is not conformable with scientific proof and investigation is superstition, for true science is reason and reality, and religion is essentially reality and pure reason; therefore the two must correspond. Religious teaching which is at variance with science and reason is human invention and imagination unworthy of acceptance, for the antithesis and opposite of knowledge is superstition born of the ignorance of man. If we say religion is opposed to science we either lack knowledge of true science or true religion, for both are founded upon the premises and conclusions of reason and both must bear its test. (Abdul-Baha', 1922, p.103)

Since Abdul-Baha' knew of the Darwinian theory of evolution, he did not generally reject evolution but believed that God had a direct command in it. Nonetheless, he invariably insisted in the special creation of the human being as mirroring the attributes of God. Accordingly, the Baha'i faith looks favourably into what could be known as a theistic evolutionary theory, with a special recognition of the creation of the human soul (Brown, 2001).

In Islam, one of the earliest reactions to Darwin's theory was in the late nineteenth century by Jamāluddīn al-Afghānī, a famous Muslim reformer. Although he was strongly pro-science, and saw science education as the prerequisite for Muslim empowerment and autonomy of the Muslim community against colonial powers, he initially rejected the theory of evolution and considered it very materialistic, a notion shared by many contemporary Turkish creationists (Riexinger, 2008). However, al-Afghānī later recanted, stating that he had not understood

evolution at first. When he did, he said that Islam does not argue against evolution, while he maintained the special creation of the human soul to be directly from God (Bezirgan, 1988, pp. 379-386). This is not dissimilar to the Catholic stance today. Al-Afghānī also stated that the theory had been known by Muslims in the past. Perhaps al-Afghānī was pointing to al-Jāhīz (d. 255/869), who proposed some sort of animal evolution in *Kitāb al-Ḥayawān* (Book of Animals), or to human evolution from animals, as presented by Ibn Khaldūn (d. 808/1406) in his *al-Muqaddimah* (The Introduction). Otherwise, al-Afghānī might have had in mind Naṣīr al-Dīn al-Ṭūsī (d. 672/1274), whose theories in *Akhlāq Nāṣirī* (Nasirean Ethics) distinguished living things by separate categories or stations (Alakbarli, 2001; Shoja and Tubbs, 2007). Ibn Khaldūn appears to have been influenced by al-Ṭūsī, whom he referred to in his *al-Muqaddimah* as one of the best non-Arab scholars, which might suggest that al-Ṭūsī had some influence on Ibn Khaldūn where biological evolution was concerned. Al-Ṭūsī proposed some sort of evolution of species, including humans, by adaptation in order to reach perfection of faculties:

Beyond this station are animals in whom irascible faculty manifests itself, so that they may be on their guard against the repugnant: this faculty likewise varies in them, the organ of each being constructed and adapted in accordance with the faculty's dimension. Those which reach this stage of perfection in this respect are distinguished by fully developed weapons. (Al-Ṭūsī, 2011, p. 2: 45)

Nonetheless, al-Ṭūsī attributed to a creator god the ability of species to adapt and reach the status of perfection in their station. However, he did provide some agency to willpower and reason, especially when it comes to human beings:

Up to this limit, every gradation and discrepancy occurs in conformity with nature, but henceforth ranks of perfection or deficiency are determined according to will and reason. Thus all men in whom these faculties are complete, and who are able (by use of organs and deduction of premisses [*sic*]) to bring them from deficiency to better perfection, enjoy a greater virtue and nobility than those in whom such notions are less developed. (Al-Ṭūsī, 2011, p. 2: 45)

When discussing animals, al-Ṭūsī considered their biological adaptation, but this is not necessarily the case with humans; he considered perfection for humans as more of a mental exercise or as the result of revelation and inspiration (Al-Ṭūsī, 2011, p. 2: 45). This further exemplifies that al-Ṭūsī considered nature to be governed by a creator god.

The Aḥmadiyya movement in Islam, which also started in the nineteenth century, is a promulgator of evolutionary creation. In Ismā'īlī cosmology (excluding the Bohra), the Spiritual Adam incarnates into Earthly Adams (prophets), in which the first Adam was the first incarnation of the Spiritual Adam and started the Adamic Cycle, but he was not necessarily the first human (Corbin, 2010).

Nonetheless, mainstream Muslims, from within Sunnī and Shī'ī schools of thought, argue against evolution, primarily due to the notion of the origin of the human being. According to perceived Islamic thought, the first human was Adam, who had been created by the hands of God. However, many Muslims would find difficulty agreeing with a theory that states Adam was not created by the hands of God and had descended from a common ancestor with apes, who themselves might have evolved at some point in time from single-cell organisms. Are Muslims emotional in their belief against evolution, or does the Qur'ān truly state a creationist worldview when taken literally?

David Jalajel (2000) has comprehensively reviewed evolution from the perspective of Islamic orthodoxy. In his review, he gives the same credence to prophetic tradition (*ḥadīth*) as he does to the Qur'ān. Most of the prophetic tradition was reported in written form, more than a century after the Qur'ān was codified. Nonetheless, Jalajel concludes that Islamic orthodoxy implies a creationist worldview, when taking scriptures literally. However, Ḥusām Ālūsī suggests that when accepting the Qur'ān literally, one would resort to anthropomorphic view of God in the Qur'ān (Ālūsī, 1968, p.111). In this article, I will not delve into the sayings of prophetic tradition (*ḥadīth*), as our earliest written accounts of such were written decades and even centuries after the death of Muḥammad. Different Muslims assign these prophetic traditions (*ḥadīth*) varying levels of reliability. Instead, it is the literal understanding of the Qur'an, the main scripture accepted by all Muslims without dispute, in the story of creation that will be placed under the microscope in this article.

Typically, religious scholars such as Ṭanṭāwī Jawharī (d. 1940) who try to bridge the gap between science and religion by accepting the truth of evolutionary creation or theistic evolution, primarily use a spiritual interpretation of scriptures instead of a literal one (Khir, 2000; Ayoub, 2005, pp. 173-190). Ṭanṭāwī Jawharī interprets the evolutionary stages of a fetus in the Qur'ān as a basis for evolution in his commentary *al-Jawāhir* (The Gems) (Jawharī, 1932). Similarly, some Muslim scientists today consider the Qur'ān mainly a spiritual book that guides its adherents and that it even requires them to pursue the sciences, but they do not think that it is necessarily to be taken literally when attempting to scientifically explain natural phenomena. In Nidhal Guessoum's *Islam's Quantum Question*, he argues that the theory of evolution is not contrary to Islam's core principles and suggests that the more literal an interpretation is, the more problems there will be in harmonizing science with Islam (Guessoum, 2011). In my own opinion, I fully agree that the Qur'ān is not a science textbook and that Muḥammad did not intend it that way. Muḥammad seemed to be more interested in focusing his followers towards God, who created the world, and not focusing on scientifically explaining natural phenomena. As such, I agree with many Muslim scientists, like Mehdi Golshani (1986), Nidhal Guessoum (2011), and Rana Dajani (2012; 2015) that we should not seek evidence from the Qur'ān to prove scientific theories, and we should not seek scientific theories to prove that the Qur'ān is factual, which some Muslim scientists, such as Zaghoul el-Naggar (2003; 2006; 2007), do. Taner Edis (2007) finds attempts to harmonize science with religion futile and thinks that Muslim societies need to desist from trying to use scientific discoveries as ways to prove the Qur'aān contains scientific facts. Although I disagree that harmonizing science with religion (or philosophy) is pointless, I agree that the Qur'ān does not appear to have been intended as a scientific textbook.

This article does not argue that the Qur'ān speaks of evolution, but that a literal reading of the Qur'ān does not espouse a concept of *creatio ex nihilo*, and therefore, does not reject evolution outright. Therefore, Muslim theologians and scientists who accept the concept of *creatio ex nihilo* will find that the Qur'ān cannot be a basis for their arguments.

Science might be understood as the human interpretation of the world. To some faithful Christians and Muslims, the world may be viewed as a revelation from God, as inferred from both the Bible (i.e., Romans 1:20)

and the Qur'ān (i.e., Qur'ān. 3:191). However, our interpretation of the world around us might be fallible. I think any scientist would agree that our understanding of science evolves as we learn and discover new things. If we say that scriptures and the world are both revelations and that our interpretation of the world, which is science, can be fallible, then can we not infer that our interpretation of scriptures can also be fallible? Thus, if we undertake a literal understanding of the Qur'ān regarding creation, do we find the Qur'ān literally espousing the concept of *creatio ex nihilo*?

Analyzing the Literal Meaning of Creation in the Qur'ān

The literal term for creation used by the Qur'ān is the Arabic root *khlq*. The root has various meanings, including 'creation', 'invention', 'generation', 'fate', 'behavior', and 'morality' (Gesenius, 1979; Ibn Manzūr, 1994; Brown, Driver, and Briggs, 1996; Hebrew Union College). It also means 'to split', 'to divide', 'to apportion', and 'to distribute', and the Hebrew Bible uses the same root primarily in that definition. Another term used by the Qur'ān that is also understood as 'creation' is *fuṭūr*, which, among other definitions, also means 'to split' or 'to divide' (Gesenius, 1979; Ibn Manzūr, 1994; Brown, Driver, and Briggs, 1996; Hebrew Union College). Nonetheless, the Qur'ān has also used the term *khalaqa* to mean splitting and dividing, as will be seen in some examples later.

The Hebrew Bible more often uses another root for creation, which is *bra'*. The same term is used in the Qur'ān for 'creation' (e.g., Qur'ān, 2:54, 59:24). The term means 'to split' or 'to divide', but also means 'creation', 'invention', 'generation', 'fate', 'stranger', 'foreigner', 'profane', 'pagan', 'to be strong', 'to be healthy', or 'to be free from guilt' (Gesenius, 1979; Ibn Manzūr, 1994; Brown, Driver, and Briggs, 1996; Hebrew Union College). While the root *bra'* means 'to split' or 'to divide' (Gesenius, 1979; Ibn Manzūr, 1994; Brown, Driver, and Briggs, 1996; Hebrew Union College), it is also used to mean 'foreigner', which can be seen as a division between us and them. Similarly, it would mean 'pagan' because it differentiates between believers and non-believers. Also, it would mean 'to be healthy' because it separates the healthy from the diseased, as well as 'to be free of guilt' as it separates a person from sin.

Linguistically, if the literal terms for creation, *khlq* or *bra'* in the Qur'ān and the Hebrew Bible, mean 'to split' and 'to divide', then it is quite fitting scientifically, because every living organism reproduces and grows through a process of cell division, whether through sexual fertilization or mitosis. Therefore, we can literally call the process of cell division as *khlq* or *bra'*, which is understood as creation.

The following verses, which describe fetal evolution in the womb, make better sense if the term 'creation' (*khlq*) is understood as the process of cell division rather than creation out of nothing (*creatio ex nihilo*) in its proper sense. The text shows that the fetal clot *divided* to become a fetal lump, which then *divided* to become bones, and so forth. The second verse below even describes part of the fetus that is formed and unformed by using the term *mukhallaqa*, which shares the root *khlq*. This verse does not describe creation in the strict sense, but more precisely describes division.

Then of the drop We divided [created; *khalaqnā*] a blood clot, then of the blood clot We divided [created;*khalaqnā*] a lump of flesh, then of the lump of flesh We divided [created;*khalaqnā*] bones and We clothed the bones with flesh; then We brought him into being as another division [creature; *khalq*] creation. Blessed is God, the best of dividers [creators; *al-khāliqīn*]! (23:14)²

O humankind! If you are in doubt concerning the Resurrection, [remember] We divided [created; *khalaqnākum*] you from dust, then from a drop, then from a blood clot, then from a lump of flesh, partly divided [formed; *mukhallaqa*] and partly undivided [unformed; *mukhallaqa*], that We may make clear for you. And We cause what We will to remain in the wombs for a term appointed. Then We bring you forth as an infant, then that you may reach maturity. And some are taken in death, and some are consigned to the most abject life, so that after having known they may know nothing. And thou seest the earth desiccated, but when We send down water upon it, it stirs and swells and produces every delightful kind. (22:5)³

Many Muslims understand creation (*khlq*) in the Qur'ān as creation out of nothing (*creatio ex nihilo*). However, as portrayed above, it does not literally mean that. It literally means 'to split' or 'to divide'. Therefore, the literal definition of the term used in the Qur'ān does not contradict science, but agrees to it physically and biologically. If something is being

split or separated, then it must be dividing from something that already exists, and not out of nothing (*ex nihilo*). When describing creation, the Qur'ān refers to creation from something and not out of nothing (*ex nihilo*), such as the human is created from dust, clay, sperm, and so forth. In other words, if something is being created from something else, it is being split or separated from that thing. For example, the Qur'ān states that the human was *khlq* from clay, which could mean that some of the clay was separated (divided), apportioned, and measured to form the human.

He separated [created; *khalaqa*] the human from dried clay, like earthen vessels. (55:14)⁴

Truly We divided [created; *khalaqnā*] the human from a drop of mixed fluid that We may test him, and We endowed him with hearing and seeing. (76:2)⁵

Divided [separated, created; *khalaqa*] the human from a clinging ('*alaq*). (96:2)⁶

If the literal meaning of creation in the Qur'ān is 'to split' or 'to divide', which parallels physical science and biology, then where in the Qur'ān do creationists find the concept of creation out of nothing (*creatio ex nihilo*)?

The Concept of 'Out of Nothing' in the Qur'ān

The Qur'ān has three significant verses that appear to prove the case of creation out of nothing (*creatio ex nihilo*). The following passage clearly states that God created the human and the human was created out of something ('a drop of mixed fluid'), not out of nothing. It shows that there had been a long time when the human was nothing remembered, although it is vague on who is the one not remembering, the human, another being, or God.

¹ Has there come upon the human a span of time in which he was (*yakun*) a thing unremembered (*madhkūrā*)? ² Truly We divided [created] (*khalaqnā*) the human from a drop of mixed fluid that We may test him, and We endowed him with hearing and seeing. (76:1–2)⁷

This passage brings up a question whether the human was something (existing), but not anything remembered or was not anything in the strict sense (non-existent). However, there is also another way to understand

the term *madhkūrā* ('remembered') in the Qur'ān. The Arabic *madhkūrā* is from the root *dhakar*, which means 'remember', but also means 'male' or the 'male organ'. Therefore, this verse could be referring to the period before birth, because if the sperm is passing through the male organ (*dhakar*), then, according to Arabic grammar, the sperm would also be called something *madhkūr* (having passed through the *dhakar*) as a past participle. Therefore, before the sperm passes through the male organ, although it does exist, it is not yet *madhkūr*, as it has not yet passed through the male organ (*dhakar*). Actually, the second verse in the passage does state that the human was created out of something, which is the sperm, and since the term for creation (*khlq*) means 'to split' or 'to divide', then the above verses could be describing the process of splitting and dividing that occurs once a sperm fertilizes an ovum after having passed through the male organ (*madhkūr*) and that is how the human is created.

Another verse in the Qur'ān seems to state that the human had been created before and *had been* nothing.

Does the human not remember (*yadhkur*) that We divided [created] him (*khalaqnāhu*) before, when he had been (*yaku*) nothing? (19:67)⁸

Interestingly, both this verse and the previous passage are posing a question, albeit rhetorical: Was the human nothing remembered, or does the human remember he had been nothing? In addition, this verse uses the word 'remember' (*yadhkur*), which shares the same root with *madhkūrā*. However, the word here appears to mean that the human was nothing in a strict sense, and not necessarily that the human was not anything remembered (*madhkūrā*). Conversely, that is not necessarily the case. It depends on who is remembering and who is not remembering. Do I remember when I was nothing (as stated by the above verse)? No, I do not remember. Therefore, has there not come a time when I was nothing remembered by myself (as stated by the earlier passage)? Yes, there has come a time when I was nothing remembered by myself. In that case, are both verses simply saying the human was nothing in the strict sense (non-existent) or specifically nothing remembered (existing, but not remembered)? It is ambiguous, and I will let you decide that.

A third verse, in the same chapter as the verse above, is more specific to Zechariah, the father of John the Baptist, when he was surprised by the news of him being granted a child.

He said, 'Thus shall it be. Thy Lord says, "It is easy for Me!
I had divided [created] thee (*khalāqtuka*) before, when thou
had been (*taku*) nothing!"' (19:9)⁹

This verse also seems to be related with the term 'remember' (*dhakar*). This verse addresses Zechariah saying that *Zechariah* was created before and he had been nothing. The word 'Zechariah' consists of *zakar* and *Yah*. In Hebrew, *zakar* means 'remember', 'male', or 'male organ', and is a cognate of the Arabic *dhakar*. The word *Yah* means 'God' (*Yahweh*). Hence, 'Zechariah' means 'God has remembered', 'the remembrance of God', or even 'God's phallus'. In addition, chapter 19 of the Qur'ān begins with the story of Zechariah and uses the word *dhikr*.

A reminder (*dhikr*) of the Mercy (*rahmah*) of thy Lord unto
His servant, Zechariah. (19:2)

According to the Qur'ān, God granted Zechariah a son. The term *dhikr* is related to the male organ. The term for mercy (*rahmah*) shares the same root as womb (*rahm*). What is the significance of this? To make a child, or create the human, the sperm fertilizes the ovum, and then it splits into a new creation. This means that the male organ (*dhakar*) enters the womb (*rahm*), just as the story of Zechariah starts in the above verse. Coming back to the point, Q, 19:9 states that Zechariah was created before and he had been nothing. So was he nothing in the strict sense (non-existent), or was he nothing remembered (existing, but not remembered), while keeping in mind that his name means God has remembered (so was he not remembered by God)?

Besides using the terminology for remember (*dhakar*), there is another key word, which I find even more significant in the understanding of creation that would cover any sort of ambiguity on whether the human was created before and had been nothing or nothing remembered. All those three verses, stated previously, portray that the human was created, and *had been* nothing. Each time the term nothing is used, it explicitly was preceded by the term 'to be'. Thus, the human *had been* nothing. What does this mean? We must look carefully at what the Qur'ān means when using the term 'be'.

To Be or Not to Be

Creationists believe that God can create anything at will by simply saying to it, 'Be', and it becomes. As such, the word 'be' has become

known as the word of creation. Starting with Genesis, to represent creation, God uses the word 'be', which in Hebrew is *yhy*. When

Moses asks God to identify himself in Exodus 3:14, the answer is, '*ehyeh asher ehyeh*' ('I am that I am'). As such, God identifies himself with the word 'be'. There have been suggestions by some scholars that the name of God in the Hebrew Bible, *Yhwh*, might be rooted in the term 'be' (Reisel, 1957; Buber, 1958, p. 53; Brownlee, 1977; Parke-Taylor, 1975; Ahlstrom, 1986, pp. 59-60; Mettinger, 1987; de Moor, 1997, pp. 108-136).¹⁰ The name *Yhwh* may be understood as the Being.¹¹

The Qur'ān also portrays God's ability to make things by simply saying 'Be', and it becomes. The Qur'ān states that Jesus was created in similitude to Adam, as shown in the following verse:

Truly the likeness of Jesus in the sight of God is that of Adam; He separated [created] him (*khalaqahu*) from dust, then (*thumma*) said to him, 'Be!' and he becomes (*kun fa-yakūn*). (3:59)¹²

Looking carefully, we realize that Adam was not created out of nothing (*ex nihilo*), but out of something, which is dust. We can always question where the dust came from. Adam was created even before God uses the word 'Be'. Additionally, God created Adam from dust, and *then* said to him 'Be'. There are two forms of the term 'then' in Arabic, *fa-* and *thumma*. The term *fa-* is usually understood to mean 'immediately after', while the term *thumma* is usually understood to mean 'after a while'.¹³ The above verse uses the term *thumma*, which implies that God created Adam from dust, and *then* ('after a while') said to him 'Be'. Immediately after (*fa-*) saying 'Be', Adam becomes. Using the term *thumma* implies that God's saying 'Be' occurs *after a while* and that saying 'Be' is not necessarily a *direct consequence* of creating from dust. It is the term *fa-* that implies the 'becoming' (*yakūn*) is a direct consequence of God saying 'Be' (*kun*). The Qur'ān explicitly shows that God did not say 'Be' in order to create. The Qur'ān distinguishes between creation and being. They are *not* the same. God created and then (after a while) said, 'Be'. Saying 'Be' is not necessarily a consequence of God's creation.

This brings us back to our first passage, Qur'ān 76:1–2 in the previous section, which asks if there was not a long period of time (a while) when the human *had been* nothing remembered. Qur'ān 19:67,

from the previous section, also asks if the human remembers that he was created *before*, and *had been* nothing. The same is also seen in the verse about Zechariah, who was also created *before*, and *had been* nothing (i.e. Qur'ān, 19:9). The Qur'ān could be understood as saying that the human was created before, but *had been* nothing. It is not necessarily saying that the human was created from nothing, but that the human was created, but was not a being. This brings forth philosophical questioning of ontological proportions.

If that is the case from the three primary verses that are usually cited as obvious proof of creation out of nothing (*ex nihilo*) in the Qur'ān, then we find them to be gravely lacking. If we take the literal meaning and understanding of the Qur'ān, it does not seem to support such a concept. This brings a shadow of doubt on whether the concept of *creatio ex nihilo* is based on a literal understanding of the Qur'ān.

Regarding the verse that shows the creation of Jesus is similar to that of Adam, there is a question that I would like to pose. The Qur'ān repeatedly describes how Jesus is begotten through the word 'Be' (e.g. Qur'ān, 3:47, 3:59, 19:35), but it does not mean instantaneous creation or as stated above, not even creation at all, but being. The reason that it is not even instantaneous creation is because even though the Qur'ān shows God said 'Be' to Jesus, he was not made into an adult immediately, but still had to undergo the evolution of a fetus in his mother's womb, though without a father, and still had to be born and grown unto adulthood. Therefore, whenever the Qur'ān uses the term *kun f-yakūn* ('be and it becomes'), it should not necessarily be understood as instantaneous creation or even *creatio ex nihilo*, as this is clearly not the case of Jesus. Hence, one should not jump to the conclusion that whenever the Qur'ān uses this term in regards to the heavens and the earth that it is to be understood as instantaneous creation or *creatio ex nihilo* either (e.g. Qur'ān 2:117, 6:73, 36:82).

In addition, if Jesus's creation is like that of Adam's, according to the Qur'ān, does that imply that Adam also had to undergo fetal development, birth, and growth unto adulthood? Classical exegetes argue that the Qur'ān states that Jesus' creation is like that of Adam's, in which both cases were miracles and not a result of a natural, biological conception and birth (Al-Ṭabarī, 2001, pp. 6: 467-471; al-Rāzī, 2000, pp. 8: 242-243; al-Qurṭubī, 1964, pp. 4: 102-103; Ibn Kathīr, 1999, pp.

2: 48-49). They consider the creation of Adam to have been a greater miracle, having neither father nor mother. Be that as it may, if I take a very literal understanding of the Qur'ān, then I might understand Jesus' creation being the same as Adam's creation in every literal way. Since we know how Jesus was born, then that might as well be the case for Adam, that is, if I take a very literal understanding of the Qur'ān. Therefore, a literal reading of the Qur'ān cannot be used as evidence for the concept of *creatio ex nihilo*.

Creation and Being in Genesis

The Hebrew Bible starts with the story of creation of the universe in the Book of Genesis, using the term *bra'* for creation, which also means 'to split' or 'to divide':

¹ In the beginning God divided [created; *bra'*] the heavens and the earth. ² Now the earth was (*haytah*) formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters. ³ And God said, 'Let there be (*yhy*) light,' and there was (*w-yhy*) light. ⁴ God saw that the light was good, and He separated the light from the darkness. ⁵ God called the light 'day', and the darkness He called 'night'. And there was (*w-yhy*) evening, and there was (*w-yhy*) morning—the first day. (Genesis 1:1–5)

Similar to the term *khlq*, *bra'* also means 'to split' or 'to divide'. These terms are used to mean creation because they could be stating that things are created through a process of division, which does not really contradict modern science. What is interesting in Genesis is that it states that God created the heavens and the earth, and that the earth '*had been* (*haytah*) nothing'. Interestingly, Genesis might here be differentiating between creation and being. Furthermore, if we understand that *bra'* also means 'to split' or 'to divide', then we can also understand that Genesis states, 'In the beginning, God divided the heavens and the earth'. This very much parallels the following verse from the Qur'ān:

Do not the Unbelievers see that the heavens and the earth were joined together (*ratqan*) and We separated them (*fataqnāhumā*)? We made from water every living thing. Will they not believe? (21:30)

If we understand the term for creation, *bra'*, to mean 'separation', then whenever the Qur'ān or Genesis talks about the creation of the heavens

and the earth, they can be understood as referring to the separation of the heavens and the earth, and not necessarily creating them from nothing (*ex nihilo*). Perhaps the heavens and the earth were created through a process of separation. However, it is even more complex than that, since both the Genesis and the Qur'ān portray creation preceding being. This then poses the question that if something is created, but not yet a being, then what is it and what is the state of being? That is an ontological question and beyond the scope of this article.

Genesis relates the creation of the human, but does not necessarily show the method of creation:

²⁶ Then God said, 'Let Us make mankind in Our image, in Our likeness, so that they may rule over the fish in the sea and the birds in the sky, over the livestock and all the wild animals, and over all the creatures that move along the ground'.

²⁷ So God divided [created; *yabra'*] mankind in His own image, in the image of God He divided [created; *bra'*] them; male and female He divided [created; *bra'*] them. (Genesis 1:26–27)

What it means to be in the image of God is a very old debate and can hold various meanings within various traditions. The understanding can range from anthropomorphic descriptions of God, as it is in the Church of Latter Day Saints in which God the Father is literally portrayed as a physical man, to a very spiritual nature as it is in mainstream Judaism and Christianity in which God is portrayed as a spirit devoid of any physical being. However, if we consider young earth creationism as an attempt to take literally the length of time in Genesis, then how could we understand the concept of 'in the image of God', unless we provide an anthropomorphic description of God?

The above verses do not give a full description of the method of creation. Nonetheless, if we take the terms 'to split' or 'to separate' in place of 'creation', we might find that it could make sense when Genesis states that 'male and female he divided (separated) them' (Genesis 1:27). One wonders if humanity was simply divided from the image of God. The second chapter of Genesis says that the method of creation is from dust.

⁷ Then the LORD God formed a man from the dust of the ground and breathed into his nostrils the breath of life, and the man became (*yhy*) a living soul. (Genesis 2:7)

The formation of the human is different from the *becoming* of the human. We realize that the human was first formed from dust, but the human was not yet a being. The term ‘to be’ (*yhy*) occurs only after the formation and not necessarily as the cause of formation. Perhaps it is for that reason the Catholic Church keeps an open mind about the creation of the human body from different matter, but the soul is a distinct creation of God. Besides, even though it seems from this verse that the human has only become a being after having a living soul, it is also apparent from both the Genesis and the Qur’ān that the term ‘to be’ is not only used for living organisms, but also for other objects, as when God said, ‘Let there be light’. This is somewhat abstract, because if we consider the soul as the source of being, then does it mean that the being of non-living organisms actually has a consciousness, or are we talking about panentheism? Perhaps the first chapter of Genesis might be talking about being from a spiritual sense as an ontological being and not a physical sense of formation. If we take a literal understanding of the Qur’ān, then we discover that there is no indisputable evidence to the concept of *creatio ex nihilo*.

Evolutionary Creation

Our knowledge of evolution is imperfect, but the evidence of evolution cannot be ignored. The Qur’ān, when taken literally, does not necessarily endorse an understanding of *creatio ex nihilo*. In addition the following verse appears to explicitly portray that God does not create things instantaneously.

Seeing that He that has divided [created] you in diverse stages (*khalaqakum aṭwārā*). (71:14)

The above verse brings together the terms of division or creation (*khlq*) and stages (or evolution) (*atwār*). Classical commentators of the Qur’ān, such as al-Ṭabarī (d. 923), al-Rāzī (d. 1209), Ibn Kathīr (d. 1373), and many others, interpret this verse as referring to the natural fetal evolutionary stages (Al-Ṭabarī, 2001, pp. 23: 635-636; al-Rāzī, 2000, p. 30: 653; Ibn Kathīr, 1999, p. 8: 233). Al-Qurṭubī (d. 1273) extends the meaning to include not only the evolutionary stages of a fetus, but also the birth, growth, and death of a human being (Al-

Qurṭubī, 1964, pp. 18: 303-304). Al-Rāzī, al-Qurṭubī, and al-Ṭabarsī commented that it could possibly mean different types of people and personalities (Al-Rāzī, 2000, p. 30: 653; al-Qurṭubī, 1964, pp. 18: 303-304; Ibn Kathīr, 1999, pp. 2: 48-49; al-Ṭabarsī, n.d., p. 10: 134). These various possible interpretations from classical commentators show that these are mostly opinions. The theory of evolution as we know it today did not exist then. If they had known the scientific theories pertaining to evolution, they may have interpreted this verse as evolutionary creation. I am not at all arguing that the Qur'ān is literally and explicitly supporting evolutionary creation. However, if classical commentators have influenced modern Muslim societies today, though not explicitly accepting *creatio ex nihilo*, but neither rejecting it, then moving along with their same logical method of reasoning for the knowledge they had at the time, they might have been open to the concept of evolution.

Many contemporary Muslim scientists who do not take the Qur'ān literally accept that evolution does not contradict the Qur'ān. However, I would like to reiterate that they will find that their arguments would still stand even if they choose to take the Qur'ān literally.

Conclusion

If this world is a revelation from God, then it is infallible. If scriptures are revelations from God, then they also are infallible. However, if science is an interpretation of God's revelation of this world, and we know how science can sometimes err due to misinterpretation of data, then there is no doubt that our interpretation of scriptures can equally be misconstrued. We must remember that first and foremost, the purpose of religion is to seek the truth; the purpose of science is to seek the truth as well. If we accept the concept that this world is a revelation from God that is infallible, though our interpretation (science) may not be, then we find ourselves in an interesting situation. If our interpretation of scriptures contradicts our interpretation of this world (science), then we must go back and re-examine our interpretations through objective dialogue and not silly arguments, where we call either science or religion to be materialistic, bizarre, or superstitious. Those who are ignorant of modern quantum physics will claim that quantum physics is superstition. However, theologians would also claim that those who are ignorant of the nature of their belief may also accuse it of superstition.

Societies today have various views about evolution and creation, as they are influenced by scientific and religious debates. We must

remember that the point is to seek the truth, whatever it may be. We are not here to prove if something exists or not. A theologian would consider the truth as God. A Buddhist or a scientist would define truth more abstractly, and that is not to say that the concept of God is not abstract in itself. Hence, we should not allow semantics to be our obstacle. Al-Ghazālī (d. 1111) said in his *Iḥyā'* that when two parties come together for a debate, it is imperative that each party comes with the intention to sincerely seek the truth and to be ready to change their convictions accordingly:

The seeker of truth must be like the one looking for his lost camel, making no difference whether he finds his own camel or someone helping him finds it for him. As such, he sees the one helping him as a companion and not as an opponent, while thanking him for making him realize his wrong way and showing him the correct path in finding his lost camel. Accordingly, he thanks him and not curses him, while honoring and rejoicing in him. (Al-Ghazālī, 2004, pp.1: 62-63, my translation)

We are not here to prove one point or another. We are not here to be defensive. We are here together in a journey to seek the truth and to understand where we come from and where we are going, not just as humans or human beings (as those two are not necessarily the same), but as a whole universe. If this universe is a revelation from God, then we must try to interpret it, and science provides a method for such interpretation.

The astounding scientific evidence for evolution cannot be ignored. To counter the worldview of creationists, who have a concept of *creatio ex nihilo*, is not to attack them with facts, if the very basis of science does not appease them. However, to show creationists that a literal understanding of their own scriptures disagrees with their own interpretation thereof provides us with a framework for dialogue. However, school children would not be able to formulate arguments such as these, unless a creationist worldview is taught such that its weaknesses may be exposed. Teaching philosophy and possibly religion in schools is important to allow children not only to learn, but also to think and to formulate arguments. It is the free-flow of ideas that brings forth creativity. We must not place restrictions, but allow for freedom and objective dialogue. I reject the concept that children cannot think for

themselves. Provide them with the information and let them decide on the conclusion. Through such an interaction, concepts will mutate and evolve. Maybe science and religion will no longer become a polarity, but will be intertwined as a DNA's double helix that defines the origin of life.

I am not necessarily a proponent of a literal interpretation of scriptures. However, if creationists use a literal interpretation as the very basis of their belief, then we find that the Qur'ān does not provide us with a creationist worldview. Conflicts occur due to misunderstandings and misinterpretations of the natural world or even scriptures. We can come to terms with each other. Whether there is such a thing as *creatio ex nihilo*, the Qur'ān neither indubitably states it nor denies it. As such, the Qur'ān does not literally provide a concept of creation out of nothing (*creatio ex nihilo*). If science ever proves that there is no such thing as *creatio ex nihilo* or if it ever proves that it is possible, it would not be at odds with the Qur'ān either way. Whether or not we take scriptures literally, science and the Qur'ān do not seem to be in conflict on the topic of evolution. Why then are we in conflict, when there is *literally* none?

Endnotes

1. The concept of *māyā* in Eastern traditions, such as Hinduism and Buddhism is the concept of illusion of the world, and not that it necessarily does not exist, but that it is relative as our perceptions of it would distort its true reality.
2. In this article, I use *The Study Quran* translation with changes noted; Seyyed Hossein Nasr (ed) *The Study Quran: A New Translation and Commentary* (San Francisco, CA: HarperOne, 2015). I use the term 'divide' for *khlq*, while putting mainstream translations [between brackets].
3. I changed the *TSQ* translation for *al-nās* to 'humankind' instead of 'mankind', as I find it more faithful to the Arabic.
4. I changed the *TSQ* translation for *al-insān* to 'human' instead of 'man', as I find it more faithful to the Arabic.
5. I changed the *TSQ* translation for *al-insān* to 'human' instead of 'man', as I find it more faithful to the Arabic.
6. I am grateful to Ulrika Mårtensson who has made a very interesting and beautiful observation here. Since the term *khalāq* means 'to divide' and the term '*alaq*' means 'to cling', then this Qur'anic verse could be portraying how

the human, who is clinging onto the womb, is divided and split apart from this clinging. In here I also changed the *TSQ* translation for *al-insān* to ‘human’ instead of ‘man’, as I find it more faithful to the Arabic. I also translate ‘*alaq*’ to clinging.

7. I changed the *TSQ* translation for *al-insān* to ‘human’ instead of ‘man’, as I find it more faithful to the Arabic.

8. I changed the *TSQ* translation for *al-insān* to ‘human’ instead of ‘man’, as I find it more faithful to the Arabic. I also changed the translation of *lam yaku shay’ā* to ‘had been nothing’ to be more consistent with similar verses.

9. I changed the *TSQ* translation for *lam taku shay’ā* to ‘had been nothing’ to be more consistent with similar verses.

10. There have been suggestions that the root of *yhwh* is possibly *hwy*, which means ‘to fall’ (Knauf, ‘Yahwe’, pp. 467–472), and perhaps in context could mean *tajallī* (‘immanence’) as it is used in Qur’an, 7:143 to denote when God reveals Himself to Moses.

11. If it is so, then the name Zechariah does not only mean ‘God has remembered’, but even more specifically, ‘Yhwh (Being) has remembered’.

12. I changed the *TSQ* translation for *kun f-yakūn* to ‘Be and he becomes’, as I find it more faithful to the Arabic.

13. The term *fa-* used is grammatically known to have two meanings, ‘conjoining’ (*‘atf*) and ‘following’ (*ittibā’*). This means that the conjoining also implies sequence (*tarīb*). See al-Mūṣali, *Al-Khaṣā’iṣ*, vol. 2, p. 198. Looking at it from the grammatical understanding, if it says *kun wa-yakūn*, it would mean ‘Be and (same time) it is’. This would imply only conjunction without sequence. On the other hand, if it says *kun thumma yakūn*, it would mean ‘Be, then (after a while) it is’. This would imply sequence, but unlike *fa-*, it does not assume necessarily an immediate consequence.

References

- Abdul-Baha’. (1922). *The Promulgation of Universal Peace: Discourses by Abdul Baha Abbas during His Visit to the United States in 1912*. Chicago, IL: Bahai Temple Unity.
- Ahlstrom, Gosta W. (1986). *Who Were the Israelites?* Winona Lake, IN: Eisenbrauns.
- Aimo, E. (1952). *A Philological and Literary Treatise on the Old Testament Divine Names ‘l, ‘lwh, ‘lhym, and Yhwh*. Helsinki: Societas Orientalis Fennica.
- Al-Ghazālī (d. 1111). (2004). *Iḥyā’ ‘ulūm al-dīn*, Muḥammad Muḥammad Tāmīr (Ed.). Cairo: Mu’assasat al-Mukhtār.

- Al-Mūṣali. (n.d.), *Al-Khaṣā'ish*. Cairo: Al-Hay'ah al-Miṣriyyah al-'Āmmah lil-Kitāb.
- Al-Qurṭubī (d. 1273). (1964). *Al-Jāmi' li-aḥkām al-Qur'ān*. Cairo: Dār al-Kutub al-Miṣriyyah.
- Al-Rāzī (d. 1209). (2000). *Mafātīḥ al-ghayb*. Beirut: Dār Iḥyā' al-Turāth al-'Arabī.
- Al-Ṭabarī (d. 923). (2000). *Jāmi' al-bayān fī ta'wīl al-Qur'ān*, Aḥmad Shākīr (Ed.). Mu'assasat al-Risālah.
- Al-Ṭūsī (d. 1274). (2011). *The Nasirean Ethics*, G. M. Wickens (Trans.). Abingdon: Routledge.
- Alakbarli, F. (2001). A 13th Century Darwin? Tusi's Views on Evolution. *Azerbaijan International*, 9(2), 48–49.
- Ālūsī, Ḥusām Muḥyī al-Dīn. (1968). *The Problem of Creation in Islamic thought, Qur'an, Hadith, Commentaries, and Kalam*. Baghdad: National Printing and Publishing Company.
- Ayoub, M.M. (2005). Creation or Evolution? The Reception of Darwinism in Modern Arab Thought. In Z.A. Bagir (Ed.), *Science and Religion in a Post-colonial World: Interfaith Perspectives*. Hindmarsh: ATF Press.
- Baker, J.O. (2013). Acceptance of Evolution and Support for Teaching Creationism in Public Schools: The Conditional Impact of Educational Attainment. *Journal for the Scientific Study of Religion*, 52(1), 216–228.
- Bezirgan, N.M. (1988). The Islamic World. In Thomas F. Glick (Ed.), *The Comparative Reception of Darwinism*. Chicago, IL: The University of Chicago Press, 379–386.
- Bigliardi, Stefano. (2014). The Contemporary Debate on the Harmony between Islam and Science: Emergence and Challenges of a New Generation. *Social Epistemology*, 28(2), 167–186.
- Botterweck, G.J. & Ringgren, H. (Eds.), J.T. Willis (Trans.). (1997). *Theological Dictionary of the Old Testament* (Revised Edition). Grand Rapids, MI: Eerdmans.
- BouJaoude, B., Asghar, A. Wiles, J.R. Jaber, L. Saredine, D. & Alters, B. (2011). Biology Professors' and Teachers' Positions Regarding Biological Evolution and Evolution Education in a Middle Eastern Society. *International Journal of Science Education*. 33(7), 979–1000.
- Breck, J. (2001). *Scripture in Tradition: The Bible and its Interpretation in the Orthodox Church*. New York, NY: St. Vladimir's Seminary Press.
- Brown, F., Driver, S.R., & Briggs, C.A. (1996). *Brown-Driver-Briggs Hebrew and English Lexicon*. Peabody, MA: Hendrickson.

- Brown, Kevin (Ed.). (2001). *Evolution and Baha'i Faith: 'Abdul-Baha's Responses to Nineteenth-Century Darwinism*. Los Angeles, CA: Kalimat Press.
- Brownlee, W.H. (1977). The Ineffable Name of God. *Bulletin of the American Schools of Oriental Research*, 226, 39–46.
- Buber, Martin. (1958). *Moses: The Revelation and the Covenant*. New York, NY: Harper and Brother.
- Bulgakov, S.N. (2002). *The Bride of the Lamb*, Boris Jakim (Trans.). Grand Rapids, MI: Eerdmans.
- Burton, E.K. (2010). Evolution and Creationism in Middle Eastern Education: A New Perspective. *Evolution*, 65(1), 301–304.
- Cherry, M.S. (2001). *Creation, Evolution and Jewish Thought*. PhD Dissertation, Brandeis University.
- Corbin, H. (2010). *Cyclical Time and Ismaili Gnosis*. Abingdon, UK: Routledge.
- Dajani, Rana. (2012). Evolution and Islam's Quantum Question. *Zygon: Journal of Religion and Science*, 47(2), 343–353.
- Dajani, Rana. (2015). Why I Teach Evolution to Muslim Students. *Nature*, 520(7548), 409.
- de Moor, Johannes C. (1997). *The Rise of Yahwism: The Roots of Israelite Monotheism*. Leuven: Peeters Publishers.
- Edis, Taner, (2007). *An Illusion of Harmony: Science and Religion in Islam*. Amherst, NY: Prometheus Books.
- Edis, Taner. (2009). Modern Science and Conservative Islam: An Uneasy Relationship. *Science & Education*, 18(6), 885–903.
- El-Naggar, Zaghoul. (2003). *Silsilah min āyāt al-i'jāz al-'ilmī fil-Qur'ān al-karīm* (3 volumes). Beirut: Dār al-Kutub al-'Ilmiyyah.
- El-Naggar, Zaghoul. (2006). *Haqā'iq 'ilmiyyah fil-Qur'ān al-karīm*. Beirut: Dār al-Ma'rifah.
- El-Naggar, Zaghoul. (2007). *Tafsīr al-āyāt al-kawniyyah fil-Qur'ān al-karīm* (4 volumes). Cairo: Maktabat al-Shurūq al-Dawliyyah.
- Fackenheim, Emil L. (1947). The Possibility of the Universe in Al-Farabi, Ibn Sina and Maimonides. *Proceedings of the American Academy for Jewish Research*, 16, 39–70.
- Farnham, T.J. & Kellert, S.R. (2002). Building the Bridge: Connecting Science, Religion, and Spirituality with the Natural World. In S.R. Kellert and T.J. Farnham (Eds.), *The Good in Nature and Humanity: Connecting Science, Religion, and Spirituality with the Natural World*. Washington, DC: Island Press, 1–8.

- Galadari, Abdulla. (2011). Science vs. Religion: The Debate End. *The International Journal of Science in Society*, 2(2), 1–9.
- Geraci, Robert M. (2002). Laboratory Ritual: Experimentation and the Advancement of Science. *Zygon* 37(4), 891–908.
- Gesenius, H.W.F. (1979). *Gesenius' Hebrew and Chaldee Lexicon to the Old Testament*. Ada, MI: Baker.
- Golshani, Mehdi. (1986). *The Holy Quran and the Sciences of Nature*. Binghamton, NY: Binghamton University.
- Guessoum, Nidhal. (2011). *Islam's Quantum Question: Reconciling Muslim Tradition and Modern Science*. London: I.B. Tauris.
- Hameed, S. (2008). Bracing for Islamic Creationism. *Science*, 322, 1637–1638.
- Hebrew Union College, Comprehensive Aramaic Lexicon Project, cal1.cn.huc.edu.
- Ibn Kathīr (d. 1373). (1999). *Tafsīr al-Qur'ān al-'azīm*. Dār Ṭībah lil-Nashr wil-Tawzī'.
- Ibn Manzūr (d. 1312). (1994). *Lisān al-'arab*. Beirut: Dār Ṣāḍir.
- Jalajel, D.S. (2009). *Islam and Biological Evolution: Exploring Classical Sources and Methodologies*. Western Cape: University of the Western Cape.
- Janzen, J. Gerald. (1979). What's in a Name? 'Yahweh' in Exodus 3 and the Wider Biblical Context. *Interpretation*, 33(3), 227–239.
- Jawharī, Ṭanṭāwī. (1932). *Al-Jawāhir fī tafsīr al-qur'ān al-karīm al-mushtamil 'ala 'ajā'ib badā'i' al-mukawwanāt wa-gharā'ib al-ayāt*, Muḥammad Amīn 'Imrān (Ed.). Cairo: Muṣṭafā al-Bābī al-Ḥalabī.
- Khīr, B.M. (2000). The Qur'an and Science: The Debate on the Validity of Scientific Interpretations. *Journal of Qur'anic Studies*, 2(2), 19–35.
- Knauf, Ernst A. (1984). Yahwe. *Vetus Testamentum*, 34(4), 467–472.
- Kuhn, Thomas S. (1962). *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.
- Marx, Karl, (d. 1883). (1982). *Critique of Hegel's 'Philosophy of Right'*, J. O'Malley (Ed.). Cambridge: Cambridge University Press.
- Mettinger, Tryggve N.D. (1987). *Namnet och närvaron: Gudsnamn och gudsbild I Böckernas Bok*. Örebro: Bokförlaget Libris.
- Nasr, Seyyed Hossein (Ed.). (2015). *The Study Quran: A New Translation and Commentary*. San Francisco, CA: HarperOne.
- Nelkin, D. (2000). *The Creation Controversy: Science or Scripture in the Schools*. Lincoln, NE: toExcel Press.

- Niehoff, Maren R. (2006). Creatio ex Nihilo Theology in Genesis Rabbah in Light of Christian Exegesis. *Harvard Theological Review*, 99(1), 37–64.
- Numbers, R.L. (1993). *The Creationists*. Berkeley, CA: University of California Press.
- O’Neill, J.C. (2002). How Early is the Doctrine of ‘Creatio ex Nihilo?’ *The Journal of Theological Studies*, 53(2), 449–465.
- Parke-Taylor, Geoffrey H. (1975). *Yahweh: The Divine Name in the Bible*. Waterloo: Wilfrid Laurier University Press.
- Peker, D., Comert, G.G., and Kence, A. (2010). Three Decades of Anti-evolution Campaign and Its Results: Turkish Undergraduates’ Acceptance and Understanding of the Biological Evolution Theory. *Science and Education*, 19, 739–755.
- Popper, K. (1983). *Realism and the Aim of Science*. Abingdon: Routledge.
- Reisel, Max. (1957). *The Mysterious Name of Y.H.W.H.: The Tetragrammaton in Connection with the Names of EHYEH ašer EHYEH-Hühā-and Šem Hammephôrās*. Assen: Van Gorcum; Murtonen.
- Riexinger, M. (2008). Propagating Islamic Creationism on the Internet. *Masaryk University Journal of Law and Technology* 2, 99–112.
- Scott, E.C. (1997). Antievolution and Creationism in the United States. *Annual Review of Anthropology*, 26, 263–289.
- Shoja, M.M. & Tubb, R.S. (2007). The History of Anatomy in Persia. *Journal of Anatomy* 210(4), 359–378.
- Stenberg, Leif. (1996). *Islamization of Science: Four Muslim Positions Developing an Islamic Modernity*. Uppsala: Almqvist & Wiksell International.