

"Can A Muslim Be An Evolutionist"

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To all innocents hurt in the Bosnian War (1992-1995)

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Preface

We all witness the dramatic roles that science and religion play in shaping our attitudes towards the universe. During the last couple of centuries, which have been dominated by the increasing authority of science, we have been challenged to establish the proper relations between these two fields. Having dedicated many years of academic life to the field of science-philosophy-religion interrelations, I can say that no other issue in this field has been more controversial and perplexing than the theory of evolution. The contentiousness of this issue is well-known even to the layman, so that, to the ears of general public, “science-religion” is synonymous with evolution-religion.

In this book we will address this "most controversial subject" within the framework of Islam. We will discuss whether the theory of evolution poses a conflict with this faith. Discussions on this matter often involve scrutiny of the reliability of the theory of evolution itself. As a result, two delicate matters get mingled with one another, obscuring the viability (scientific or religious) of this theory. But “Can a Muslim be an evolutionist?” and “Is the theory of evolution true?” are entirely distinct questions. While one may address these two questions in combination or separately, I have found that treating them separately is less prone to confusion. Therefrom, the primary focus of this book will be the first question “Can a Muslim be an evolutionist?” Or, to rephrase the question, does the theory of evolution contradict Islamic beliefs? I will base my arguments on modern scientific research, philosophical considerations and verses from the Quran. I have attempted to analyze all mainstream objections raised against the theory of evolution from various Muslims. As this book encompasses science, philosophy and theology, I note my firm commitment that these three domains cannot possess divergent truths.

My explorations of theory of evolution go back to my doctoral studies at Marmara University. I have done further research on the theory during my visiting scholarships at CMES of Harvard University and the Faraday Institute of Cambridge University. I have participated in numerous discussions and debates on television and delivered seminars and

lectures in universities. I have published a somewhat extended version of my dissertation in a book entitled. *The Theory of Evolution, Philosophy and God* (published in Turkish as *Evrin Teorisi, Felsefe ve Tanrı*). This book was devoted to philosophical and scientific perspectives on the theory of evolution, the development of the theory with regards to the philosophy of science, and arguments for the existence of God. I have noticed that many in my audiences are longing for a frank answer to the question: “Can a Muslim be an evolutionist?” That is why I decided to focus this book on this particular question.

In writing this book, I have accumulated many years of experience in the subject. All my colleagues who contributed to my doctoral studies and visiting scholarships at Harvard and Cambridge are to be acknowledged for their contributions to this book. I also deeply benefited from numerous people with whom I discussed related issues, and also who have critically read the book prior to its publication. I specially thank Kelly James Clark for his careful reading of my book and many insightful comments and suggestions. I am sincerely thankful to them, as well as to my readers for their interest. For comments, critiques and suggestions, please visit my web page www.canertaslaman.com, where you will also be able to access my other works.

Contemporary Perspectives on Science and Religion

We have witnessed the ever-increasing authority of science in modern times. Being “scientific” is now synonymous with being reliable. It might be hard to pinpoint an exact historical timeline of modern science; nevertheless, the significance of the scientific revolution in the 17th century is unquestioned. In this epoch, contributions by prominent natural philosophers (which we might now call scientists)—Descartes, Galileo, Kepler and particularly Newton—exponentially broadened our knowledge of and perspective on the universe.¹

Developments in science also influenced the emergence of the industrial revolution. The industrial revolution brought out new technologies, which transformed our lives and triggered profound socio-political transformations. These changes were manifest in every aspect of life, from personal to international relations, from the ways battles are fought to new modes of colonization. At the same time, the West saw a decline in the political and economic leverage of the Church, and the corresponding decline of religion’s authority in personal lives. Between the 9th and 13th centuries, science and philosophy were glorified by the Civilization of Islam. However, since the 17th century, the most influential developments in these fields have predominantly emerged from the Western-Christian world. During this period, the Muslim world imported from Western civilization not only scientific and technological developments, but also social ones including growing populations in cities and the declining authority of religion.

Prominent sociologists of the 19th century, such as Auguste Comte, Karl Marx and Emile Durkheim, conjectured that the increasing authority of science would steadily suppress the role of religions, eventually making them obsolete. According to Comte, for example, society undergoes “three stages”, the last of which is the “positive stage”, where science takes religion’s place.² Nearly two centuries after these conjectures, religions remain steadfast. Notwithstanding, the declining authority of religion in personal lives along with the increase in scientific developments, remains a fact.

¹ The most significant manuscript of 17th century scientific revolution is Newton’s **Principia**. This book has been profoundly influential in many fields from cosmology to philosophy and theology: Isaac Newton, *The Principia: Mathematical Principles of Natural Philosophy*, Tr: Bernard Cohen et al., The University of California Press, Berkeley, 1999.

² Auguste Comte, *Introduction to Positive Philosophy*, Hackett Publishing, 1988.

The most notable figures behind the scientific revolution—again including Descartes, Galileo, Kepler and Newton—were devoutly religious, filled with awe by the reconciliation of scientific findings about the universe with God’s creation and religious teachings. Later years, however, witnessed increasing friction between science and religion. While the reasons behind these conflicts in the Western-Christian world are far-reaching, and such historical-sociological discussions are beyond the scope of this book. For our purposes, suffice it to mention this extensive historical background of science-religion interactions.

In modern times, with the increasing authority of science, the question of how to establish the relations between science and religion has become a vital issue to religious believers. Some thinkers insist on the conflict of science and religion, while others advocate the separation of these two fields. Others defend an integration approach, holding that a positive, harmonious relationship can be established between science and religion.³ I am inclined toward integration; I embrace the opinion of 12th century philosopher Ibn-Rushd that science and religion are companions,⁴ and that of 21st century theologian-scientist John Polkinghorne who regarded them as cousins.⁵

While establishing perspectives on science and religion, it should be clarified which “science” and which “religion” are under consideration. Moreover, the terms, “religion” and “science,” can be misleading. Within each religion, for example, there are many different denominations, interpretations and theological schools of thoughts. Likewise, in science, for example, Einstein and Bohr had different interpretations of quantum theory, which have shaped modern philosophical approaches to determinism.⁶ In order to study science-religion relations in a meaningful and beneficial way, it is imperative to respect and utilize the pluralist nature of both field.

In this book, when dealing with the question of evolution and Islam, I will try to encompass all critics of the theory, coming from various voices in Islam. Moreover, I will avoid

³ For further discussions on these classifications: Ian G. Barbour, *When Science Meets Religion*, Harper Collins Publishers, San Francisco, 2000, p. 4-12; Kelly James Clark, **Religion and the Sciences of Origins**, Palgrave Macmillan, New York, 2014.

⁴ Averroes, (Translation by C.E. Butterworth) *The Decisive Treatise*, Brigham Young University, 2002.

⁵ John Polkinghorne, *Quantum Physics and Theology*, SPCK, London, 2007.

⁶ For further discussions on the hermeneutic aspects of science, see: Stephen Happel, “Metaphors and Time Asymmetry: Cosmologies in Physics and Christian Meanings”, Ed: Robert John Russell, Nancy Murphy and C. J. Isham, *Quantum Cosmology and the Laws of Nature*, The Center for Theology and the Natural Sciences, Berkeley, 1999, p. 108-109.

superficial generalizations such as “Religion includes metaphors,” which are occasionally used to sweep all criticisms under the carpet. In short, in the following pages we will examine various religious (Islamic) views on the theory of evolution and evaluate them from scientific, philosophical and religious perspectives.

The Historical Development of the Theory of Evolution and Its Fundamental Theses

Before delving into our main focus, the theory of evolution from an Islamic perspective, we will take a closer look at the historical development of this theory and its fundamental theses. In its most recent form, the “theory of evolution” states that all life forms on the earth evolved from one single-celled (or few-celled) organism, through a couple billion years of mutations and heredity. Mechanisms such as natural selection, mutation, sexual selection, etc. play crucial roles in the evolutionary processes. The theory itself has evolved through history from Lamarckian and Darwinian interpretations to Neo-Darwinism.

The earliest statements on a biological theory of the evolutionary formation of species come from Lamarck. He had been an advocate of the immutable species hypotheses of Linnaeus⁷, until he converted to evolutionary thoughts at the age of 56 (in the year 1800). In 1809, he published his famous book *Philosophie Zoologique* in which he described evolution as a very slow, gradual process, forming new species after many generations. According to Lamarck, the simplest forms of life arose through spontaneous generation and increasingly complex organisms are formed later through evolution. Human beings represent perfection in life and species become more perfect as they move closer to human form. Humans, the final products of evolution, evolved from apes (Lamarck stated the idea of evolution of humans from apes before Darwin).⁸ Thus, with an evolutionary theory that relates humans to animals, Lamarck was critically situated against prominent French philosophers (including Descartes) who affirmed a profound gap between humans and animals.

The main mechanism of Lamarckian evolution, which Darwin would later call “the inheritance of acquired characteristics,” is environmental factors which create new demands on the organism, the consequent changes in their body, and finally, these changes then being inherited by their offspring. When an organ was used more, (like a giraffe’s neck, stretching for leaves), a “nervous fluid” would flow into it, making it more developed (e.g. a longer neck). The continued use of this organ through generations would make it even more

⁷ Peter J. Bowler, *Evolution: The History of an Idea*, University of California Press, Los Angeles, 1984, p. 78.

⁸ Jean Baptiste Lamarck, *The Zoological Philosophy*, Tr: Hugh Elliot, Macmillan, London, 1990, p. 30-39, 60, 71, 170.

developed, and would eventually become a property of the species. Meanwhile, unused organs would shrink over generations.⁹ While Darwin never rejected Lamarck's inheritance of acquired characteristics, he also affirmed natural selection as a mechanism of species formation. Darwinian evolution would explain, for example, the evolution of long-necked giraffes from short-necked ancestors as follows: within each generation there might be variations in neck lengths; if longer necks were more advantageous in feeding, that trait would be passed on to succeeding generations, whereas short necks would be eventually be eliminated.¹⁰ In Lamarckianism, environmental changes directly cause changes in the species. In the Darwinian model, on the other hand, variations come first; environmental factors manifest themselves in "natural selection", with those traits that better permit survival being "selected"—that is passed onto future generations with less successful traits being "selected out." Following the discovery of genetic inheritance, beginning with the work of Mendel, it became apparent that traits which are passed on to offspring are not affected by how much they are used, favoring the Darwinian approach.

Erasmus Darwin (grandfather of Charles Darwin and contemporary of Lamarck) also affirmed the evolutionary formation of species. According to Erasmus, evolution is driven by reactions like pain or pleasure against outside factors, forming new traits, which are transmitted to offspring. Significantly, he also mentioned the possibility of a "common ancestor" of all species. He also mentioned that humans and apes could have evolved from the same species. He did not, however, explain, as Charles would, how a diversity of species emerged from a common ancestor.¹¹ Erasmus attributed the evolution of life towards more complicated organisms to God's placement of inherent properties allowing advancement.¹² As a believer in God's creation of life through the laws of nature, he often made references to Holy Scripture in order to support his theories with theological beliefs.¹³

Although the "theory of evolution" is almost always identified with Charles Darwin, Alfred Russel Wallace independently developed the theory of evolution by natural selection at the same time as Darwin.¹⁴ Darwin compiled the details of his observations and theories in his

⁹ Jean Baptiste Lamarck, *The Zoological Philosophy*, p. 113.

¹⁰ Philip Kitcher, *Abusing Science: The Case Against Creationism*, MIT Press, Cambridge, 1982, p. 8.

¹¹ Henry Fairfield Osborn, *From the Greeks to Darwin*, Macmillan and Co., USA, 1899, p. 141-148.

¹² Peter J. Bowler, *Evolution: The History of an Idea*, p. 77.

¹³ Erik Nordenskiöld, *The History of Biology*, Tr: L. Bucknall Eyre, Tudor Publishing Co. New York, 1920, p. 295.

¹⁴ Alfred Russel Wallace, "On the Tendency of Varieties to Depart Indefinitely from the Original Type", *Zoology*, No: 3, 1958.

seminal work *The Origin of Species*, first published in 1859.¹⁵ He published nineteen other books, none of which has become as famous as *The Origin of Species*. Darwin's works were significantly influenced by and based upon his observations during his sea voyage around the world between 1831–1836.¹⁶ He would later call his voyage on the Beagle "...by far the most important event in my life..."¹⁷

In his autobiography, Darwin mentions that in putting together his theories on "natural selection" and "struggle for existence" he was inspired by the famous economist Reverend Malthus' book *An Essay on the Principle of Population*¹⁸ that he read in 1838.¹⁹ Ernst Mayr summarizes Malthus' influence on Darwin's formulation of evolution, by pointing to five facts and three inferences of the theory:²⁰

Fact 1: All species have such great potential fertility their population size would increase exponentially (Malthus called this 'geometrically') if all individuals that are born would reproduce successfully.

Fact 2: Except for minor annual fluctuations and occasional major fluctuations, populations normally display stability.

Fact 3: Natural resources are limited. In a stable environment, they remain relatively constant.

Inference 1: Since more individuals are produced than can be supported by the available resources but population size remains stable, there must be a fierce struggle for existence among the individuals of a population, resulting in the survival of only a part, often a very small part, of the progeny of each generation.

Fact 4: No two individuals are exactly the same; rather, every population displays enormous variability.

Fact 5: Much of this variation is heritable.

¹⁵ Charles Darwin, *The Origin of Species*, Penguin Classics, London, 1985.

¹⁶ Francis Darwin (Ed.), Charles Darwin, "The Autobiography of Charles Darwin", Timeless Classics, 2010.

¹⁷ Charles Darwin, **Voyage of The Beagle**, Penguin Classics, London, 1989.

¹⁸ Thomas Robert Malthus, **An Essay on the Principle of Population**, Sentry Press, New York, 1965.

¹⁹ Francis Darwin (Ed.), Charles Darwin, "Life and Letters of Charles Darwin", CreateSpace Independent Publishing Platform, 2016

²⁰ Ernst Mayr, **The Growth of Biological Thought**, The Belknap Press of Harvard University Press, Cambridge, 1982, p. 479-480.

Inference 2: Survival in the struggle for existence is not random but depends in part on the hereditary constitution of the surviving individuals. This unequal survival constitutes a process of natural selection.

Inference 3: Over the generations this process of natural selection will lead to a continuing gradual change in populations, that is, to evolution and to the production of new species.

Darwin's formulation of the theory of evolution links all living species to a single-celled common ancestor. The principal mechanism of his formulation is "natural selection". In modern terms, "the theory of evolution" or "Darwinism" (also referred to as Neo-Darwinism) combines the natural selection theory of Darwin with the new scientific results provided by the advent of the science of genetics in the early 20th century. Theodosius Dobzhansky, one of the founders of Neo-Darwinism, called the new model "the synthetic theory" and the "biological theory of evolution" since it synthesizes many fields including genetics, taxonomy, comparative morphology, paleontology, embryology, ecology, etc.²¹ Likewise, terminologies like "modern synthesis" or "evolutionary synthesis" are essentially references to a combination of Darwinism with genetics.²² Modern researchers of evolution include advocates of "selectionism" (a somewhat reduced role attributed to genetics) and followers of "the neutral theory of molecular evolution" (less focus on natural selection).²³ The most common assumption, however, is to explain the evolution of species via natural selection and genetic mutation.

The most important aspect of Neo-Darwinism is its reconciliation of the new findings in genetics with the theory of evolution. Accordingly, a Neo-Darwinian would reject the Lamarckian view that traits acquired after birth can be transmitted to offspring. On the other hand, Neo-Darwinism exhibits a spectrum of interpretations. Edward O. Wilson, for example, claims that our genetic code also determines our social and cultural behavior (a.k.a. "sociobiology").²⁴ Stephen Jay Gould, on the other hand, calls sociobiology a "bad science" and its claims "just-so stories".²⁵ And while Neo-Darwinians typically attribute variations in

²¹ Theodosius Dobzhansky, **Evolution, Genetics and Man**, John Wiley and Sons, New York, 1961, p. 109-110.

²² Peter J. Bowler, **Evolution: The History of an Idea**, Univ. of California Press, 2009.

²³ Wen-Hsiung Li, **Molecular Evolution**, Sinauer Associates Publishers, Massachusetts, 1997, p. 55.

²⁴ Edward O. Wilson, "Heredity", Ed: Michael Ruse, **Philosophy of Biology**, Prentice Hall, New Jersey, 1989, p. 246-252.

²⁵ Stephen Jay Gould, "Sociobiology and the Theory of Natural Selection", Ed: G. W. Barlow and J. Silverberg, **Sociobiology: Beyond Nature/Nurture**, Westview Press, Colorado, 1980, p. 257-269.

life to the accumulation of “micro-mutations” in genes, Niles Eldredge and Stephen Jay Gould oppose this view via their “punctuated equilibrium” hypothesis.²⁶ As noted by Dobzhansky, biologists are well aware that many unsolved problems remain in biology in general and evolution in particular, which leads anti-evolutionists to falsely claim that the theory of evolution itself is totally contestable.²⁷ In short, as with other branches of science, evolutionary biology dynamically progresses through ongoing research and debates; yet, its principal tenets of common ancestry and transformation of species are well-established.

²⁶ Niles Eldredge and Stephen Jay Gould, “Punctuated Equilibria: Alternative to Phyletic Gradualism”, **Models in Paleobiology**, Freeman, San Francisco, 1972.

²⁷ Theodosius Dobzhansky, “Nothing in the Biology Makes Sense Except in the Light of Evolution”, Ed: Connie Barlow, **Evolution Extended**, MIT Press, Cambridge, 1994.

Understanding the Relationship between the Theory of Evolution and Belief in God

One common mistake regarding the relationship between the theory of evolution and belief in God is identifying all evolutionists with atheism and its rejecters with theism. Many theist scientists, philosophers and theologians believe in evolution. Harvard botanist Asa Gray (one of the introducers of the theory of evolution to America); a founding father of modern theory of evolution Theodosius Dobzhansky; long-time head of the Human Genome Project Francis Collins; and prominent paleontologist Simon Conway Morris are just a few prominent scientists who have found no conflict between the theory of evolution and their faith in God. Famous philosopher of science and biology Michael Ruse, an atheist, stated that there is nothing inconsistent about believing in God and evolution at the same time. It is a mistake to relate the theory of evolution to atheism and the rejection of this theory to theism.

As with "agnosticism" about God, the claim that God's existence or non-existence is unknowable so one should stay neutral on the issue. A similar categorization can also be formed for the theory of evolution: those who believe that since it cannot be proved, one should remain neutral on the issue. As a result, there are nine possible combinations of beliefs in God and in the theory of evolution:²⁸

A)

1. Believers in the theory of evolution - Agnostics
2. Believers in the theory of evolution - Atheists
3. Believers in the theory of evolution - Theists

B)

1. Rejecters of the theory of evolution - Agnostics
2. Rejecters of the theory of evolution - Atheists
3. Rejecters of the theory of evolution - Theists

²⁸I first suggested this categorization in my earlier book "The Theory of Evolution, Philosophy and God" (published in Turkish as: "Evrin Teorisi, Felsefe ve Tanrı", İstanbul Yayınevi, İstanbul, 2015, p. 276-300)

C)

1. Agnostics about the theory of evolution - Agnostics
2. Agnostics about the theory of evolution - Atheists
3. Agnostics about the theory of evolution - Theists

People in any one of these categories do not necessarily share the same philosophies about religion or the theory of evolution. For example, process philosopher Alfred North Whitehead, Christian priest and paleontologist Teilhard de Chardin and Muslim philosopher Muhammad Iqbal are all "Believers in the theory of evolution - Theists", yet their regards toward "God" significantly differ from one another. . And people in the same category may differ in the depths of their views. It's hard to know where Darwin himself fit into these categories; his writings contain statements indicating that he was a theist, while some letters written by him imply agnosticism. Nonetheless, this categorization reveals that the two-fold categorization of people as "evolutionist - atheist" or "anti-evolutionist - theist" is simplistic and misleading. Apart from being misleading and incomplete, the two-fold categorization also causes unnecessary polarization among people by dictating: "Either believe in God and reject evolution, or believe in evolution and reject God".

Since atheists lived and died prior to the development of the theory of evolution in the 19th century, atheism is rooted in many reasons unrelated to evolution. Not every "evolutionist-atheist" or "evolutionist-agnostic" is an atheist or agnostic due to their belief in evolution. Darwin's vacillation between theism and agnosticism was due primarily to "the problem of evil;" in a letter written to Asa Gray, Darwin questioned the death of a person by a lightning strike.²⁹ And yet, Darwin claims that a Creator can be reconciled with evolution by natural selection in *The Origin of Species* and many other of his writings. So it seems unlikely that evolution by natural selection caused his drift towards agnosticism.

It is often difficult to determine how the theory of evolution affects belief in God (and if so, to what degree). For most people, belief or unbelief in God also involves psychological and socio-political factors, and even personal experiences. Consider Karl Marx and Friedrich

²⁹Francis Darwin (Ed.), Charles Darwin, "Life and Letters of Charles Darwin", CreateSpace Independent Publishing Platform, 2016

Engels. They were materialist-atheists before they heard about Darwin's theory of evolution. In preparing for his PhD dissertation, completed in 1841, Marx studied ancient materialists Democritus and Epicurus, and developed his materialism.³⁰ Marx and Engels eagerly welcomed Darwin's theory;³¹ indeed, Engels stated that the theory of evolution is the counterpart of Marx's social theories in the world of life.³² Consequently, Marx and Engels proposed an evolutionary process in the socio-political world, cherishing the counterpart of their ideas in biology. However, they did not become materialist-atheists due to this theory. A similar situation is observed in Friedrich Nietzsche's ideas. On the one hand, he criticized the concept of "natural selection" and could not reconcile it with his philosophy,³³ yet, on the other, he also made references to the descent of man from animals and stated his belief in evolution.³⁴ But Nietzsche would have been an atheist even without knowledge of the theory of evolution. "Evolutionist-atheists" Marx, Engels and Nietzsche were not atheists because of evolution. However, Richard Dawkins, also an "evolutionist-atheist", frequently states in his works that atheism is rational only if evolution is true.³⁵ What are the causal relations between people's faiths and their approaches to evolution? We can summarize such causal relations as follows:

1. One's approach to evolution is the cause, one's stance against belief in God is the effect.
2. One's approach to evolution is the effect, one's stance against belief in God is the cause.
3. No causal relationship exists between one's approach to evolution and one's belief in God.

These three options again demonstrate the inadequacy of the two-fold classification. In fact, a significant percentage of the Muslim population believes that species, including humans, were formed via evolution.³⁶ In only four Muslim majority countries does the majority believe in

³⁰Karl Marx, Paul M. Schafer (Ed.), "The First Writings of Karl Marx", Ig Publishing, 2006

³¹Karl Marx, Friedrich Engels, "On Religion", Dover Publications, 2008

³²Michael Ruse, *Can a Darwinian be a Christian?*, Cambridge University Press, Cambridge, 2001, p. 174-175.

³³Friedrich Nietzsche, "The Will to Power", Vintage, 1968

³⁴Friedrich Nietzsche, "The Antichrist", SoHo Books, 2013

³⁵Richard Dawkins, *The Selfish Gene*, Oxford University Press, Oxford, 1989, p. 1.

³⁶ According to polls performed by Pew Research Center (a prominent institute in the field of theology and religion) between the years 2008-2012.

the creation of species in their present forms, since the beginning of life.³⁷ (It should be noted that the countries such as Saudi Arabia and Egypt -in which resistance to the theory of evolution is expected- are not included in the survey.) The countries where evolution is most widely accepted are Kazakhstan (79%), Lebanon (78%), Palestine (67%), Morocco (63%) and Uzbekistan (58%). The strongest rejecters of evolution are in Iraq (67%), Afghanistan (62%), Tajikistan (55%), Indonesia (55%) and Turkey (49%). On average, 53% of Muslims believe in evolution (part of the remaining 47% decided not to make a choice). Since only 46% of American Christians believe in evolution, acceptance of evolution in Muslim countries is surprisingly high (45% of American Muslims believe in evolution, below the world average of 53%).³⁸

In almost all of the surveyed countries, the percentage of people who reject Islam as a divine religion is significantly lower compared to acceptors of evolution. As a result, in Muslim countries a significant portion of the society observes no conflict between the theory of evolution and Islamic beliefs. Despite these unexpected results, the theory of evolution remains the most debated subject by far of science-religion issues among Muslims (the same situation is also true among Christians and Jews).

³⁷The pollers gave two options: “Muslims who believe humans and other living things have evolved over time” and “Muslims who believe humans and other living things have always existed in present form”. Some people decide to choose neither of the two.

³⁸“The World’s Muslims: Religion, Science and Popular Culture”, <http://www.pewforum.org/2013/04/30/the-worlds-muslims-religion-politics-societyscience-and-popular-culture>, 2013.

What Should a Muslim Reject on Religious Grounds?

It would be worthwhile to first answer the following question: "What should a Muslim reject on religious grounds?" All denominations within Islam unanimously affirm the authority of the Quran on religion. Every fundamental tenet of faith must have a basis in the Quran. Fundamental tenets such as the existence and almightiness of God, the prophecy of Mohammad, and the life in the Hereafter are all based on verses in the Quran. What a Muslim should reject on religious grounds can be identified in the following way: if a claim contradicts any verse of the Quran, a Muslim should reject that claim. The criterion of contradiction is also important: the verse of the Quran in potential conflict with the claim should be considered in all of its plausible (but not strained or exaggerated) interpretations, and the claim should contradict all such legitimate interpretations. If the claim contradicts a certain interpretation but not another, we cannot claim that it conflicts with the Quran. Since a non-contradicting interpretation may be correct, it may not be in conflict.

The literature of hadith, it should be noted, contains fabricated statements ("hadith mawdu") about the universe and living things, often falsely attributed to Prophet Mohammad. These fabrications have sneaked into literature as hadith particularly as a result of interactions between Muslim societies and Judeo-Christian cultures and the consequent assimilation of their narrations (referred to as Israilliyyah and Masehiyyah). In fact, many hadith scholars regard Israilliyyah and Masehiyyah as primary sources of "hadith mawdu", which are particularly abundant in issues related to the creation of the universe and life, details which are not given in the Quran. In addition, whether or not "khabar al-wahid"³⁹ can be used as a guide has been a controversial subject (we will not go into such debates here), and the majority of scholars agree that no fundamental tenet of Islam can be established on any "khabar al-wahid" (this is also the opinion I advocate).⁴⁰ No faith-related issue can stand on suspicion, whereas "khabar al-wahid" is always subject to uncertainty. It is an issue of faith to

³⁹ "Khabar al-wahid", or wahid report is a hadith narrated in a way that does not fulfill all the conditions necessary to be deemed Mutawatir Hadith. Mutawatir Hadith is a hadith which is reported numerously by different narrators and through various chains of transmission in a way that substantiates its authenticity. There is no Mutawatir Hadith on the subject matter of this book.

⁴⁰Yusuf Şevki Yavuz, "Haber-i Vahid", Türkiye Diyanet Vakfı İslam Ansiklopedisi, vol. 14, 1996, p. 352-355.

determine whether or not a claim about the creation of species conflicts with religion. There is no “mutawatir hadith” in this issue; the few related narrations are *khobar al-wahid* at best, and no religious stance can be chosen based on them. Therefore, the content of the Quran would suffice to determine whether the theory of evolution conflicts with Islamic beliefs.

The critical matter here is the following: many false claims also do not contradict the Quran. The correctness of a claim and whether or not it contradicts the Quran are entirely different matters. Although this appears to be a simple distinction, I have experienced that many of the logical mistakes and confusion during debates about evolution and Islam stem from lack of understanding of this point. I often start my speech "I am of the opinion that the theory of evolution has no element in conflict with Islamic belief", and answer each one of the objections raised (as I will do in this book) based on verses of the Quran. Yet, I have many times received responses such as "But the Cambrian explosion falsifies evolution", even though my claim was not about the correctness of the theory of evolution. Rather, I advocate that accepting the theory of evolution is not to oppose Islam, and leave the discussions about the truth of evolution to biology and philosophy of biology. For this reason, my claim is totally unrelated to objections raised against evolution itself. Furthermore, when I say "There is no verse in the Quran in conflict with the theory of evolution", I do not mean "The Quran reveals evolution"; yet, these two statements are also often mixed up. My claims are about the impossibility of discrediting evolution in the name of Islam; I do not go so far as to claim that "A Muslim must believe in evolution, as a requirement of his religion." Despite my meticulousness in distinguishing these matters, on numerous occasions I have witnessed related misunderstandings. In my opinion, strong prejudices on such sensitive issues inspire these confusions.

It would be beneficial here to exemplify my point that many false claims do not conflict with the Quran. I will give two examples: one historical and the other scientific. While the Quran affirms the existence of Mary, it includes no information on whether or not she had any aunt(s). Imagine three people claiming that Mary had two, three and four aunts, respectively. None of these claims conflicts with the Quran, and yet, at least two of them are wrong. If a historian were to argue, on historical grounds, that Mary had two aunts, there would be no Islamic grounds to oppose him/her. Many false claims about historical figures, even those mentioned in the Quran, are not in contradiction with the Quran.

The next example is about natural sciences. Imagine two people, one claiming that the moon

is bigger than the sun, and the other claiming the opposite. Which of these two claims conflicts with Islamic faith? Neither of them, because the Quran does not contain information on the sizes of the sun and the moon. Hence, although the claim that the moon is larger than the sun has been scientifically discredited, it doesn't contradict with Islam.

Throughout this book, I will endeavor to show that the situation is the same in discussions of the theory of evolution. No matter how many aunts are attributed to Mary—one could say she had thousands of aunts, for that matter—and no matter what comparison is made between the masses of the sun and the moon, contradiction with the Quran is out of the question. Likewise, no claim on the emergence of life forms and humans can contradict Islam. Even though the Quran clearly mentions that all species of life, including humans, are created by God, it does not reveal *how* this was carried out. As a consequence, my claim that "a Muslim *can* be an evolutionist" cannot be converted into "a Muslim *must* be an evolutionist". Alternately, my claim that "evolution is compatible with the Quran" cannot be converted into "the Quran implies evolution." The Quran doesn't imply evolution because it teaches nothing about how God created species; which is precisely why the Quran is compatible with evolution.

Some religious people say that since atheists exploit the theory of evolution against faith, evolution should be rejected in defense of the faith.⁴¹ We should make the following point clear: if Muslims, in the name of Islam, had not erroneously insisted that Islam opposed evolution, atheists would not have had the opportunity to attack Islam on the basis of evolution. Those who wrongly state that "acceptance of God requires rejection of evolution" are essentially responsible for paving the way for such atheistic objection. Muslims simply need not disagree with atheists on their beliefs in the structure of elements in the periodic table, the composition of magma, and the roundness of the earth. These phenomena are all creations of God. He is the creator of life, as well as the elements, the magma and the earth. It is anti-Islamic to proclaim on these phenomena by first determining what atheists believe and choosing the opposite. Muslims should shape their opinions according to the Quran, not according to their opponents.⁴² And a Muslim be aiming for the truth, first and foremost; not, first and foremost, opposing atheists. And just there is no religious requirement to reject the scientific findings about these phenomena, the same is also true for evolution.

⁴¹Alper Bilgili, "Türkiye'de Bilim Sosyolojisi Tartışmaları Üzerine Eleştirel Bir Değerlendirme", Sosyoloji Dergisi, No: 29, 2014, p. 242-245.

⁴² For example, no Muslim can feel enmity against Jesus just because Christians attribute divinity to him; no Muslim would dislike the sun due to its divinity in Shintoism.

I observe double injustice on this subject. By claiming that "evolution implies atheism," atheists not only make a false claim, they exploit the theory in favor of their philosophies, thereby harming the objective evaluation of scientific approaches. The theory of evolution is about the field of biology and describes the formation of living species; whether or not it is also a product of a conscious design does not fall within the domain of science. Secondly, claims that "a Muslim must reject the theory of evolution", likewise hinder the objective evaluation of this theory by Muslims, creating unnecessary friction between science and religion. Understanding the falsity of rejecting evolution on Islamic grounds clears up misconceptions and ceases these injustices.

“God of the Gaps” or “God of the Creation”?

The most prominent reason behind objections to the theory of evolution on religious grounds is the claim that the theory excludes belief in God. Clarifying this confusion is of primary importance in judging whether or not a Muslim can believe in evolution (the same arguments also hold for Christians and Jews). Since belief in God is the most fundamental element common in all monotheistic religions, these faiths naturally reject any belief that contradicts belief in God.

Does the theory of evolution really require the rejection of belief in God? The short answer to this question is "No". Let's now turn to the long answer. Most misconceptions in this regard are linked with failure to understand "processive creation" (we will discuss this issue in the following chapter). Another common root of such misconceptions is the notion of "God of the Gaps". "God of the Gaps" types of arguments essentially claim that the main evidence for the existence of God is the unknowns about the universe and the life; it is God who fills these gaps. Consequently, if no gap is left, there would no longer remain the need for the existence of God! Inevitably, such perspectives lead to the perception that all scientific developments are threats to religion. We have historically heard that "We do not know how the stars produce light, so God produces starlight" and "We don't know how the planets move, so God moves the planets" etc. But as science has progressed—explaining the light of stars in terms of nuclear forces and the motion of planets in terms of inertia—God has gotten squeezed out of a gap of ignorance. However, most theist philosophers and theologians of our time reject "God of the Gaps" arguments for the existence of God. Instead, they glorify increasing scientific knowledge about life and the universe as a means of comprehending the Might of God; they do not seek refuge in ignorance.

For this reason, those who claim that increasing knowledge weakens the need for God exhibit a common flaw known in the literature of logic as "straw man fallacy". Committers of straw man fallacy ignore the main arguments of the opposing opinion; instead, they present counter arguments against a bad or exaggerated example of their rivals—as if those examples were the position taken by their opponent. Committers of straw man fallacy include renowned atheist

evolutionary biologist Richard Dawkins.⁴³ Theism in general, and Islam in particular, glorifies not ignorance but knowledge in cosmology and biology. God is not a "God of the Gaps", he is rather, "God of the Creation"; we witness His Might and Art not through ignorance gaps, but through knowledge of nature. The progressive knowledge that emerges about life and the universe are means to comprehend the Might and Art of God. Modern findings in the field of biology are no exceptions; they should be regarded as subjects of desire to better comprehend God.

I often witness the following inconsistency in those who regard the theory of evolution (which describes the emergence of living species) as a threat to the existence of God: these same people (correctly) find no threat in the Big Bang theory that describes the evolutionary formation of the universe through 13.8 billion years, nor in the evolution of our earth during the past 4.5 billion years. However, if the modern scientific findings about the evolution of the earth and the universe do not contradict the existence of God, why would similar findings about the evolution of life forms? Isn't God the creator of the universe, of the earth, and even of life? Theories about the formation and evolution of life, like theories about the formation and evolution of the earth and the universe, simply do not contradict the faith in God advocated by Islam.

Muslims, then, should not seek out gaps (unexplained phenomena) in the universe and life. For example, the accelerating expansion of the universe is attributed to "dark energy", and yet, this dark energy is still poorly understood. We should resist the urge to blithely insert God into this explanatory gap. There are many things that science cannot explain. This should not incite a religious desire to find unanswered scientific questions. Muslims should take their ignorance of natural phenomena as inspiration to learn, scientifically, of the causes of that phenomena. And glorify God for his great work.

The Quran never glorifies ignorance, pious or not, over knowledge. To the contrary, the Quran enthusiastically and unequivocally encourages attaining knowledge. For example, this verse invites us to attain deeper knowledge about the beginning of creation:

Say: "Go all over the earth and behold how He has created in the first instance: and thus, too, will God bring into being your second life for, verily, God has the power to will

⁴³ Richard Dawkins, *The God Delusion*, Black Swan, London, 2007, p. 151.

*anything!*⁴⁴

This verse implies that a Muslim should try to gain knowledge even about the origin and evolution of the universe and life. Seeking for gaps in our knowledge, or worse, glorifying these gaps is not compatible with Quranic perspective. There is nothing at all Islamic in seeking refuge in "gaps", using these gaps to develop "Islamic" arguments, or for taking theories that inform us about natural processes as threats to the existence of God.

God is *not* "God of the Gaps" but "God of the Creation". There is no reason to reject any theory (regardless of its verity) about the history of the universe and life as contradictory to the existence of God.

⁴⁴ Surah al-Ankabut, 29: 20.

“He Says: Be, and it is” (Kun fa Yakun): Processive or Instantaneous Creation?

Suppose a painter says "I made this painting". If we were to hear such an expression, we would understand what he means. Knowing that he made the painting, we also know that the painting came into existence through certain processes; the painter bought a canvas and dyes, mixed the dyes, stuck the brushes in the dyes and then stroked them on the canvas, painted one part of the painting first and then another, etc. His expression, "I made this painting," does not contradict the fact that the painting was also made through these processes. All of those processes are integral parts of the painter's creation, undertaken with the purpose of making the painting. Likewise, when God says "I created the heavens" or "I created living beings" or "I created humans," a Muslim should not assume that these expressions imply immediate, processless creations or instantaneous comings into existence. God's claims to make things does not preclude God's use of processes.

Another mistake to be corrected in this regard is the actual meaning of "random" as commonly used by biologists. When a biologist says that mutations in living organisms happen "randomly", they mean there is no known law of biology that enforces these mutations to happen in accordance with the actual needs of the organisms.⁴⁵ The word "random" hence stresses the distinction between the Neo-Darwinist paradigm and the Lamarckian approach of the past, which assumed that changes in organisms took place according to the needs and struggles of species. In other words, the term "random" is about the mechanisms of alterations in species and the corresponding modifications in the genetic code, and has no reference to any atheistic claim. A person who accepts the mechanism of modifications in species as "random" in this sense can also regard the overall processes behind the emergence and alteration of species as a realization of God's plan. There is no contradiction between these two perspectives.

The key concept here is "process". According to Islam, everything that we observe around

⁴⁵ Ernst Mayr, *Toward A New Philosophy of Biology*, Harvard University Press, Cambridge, 1988, p. 98; Michael Ruse, *Philosophy of Biology Today*, State University of New York Press, Albany, 1988, p. 75.

ourselves is a product of God's creation. And all the things we observe are linked to certain processes. When a Muslim finishes his meal, he says "Alhamdulillah" to thank God for providing the food. However, prior to becoming a meal, the potatoes on the dish went through several processes; the potatoes grew in the field, were picked by a farmer, sold to a grocery, bought by a man, and cooked by his wife. Since all such processes happen thanks to God's creation of atoms, the earth, life, plants and time, a Muslim never finds creation through processes contradictory with the existence of God and consistently states "Alhamdulillah" when eating his potato. When a Muslim drinks milk with his meal, he might remember the following verse of the Quran:

*And, behold, in the cattle there is indeed a lesson for you: We give you to drink of that which is secreted from within their bellies between that which is to be eliminated from the animal's body and life-blood: milk pure and pleasant to those who drink it.*⁴⁶

When a Muslim drinks milk and thanks God, he/she does not reject the facts that the cow ate grass, the grass went through many processes (including many not described in the Quran) in cow's body, and the milk came to the table via the work of numerous other people. No process in the preparation of the milk that is not mentioned in the verse above can be regarded contradicting the expression "*We give you to drink*".

All of the phenomena that take place on the earth do so thanks to the formation of pertinent elements. The formation of elements, on the other hand, depends on the beginning of the Big Bang, the emergence of mass via the Higgs particle, the formation of galaxies and stars, and on many other finely-tuned processes. In other words, if each reference to God's "sending down rain", "making the wind blow" or "providing the milk" were to require mention of all the processes involved, it would be necessary to list countless events starting from the Big Bang. Such a description would use up a space much larger than the actual volume of the Quran.

Similar arguments hold for an artist who says "I have made this painting". Had he attempted to describe all of the details of all of the processes behind the creation of the painting, he'd have to list everything from the Big Bang to the formation of elements in stars. As a result, when a certain phenomenon is being described; first, it is practically impossible to list all of

⁴⁶ Surah an-Nahl, 66:12

the processes behind it, and second, we are all aware of what is actually meant even though the literal meaning of the words do not contain every single detail. God, the sole Master of all events, uses countless, mostly unstated and even unknown, processes to bring events about. We should expect, then, in His descriptions of creation in the Quran, no reference to the detailed processes behind them.

Those who fail to grasp the nature and importance of "processive creation" claim that descriptions in the Quran about God's creation such as "He says: Be, and it is" (Kun fa Yakun) refer to processless creation of life and humans. Even a superficial inspection of the verses where the statement "He says: Be, and it is" occurs would reveal the falsity of such claims.⁴⁷ When God orders something to "be", he wills it to happen and it happens. This, however, does not imply "instantaneous" (non-processive) causation. It implies that the order (or will) of God is necessary and sufficient for something to happen. Some interpreters of the Quran translate the Arabic particle "fa" as "immediately" and interpret "Kun fa Yakun" as "He says: Be, and it immediately is". However, other occurrences of the particle "fa" in the Quran refer to situations that require translation as "afterwards, hereupon", implying process.

In the Quran, the statement "He says: Be, and it is" is used in the narration of the creation of Jesus. The statement in this context does not refer to non-processive creation:

*Said she: "O my Sustainer! How can I have a son when no man has ever touched me?" It is answered: "Thus it is: God creates what He wills when He wills a thing to be, He but says unto it, 'Be' - and it is".*⁴⁸

The creation of Jesus happened by God's order to "Be", and yet, as described in the Quran, his mother still carried him in her womb until due time. Had the statement "He says: Be, and it is" meant instantaneous, non-processive creation, Jesus must have descended upon the earth as an adult ready to deliver his message. Interestingly, it is commonly observed that when the statement "He says: Be, and it is" is used for the creation of the universe or Jesus, many believers do not presume instantaneous or non-processive creation; yet they thoughtlessly claim that the exact same expression for the creation of mankind implies instantaneousness. Hence, there is no reason to interpret the creation of mankind and Adam with God's order "Be" as "instantaneous."

⁴⁷ The following verses contain the statement "He says: Be, and it is": Surah al-Baqarah, 2:117; Surah Ali-Imran, 3:47, 59; Surah al-An'am, 6:73; Surah an-Nahl, 16:40; Surah Maryam, 19:35; Surah Ya-Seen, 36:82; Surah al-Mu'min, 40-68.

⁴⁸ Surah Ali-Imran, 3:47

The mistaken interpretation of "fa" as "immediately" in translations of the Quran should be corrected. The verses that contain this expression state the unconditional happening of God's will, manifested in His order "Be". But such happenings are or can be processive. Indeed, in other verses of the Quran, God creates the heavens and the earth in six stages (the notion of six stages or "yawm" will be discussed later). Yet the creation of the heavens and the earth happen with God's order "Be:"

81- Is, then, He who has created the heavens and the earth not able to create the like of those? Yea, indeed - for He alone is the all-knowing Creator:

82- His Being alone is such that when He wills a thing to be, He but says unto it, "Be" — and it is.⁴⁹

There is, then, no reason to interpret "Be" as instantaneous creation. Although the universe is 13.8 billion years old, it is still a product of His order, "Be".⁵⁰

Those who object to the theory of evolution because it would require God creating through processes ignore both the Quran's clear teaching about creation and God's creation that we witness around us. In other words, by using such arguments to oppose the theory of evolution, such objectors are de facto opposing Islam by opposing God's word and world.

We can acquire the knowledge that we need to appreciate the Might and Art of God thanks to the universe functioning via processive creation. The processive creation of God is manifest in the causal occurrence of chains of events in the universe. Indeed, such causality is a prerequisite for acquiring scientific knowledge. Thanks to the accumulated scientific knowledge we learn about the internal structure of the stars, the atmosphere around the earth, the way bees produce honey and the function of our coronary arteries and heart. Learning of witnesses to the Might and Art of God. God "every day manifests Himself in yet another [wondrous] way". As a result, a Muslim should see no problem with processive creation; to the contrary, without appreciation of processive creation, it is impossible to properly

⁴⁹ Surah Ya-Seen, 36:81,82

⁵⁰The theory of relativity, theoretically established by Einstein and experimentally verified by numerous experiments, states that time is not absolute but varies depending on factors such as relative velocities and gravity. Time intervals might vary even within the universe, and there is no reason to believe that God is confined within time. Conversely, He is transcendental to time. As a consequence, questions such as "Why would have God waited for such a long time?" are meaningless. Misconceptions resulting from the false thought that "God is waiting in time" stem from the underlying assumption that God is not the creator of time but bound by it. It is this tacit assumption that lies behind claims of instantaneous (or very brief) creation, in order to avoid thinking that God had waited for a long period of time.

comprehend the actions of God.

Furthermore, one of the fundamental tenets of Islam is that life is a trial. A trial makes sense only in a world where we can predict the outcomes of our actions; we can do this only in a universe that functions via ordered processes. Consider the following example: if someone pushes a person off a cliff, the pusher has committed a bad action. This is because the ordered processes that function on the earth lead us to understand that falling off a cliff is fatal. If we were a judge in a court, we would find the pusher guilty. Imagine, for a second, a world where there are no ordered processes. In this fictitious world, the person who pushes the other would not be responsible for his behavior since he would not be able to predict its outcome.⁵¹ In short, just as we can appreciate the Might and Art of God thanks to our existence in a world functioning via processes dictated by the laws of nature, our responsibility for our deeds and hence the world being an arena of trial is also possible thanks to the same processes. Holding humans morally accountable assumes the notion of "processive creation".

Consider a typical, strained argument to show that the theory of evolution contradicts Islamic beliefs. One such argument, based on angels, is stated as "Were the angels also created through evolution?" Such questions imply that if the non-evolutionary creation of angels (which are supernatural) is proven, this would constitute evidence against evolution! First of all, since the theory of evolution is a biological explanation that explains the emergence of species *on the earth*, supernatural beings are by their nature excluded. As a result, the creation of angels is irrelevant to the theory of evolution. Moreover, the Quran does not claim a similar creation of humans and angels. If angels and humans were alike in all respect to humans, we would absurdly expect angels to come into existence via the intercourse of a mother and father, various stages in the wombs of the mother, being born as a baby, etc. If one claims that a scientific theory about the creation of humans and other living things is true only if the angels have also gone through the same creationary processes, why does he/she not think that angels go through the same processes as humans? We know next to nothing about the creation of angels—just that they were created by God. We don't know if this creation was processive or instantaneous, or if processive, what stages it involved. As a result, it is nonsense to raise objections against evolution based on such arguments.

⁵¹ Caner Taslaman, *Twelve Arguments for the Existence of God*.

The Ages of the Universe and the Earth:

Creation in Six Stages (Days)

Some of the earliest objections to the theory of evolution involved opinions about the ages of the universe and the earth. Calculations based on sacred texts, performed by Irish Bishop James Usher (1581-1656) were widely accepted, especially in England. Most Protestants respected Usher's calculation and believed that the earth was created in the year 4004 BC. Cambridge University Vice-Provost Lightfoot pushed the calculations even further and determined that the creation happened on 23rd of September, at 9am! The dates calculated by Usher were so respected that they were printed as footnotes in the King James version of the Bible. These established beliefs yielded strong opposition to the idea of evolution, which implied a much older earth.

No specific date of creation is actually mentioned in the Old Testament; as a result, most Christian theologians oppose such dating. Nonetheless, even today there are firm believers in "Young Earth Creationism", which claims that the creation of the earth happened no earlier than ten thousand years ago. In the US, for example, polls indicate that these believers occupy a significant percentage of society. For this reason, many atheists draw the line between creationists and evolutionists along the belief in a young or old earth.⁵² On the other side the majority of believers see no religious problem with the universe being 13.8 billion years old and Earth being 4.5 billion years old. Young Earth Creationism is not a mainstream religious opinion and I believe that these groups do not deserve too much attention. However, some evolutionist-atheists intentionally attempt to present Young Earth Creationism as the mainstream monotheistic religions opinion. Such an assumption is totally wrong: those groups have no authority to represent all monotheistic beliefs, most of which accept ages of billions of years for the universe and the earth.

The theory of evolution originated and developed in the Christian world. Philosophical and theological discussions about the theory originated in the same culture. For this reason, discussions about science-religion relationships, particularly on the theory of evolution, are often associated with the Christian theology, and consequently with the age of the earth. In

⁵² Philip Kitcher, *Abusing Science: The Case Against Creationism*, p. 41.

this book, however, our focus is Islam, and for our considerations it would be appropriate to ask the following question: Can a Muslim accept the modern scientific results that the universe is 13.8 billion years and the earth is 4.5 billion years old? Based on the methodology I established early on in this book, I comfortably manifest that there isn't the slightest problem in accepting these ages. There is no claim, not even any implication, about the age of the universe in the Quran, and thus believing in a date indicated by scientific studies cannot contradict Islamic belief.

This discussion also recalls verses in the Quran about the creation of the universe and the earth in "six stages (days)".⁵³ One may wonder whether these verses contradict the ages of billions of years of the universe and the earth. In the Quran, the Arabic word used to describe "six stages/days" is "yawm" and it has the same etymological roots as the Hebrew word "yom". The expression "six stages/days" is also used in the Old Testament. Many Judeo-Christian theologians, as well as Charles Darwin himself, interpreted "creation in six stages/days" as occurrences over long periods of time.⁵⁴ Likewise, Muslim theologians also state that besides meaning a 24-hour "day", the word "yawm" can also mean "stage" or "period of time". In fact, such interpretations have been mentioned in Islamic literature centuries before the outcomes of modern scientific results about the past of the universe. More importantly, in the Quran itself there are occurrences of the word "yawm" referring to fifty thousand years and one thousand years, consistent with the "stage" interpretation. These verses are:

*He governs all that exists, from the celestial space to the earth; and in the end all shall ascend unto Him on a Day the length whereof will be like a thousand years of your reckoning.*⁵⁵

*All the angels and all the inspiration ascend unto Him, in a day the length whereof is like fifty thousand years...*⁵⁶

Muslim societies were influenced neither by Usher's chronology nor by the calendars based on Jewish stories of early humans (according to such calendars, we are now around year 5700). Therefore, geological and paleontological findings indicating billions of years age for the earth did not ignite any religion-science clashes in the Islamic world, where "Old Earth

⁵³ The verses where "six stages/days" occurs are: Surah al-Araf, 7:54; Surah Yunus, 10:3; Surad Hud, 11:7; Surah al-Furqan, 25:59; Surah as-Sajdah, 32:4; Surah Qaf, 50:38; Surah al-Hadeed, 57:4.

⁵⁴ Charles Darwin, Voyage of The Beagle, p. 404-405.

⁵⁵ Surah as-Sajdah, 32:4

⁵⁶ Surah al-Ma'arij, 70:4

Creationism", "Young Earth Creationism" or similar debates never occurred.

Was the Flood of Noah Local or Global?

When we compare the findings of modern geology with the sacred texts, what should we make of the Flood of Noah as described in the scriptures? According to Ernst Mayr, a prominent Neo-Darwinist, Christian ideas about geology and about all animals being spread on the earth from Noah's ark encouraged the strengthening and spreading of the theory of evolution as an opponent of such untenable claims.⁵⁷ Jews, Christians and Muslims share the belief that Noah was a prophet sent by God to his community; those who rejected him were destroyed by a flood, but the believers were spared on the ark constructed by Noah. While this story is shared in all three faiths, theologians have disputed whether the flood was globally or only locally realized.

At the beginning of the 18th century, Lister (1639-1712) claimed that fossils were nothing but unique strange-looking rocks, having nothing to do with living beings.⁵⁸ Much earlier than him, Bernard Palissy (1510-1589) regarded fossils as remnants of extinct animals.⁵⁹ Since Lister's fallacious theory found many supporters even into the 18th century, we can appreciate how young a field paleontology is. Even though Herodotus, Strabo, Plutarch and especially Xenophanes had discussed fossils thousands of years ago, it was only starting in the 17th century and then into the 18th and 19th centuries that the study of fossils attained a scientific character.⁶⁰ Today, from our study of fossils we understand that numerous multi-celled organisms have continually existed on the earth for hundreds of millions of years. Moreover, there is no period of cessation of life on the continents of America and Africa. As a result, it would be problematic to assume that the Flood of Noah interfered with life around the world.

Some theologians maintain that the flood was global, and that Noah's Ark saved all species of animals.⁶¹ On the other side, many geologists, including Charles Lyell, claimed that the flood was effective over all the earth but did not cause major global damage. This latter approach is referred to as "The Tranquil Flood Theory". Another interpretation, the "Local Flood Theory", holds that at Noah's time, all people on the earth were living in the same region, and the flood

⁵⁷ Ernst Mayr, *The Growth of Biological Thought*, p. 318.

⁵⁸ David Oldroyd, *Thinking about the Earth: A History of Ideas in Geology*, Harvard University Press, 1996.

⁵⁹ Jean Theodorides, *Histoire de la biologie*, Presses Universitaires de France, 2000.

⁶⁰ Ernst Mayr, *The Growth of Biological Thought*, p. 139.

⁶¹ Henry M. Morris, *Scientific Creationism*, Master Books, Green Forest, 2001, p. 235-255.

affected only that particular region.⁶² Defenders of the Local Flood hold that the words in the sacred texts such as "entire, each" etc. do not imply "geographically global," but instead imply "broad extent" and "profoundness." They offer the following passage from Genesis, as an example:⁶³

*And all the world came to Egypt to buy grain from Joseph, because the famine was severe everywhere.*⁶⁴

They also note that it is nonsense to believe that kangaroos hopped to the Middle East from Australia to embark on Noah's Ark, and that Genesis does not refer to the miraculous transfer of animals.⁶⁵ Statements in the same passage about the flood covering the entire earth and reaching over mountain tops are described from the point of view of Noah and are confined to the region where he lived.⁶⁶

For our discussion, we will assess whether it is mandatory for Muslims to believe in the globality of the Flood of Noah. The Quran does not contain many of the details about the flood described in the Old Testament, and in the Quran's description there is no conflict with the present scientific findings. Many verses in the Quran describe natural disasters sent as punishment over ancient infidel societies. Noah's people were one of them. The following verses from the Quran shed more light on this matter:

And think of the people of Noah: when they gave the lie to one of the apostles, We caused them to drown, and made them a symbol for all mankind: for, grievous suffering have We readied for all who knowingly do wrong!

*And remember how We punished the tribes of Ad and Thamud and the people of Ar-Rass, and many generations of sinners in-between:*⁶⁷

Centuries prior to the emergence of paleontology and its findings, many Muslim scholars stated that the Flood of Noah was local, because all who rejected Noah were living in his

⁶² Walter L. Bradley, "Response to Paul Nelson and John Mark Reynolds", Three Views on Creation and Evolution, Zondervan Publishing House, Michigan, 1999, p. 78.

⁶³ John Jefferson Davis, "Response to Paul Nelson and John Mark Reynolds", Three Views on Creation and Evolution, Zondervan Publishing House, Michigan, 1999, p. 83.

⁶⁴ Genesis 41:57

⁶⁵ John Jefferson Davis, "Response to Paul Nelson and John Mark Reynolds", p. 84.

⁶⁶ Vern S. Poythress, "Response to Paul Nelson and John Mark Reynolds", Three Views on Creation and Evolution, Zondervan Publishing House, Michigan, 1999, p. 92.

⁶⁷ Surah al-Furqan, 25:37, 38.

town, which would not require punishment of the entire earth.⁶⁸ From the Quran we learn that punishments given to ancient societies were directed only at the guilty ones; it would be against the methodology of Quran to imagine the punishment of innocent people and animals in irrelevant parts of the earth. Turkish Quranic exegesis scholar Elmalili Hamdi Yazir explains his interpretation as follows:

*From this we understand that Noah was not sent to the entire humanity but only to his community. How many different societies were on the earth at that time, the places where they lived and the total population of the earth; these are known only to God... The expanse of the Flood of Noah means that it affected his entire community; there is no reason to interpret it as effective all over the world.*⁶⁹

Many of Muslim scholars understand the flood to be local, and furthermore, they also believe that other societies may have lived at the same epoch, in other places. Even if one claims that all humanity consisted of the people of Noah, this would not alter our conclusion: since that society would have lived in a confined region of the earth, the flood would still have been local. There is hence no need for a Muslim to believe in a global flood. If the flood were local, the animals Noah would have taken on the Ark were for the future needs of the believers spared from the flood. There is no need to believe that the Ark provided refuge for hundreds of thousands of species of animals. As pointed out by Elmalili Hamdi Yazir, when we consider the logic behind the punishments given to ancient societies described in the Quran, it is more consistent to believe that the flood was local. Indeed, geological studies show that various parts of the earth suffered from severe floods throughout history.

⁶⁸ Maurice Bucaille, "The Bible, the Qu'ran and Science", Tahrike Tarsile Qur'an, 2003.

⁶⁹ Elmalılı M. Hamdi Yazır, Hak Din Kur'an Dili, Vol: 8, 1992.

Creation of Man from Clay

When I ask people "Why do you think that a Muslim should reject the theory of evolution?", I often notice them stagger. When they are able to summon an answer, the most common response concerns the creation of man from clay as revealed in the Quran. It is widely believed that creation from clay is incompatible with the idea of evolution. One verse of the Quran on the issue is as follows:

*He it is who has created you out of clay, and then has decreed a term for you - a term known only to him. And yet you doubt.*⁷⁰

Different verses of the Quran describe the creation of man from "water" (ma)⁷¹, from "dust" (turaab)⁷², as well as from a certain "essence" (sulala)⁷³ of "clay" (teen) that is a mixture of water and dust. In Surah Ya Seen, the creation of man is from a "drop" (nutfah),⁷⁴ and in Surah Alaq from a "hanging" (alaq).⁷⁵ While different stages of creation are individually described in different chapters of the Quran, confusion is avoided by putting them in order in Surah al-Muminoon, verse 12:

Now, indeed, We create man out of the essence of clay,

and then We cause him to remain as a drop in the womb's firm keeping,

Then We developed the drop into a hanging, then developed the hanging into a chewed lump of flesh. Then created the chewed lump of flesh (mudga) into bones, then covered the bones with flesh

⁷⁰ Surah al-An'am, 6:2

⁷¹ Surah al-Furqan, 25:54

⁷² Surah al-Hajj, 22:5

⁷³ Man is not formed by a random state of clay, but from a certain composition of number of elements present in the clay. For example, the human body contains a few grams of zinc, and its deficiency causes serious health problems. The word "essence" (sulale) mentioned in Surah al-Muminoon verse 12 appears to describe this point. In Surah as-Saffaat verse 11 the word "sticky" (lazib) recalls the texture of clay when it is rich with mineral and organic contents. The word "salsal" mentioned in other verses also does not refer to a random shape, but a definite, intended form. Considering other descriptions, the adjective used for "salsal" as "baked clay" (fahhaar) (Surah ar-Rahman, 55:14), "modified silt" (hamain masnoon) (Surah al-Hijr, 15:26, 28) may be interpreted as different shapes and compositions of clay during processes.

⁷⁴ The word "nutfah" literally means "drop" and can be interpreted as sperm or zygote.

⁷⁵ The word "alaq" also means "clinging" and recalls the embryo's attachment to the womb in the early stages of pregnancy.

(lahm)⁷⁶

In order to properly understand Quranic viewpoint on a given topic, one must thoroughly investigate all of the related verses. Therefore, discussion of a certain stage of the creation of man in one chapter of the Quran does not mean that no other stage has taken place. Just as no one would think that there is no other stage in between creation from a "drop" (nutfah), there is no reason to think that creation from clay precludes any other process. Even though some of the subjects described in the Quran are related to scientific domains, the Quran itself is not a book of science. It does not provide all the details about the creation of the first man, or about the development of a fetus inside the womb. Indeed, a detailed description of embryonic development itself would take a volume much larger than that of the Quran.

Careful reading of the Quran reveals that while the creation of Adam (with his name explicitly mentioned) from dust is mentioned only once (Surah Al-i Imran, verse 59), many other verses mention the creation of all man from dust and water, hence clay. For example: Surah al-Hajj, verse 5: *We have created you out of dust*; Surah al-Muminoon, verse 12: *Now, indeed, We create man out of the essence of clay*; Surah ar-Room, verse 20: *He creates you out of dust*; all these reveal that all humans are created from clay. In order to properly interpret these verses, instead of limiting the creation from clay to the first man, it would be more appropriate to understand how all humans are created. Those who limit the creation from clay to the first man resort to allegorical meanings of the verses, without understanding their direct meanings. Those verses describe the creation not only of the first man but also of the entirety of humanity. A more appropriate approach would be to interpret such verses as pointing out the raw materials from which all humans are created. Hereby, I emphasize again that when the direct and open meanings of the verses of the Quran are accepted instead of allegorical ones, no conflict arises with the theory of evolution.

Understanding "creation of all humans from clay" is straightforward, and this creation is repeated every day in front of us. We are often misled by searching for far out interpretations instead of preferring the simplest and clearest explanation that stands before us. Our food comes either from animals or from plants. When a seed is planted in the soil, it germinates and develops into a full plant by mixing together water and soil (clay, mud); when animals eat these plants, they digest and re-generate them into their body parts. For example, a corn seed is thrown into the soil, the seed takes water and minerals from the soil and becomes a mature

⁷⁶ These stages are also described in Surah al-Hajj, 22:5; Surah al-Fater, 35:11.

plant, the corn is then fed to a chicken that modifies the corn and distributes its constituents over its body. As a result, both plants and animals are formed via modifications of raw materials present in the mud. When we eat them, their body parts become ours. In our bodies, millions of cells die and millions of new ones are created every minute. These new cells become part of the being that we call "I". Raw materials of these cells are the plants and animals that we eat, which are in essence a processed version of mud. That means, we ourselves are formed by the processing of clay. The body of every single human being is formed at every moment from body parts of plants and animals; the corn or chicken that we eat progressively become parts of "us". In short, creation from clay is not a completed process; it continues unceasingly, we constantly witness it and it is not at all about the first man only. In fact, there is no element which exists in our bodies but not in soil. All elements in our bodies, carbon, iron, oxygen, calcium, zinc, etc. are present in the soil. The verses we discussed above can be understood so easily and without the slightest allegorical or strained interpretation. Such an understanding is also more coherent with the fact that those verses describe the creation of all humans from clay. This is a sufficient response to those who think that evolution should be opposed due because the Quran affirms "creation from clay."

The Quran also describes the "creation from clay" as an initial stage; and this "beginning" (badaa) implies the occurrence of other stages:

*Makes most excellent everything that He creates. Thus, He begins the creation of man out of clay;*⁷⁷

When someone produces something out of a certain material, he could describe the process by making reference to the material. A sculptor would say "I made the statue from marble"; a carpenter would say "I made the table from wood"; a cook would say "I made kabobs from meat". When we hear such commonly used language, we do not assume that the statue has not gone through shaping and polishing procedures; the table has not gone through cutting and nailing and the food has not gone through slaughtering the animal, preparing the meat, marinating and cooking it. Why, then, assume that "I created men from clay" implies a lack of other processes? This statement does not imply a processless occurrence. Furthermore, all processes occur via the matter and time created by God. If we do not see any problem with the sculptor, carpenter and the cook processing the raw materials into products, we should see no problem with God not mentioning all of the intermediary processes involved in His creation.

⁷⁷ Surah as-Sajdah, 32:7

The statement, "creation from clay," should not be understood as lacking any process between the clay and the human being, but as a shorthand specification of the raw materials of every human being.

In the Quran, Surah Hud, verse 61, Prophet Saleh tells his people "*He brought you into being out of the earth*"; yet, nobody takes this verse to mean that people emerge from the earth without the involvement of parents or biological processes. If creation from something implies lack of processes between the material and the end product, then should we understand this verse as meaning the immediate creation of the people from earth. Which is ludicrous.

Scientific expressions describe processes within the framework of causality and the laws of nature. We should keep in mind, however, that such a description does not necessarily exclude intentionality. Consider, for example, a host serving tea to his guests. A scientific description of the corresponding events could be go as follows: water boils in the teapot via thermal conductivity of the metal and the transfer of heat to water molecules. When the tea is poured into the cup, the liquid takes the shape of the container and stays in it via the laws of physics and chemistry... Such scientific descriptions of the preparation and serving of tea does not preclude the fact that the host performs those actions with the intention of pleasing his guests. In a similar way, no scientific description of the biological, physical and chemical processes occurring from clay to animals or humans can contradict Islamic belief that God governs these processes with the intention of creating animals and humans. Biology is the branch of science that describes the natural processes of life. Whether these processes are parts of conscious, supernatural planning or not does not fall within the domain of biology. *Biological* descriptions of life, then, can be neither theistic nor atheistic. Alleged theistic or atheistic consequences of physical and biological results are, then, *philosophical interpretations*. Such evaluations are the subject of philosophy in general and of philosophy of religion (about the arguments for the existence of God) in particular. Theologically speaking, no biological description (correct or not) of the formation of life out of lifeless raw materials (e.g. clay) can contradict creation as taught by Islam.

Human Dignity, Common Ancestry with Animals and the Monkey Matter

Another common reason behind the rejection of the theory of evolution from Muslim societies is the theory's claim of common ancestry between humans and animals, particularly with apes. However, when asked to specify which verses of the Quran speak against common ancestry with primates, critics seldom offer much of an answer. However, some claim that common descent with apish animals would be against human dignity. In this chapter, I will consider objections related to human dignity.

The establishment of an ancestral relationship between humans and apish animals does not jeopardize human dignity. In the Quran, Satan is censured for his arrogance, when he claimed his origins superior to that of man, thereby rising against God.⁷⁸ From such narrations about Satan we understand that ancestral arrogance is condemned in the Quran. Therefore, rooting human dignity in ancestry lacks Quranic foundation.

As with other monotheistic scriptures, the Quran shows how idolaters and wrongdoers are censured. Consider Pharoah and Abu Lahab: as humans we share ancestors with them, yet sharing ancestors with such wicked people is no argument against human dignity! If the existence of such wicked people among our species does not diminish our dignity, why would a shared ancestry with animal species? Indeed, the fiercest enemies of the Prophet Muhammad, Abu Lahab and Abu Caheel, were his relatives. If being related to a bad person affected dignity, we would be forced to believe that the Prophet Muhammad thereby lacked dignity. No Muslim would accept such a claim. Ancestry has nothing to do with dignity. Is the claim of common ancestry of humans with cats or fish or apes worse than the claim of shared ancestry with Pharoah or Abu Lahab? And while Pharoah or Abu Lahab are censured in the Quran, cats, fish and apes are not. Indeed, the Quran states that some oppressors are in a worse state than animals:

*Nay, they are but like cattle - nay, they are even less conscious of the right way!*⁷⁹

⁷⁸ Surad Sad, 38:76.

⁷⁹ Surah al-Furqan, 25:44.

I sometimes hear arguments against the theory of evolution related to this issue, which I call “the charm of the grandpa argument”. It is typically expressed as follows: "My grandfather is not an ape, but yours is!". The user of this argument implies that he and his grandfather are charming, yet his opponent’s is not charming at all and is therefore likely to have descended from apes! Such rhetoric might be entertaining, but it is scientifically misguided and theologically misinformed. Theologically, why should one feel uncomfortable about sharing common ancestry with animals which are not scorned in the Quran, yet does not feel any discomfort about being a member of a species (humans) some of whom are declared by the Quran as worse than animals? Indeed, a theory that unites all living beings in a common root is both philosophically and theologically appealing.

“The “charm of the grandpa argument” is deeply mistaken in terms of biology. Many Muslim philosophers, including Ibn Miskawayh (d. 1030) classified humans and apes on the adjacent rung of the ladder of life, hundreds of years prior to the emergence of the theory of evolution.⁸⁰ (Such a hierarchical classification of the "great chain of being" should not be confused with the idea of descent from apes.)⁸¹ If there is an evolutionary relationship between humans and other species, it is natural to consider the first candidates among apes as our nearest neighbors on the chain. However, according to the theory of evolution, we did not descend from the apes, apes and hominoids split off from a common ancestor. Neither ancestry from clay nor ancestry from apes count against human dignity. Are animals worse than clay?

Our bodies host trillions of bacteria, much more numerous than our cells. Our bodies are like planets of bacteria; these creatures are parts of our bodies, just like our organs. Yet being bacterial hosts does not diminish our dignity. Being a planet of bacteria, in other words hosting trillions of living things much inferior to multi-celled animals, and even being vitally dependent on these creatures, does not hurt our feelings. Why should our ancestral proximity to apes?

⁸⁰ Ibn Miskawayh, "Refinement of Character", Kazi Publications, 2003.

⁸¹ Some writers interpreted “the great chain of being”, mentioned by many Muslim philosophers, as prior to the theory of evolution. The concept of “the great chain of being” is quite different than evolution, however. Every rung of the hierarchical ladder is occupied and there is no room for evolution. From this regard, this theory contradicts evolution. On the other hand, by assuming transition between ladders, it recalls evolutionary thoughts. The comments of philosopher-biologist Jahiz (d. 869) differ from others on this issue, in that he made reference to the transformation of species and natural selection. Even though it would be farfetched to claim that he invented the idea of evolution, his biological writings in seven volumes deserve a significant place in the history of biology.

Our bodies are continuously refurbished by the nutrients we consume. I, then, come from the digested and reconstructed molecules of potatoes, rice, chicken and lamb that I eat. If the conversion of potatoes, rice, chicken and lamb into our body parts does not diminish our dignity, claims about the first humans being converted forms of primates shouldn't diminish our dignity, either.

The compatibility of evolution with our dignity and moral values does not imply that evolution is Islamically correct or that it should be accepted. The latter requires an assessment of the evidences of biology, geology, paleontology, etc. Nevertheless, there is no Quranic basis to rejecting evolution from an Islamic perspective on "human dignity".

Some question the compatibility of evolution with Islam on the basis of the creation of humans "in the best conformation" (*ahsani taqweem*):

4- Verily, We create man in the best conformation.;

5- And thereafter We reduce him to the lowest of low.⁸²

Since "the best conformation" concerns the state of humanity, attaining to the state of humanity via evolution would not conflict with this verse. Before gaining the shape of a human, "the best conformation," we all went through the embryonic stages starting from sperm, egg and zygote; yet none of these stages opposes creation "in the best conformation". Moreover, sperm cells and zygotes are much less similar to a human than apes. The statement "the best conformation" refers to the final state of the human being, not to its prior stages.

In addition, when taken together, the two verses above are more about the moral status of humans than their bodily shape. After all, a human being, originally created in "the best conformation," can convert into the "lowest of low" (*asfala safileen*). Yet idolatry and oppression, making us the lowest of the low, do not alter one's physical appearance. Since the statement the "lowest of low" (*asfala safileen*) does not refer to physical deterioration, "the best conformation" (*ahsani taqweem*) doesn't refer to physical shape; rather, it refers to humanity's moral character.

In conclusion, arguments based on "human dignity" and creation in "the best conformation"

⁸² Surah at-Teen, 95:4-5.

do not constitute Islamic evidence against the theory of evolution.

The Nature of Jesus is as The Nature of Adam

The following verse is occasionally used as an argument by some Muslims against the theory of evolution:

*Verily, in the sight of God, the nature of Jesus is as the nature of Adam, whom He created out of dust and then said unto him, "Be" - and he is.*⁸³

Some claim that "the nature of Jesus is as the nature of Adam" implies the fatherless creation of Adam; since Jesus was created without parents, Adam was also created without parents (hence did not evolve from pre-existing species). Yet, according to the Quran, Jesus had a mother and was born through the normal and natural processes of pregnancy and delivery.⁸⁴ If Adam is in all ways like Jesus, Adam must also have been born from a mother through very normal and natural processes. The similarity of Adam to Jesus, then, cannot imply coming into existence without processes.

Given this verse's narrative context concerning Jesus and Christians, the subject of the verse is not Adam but Jesus, aiming to correct misbeliefs about Jesus. According to Islamic faith, the common misbelief about Jesus is the attribution of divine nature to him. Therefore, the verse proceed as follows: "You attribute divinity to Jesus, yet his essence is but dust just as Adam; like Adam, Jesus does not have a godlike nature." The verse, taken in context, says nothing about the processless creation of Adam. Instead, it aims to correct a mistaken belief about the nature of Jesus. Hence, its reference to Adam does not indicate his fatherless creation, instead it reveals the very ordinary creation of Jesus from the dust and thereby stresses that he has no extraordinary nature.⁸⁵

Furthermore, the pronoun "him" (the suffix "hu" in the arabic word "khalaqahu") may also refer to Jesus. If so, the verse reveals the creation of Jesus from dust and raw materials upon God's order "Be." Indeed, another verse from the Quran describes the creation of Jesus upon the order "Be":

⁸³ Surah Ali-Imran, 3:59.

⁸⁴ Surah Maryam, 19:19-27

⁸⁵ Even if the verse is interpreted with emphasis on the fatherless creation of Jesus, it should be understood as follows: "You do not comprehend the fatherless birth of Jesus, yet for the One who created Adam from raw materials of the earth this is a facile matter." It should also be noted that many scholars of the Quran interpret the word "Adam" here as a representation of humankind.

*Said she: "O my Sustainer! How can I have a son when no man has ever touched me?"
It is answered: "Thus it is: God creates what He wills when He wills a thing to be, He
but says unto it, 'Be' - and it is."⁸⁶*

As noted several times so far in this book, the keyword in the approach of this book is "process". When the Quran says God created Zachary "out of nothing,"⁸⁷ it surely does not imply his processless creation.⁸⁸ "Creation out of nothing" does not preclude Zachary's having parents, his mother going through pregnancy and delivery, or his childhood. Just as the "creation of Zachary out of nothing" does not preclude processes, the creation of Adam (or Jesus) from dust also does not preclude them. Since "processes" could be evolutionary, the Quran does not preclude the affirmation of evolutionary processes in the creation of Adam. Neither the similitude of Jesus and Adam, nor any other statement in the Quran, require belief in the immediate, processless (without parents) creation of Adam from dust.

⁸⁶ Surah Ali-Imran, 3:47.

⁸⁷ Surah Maryam, 19:9.

⁸⁸ If this statement were used in the Quran about Adam, it would have been much harder to convince people that there is no problem with believing in God's creation of Adam through evolution.

Creation Out of *Nafsi Wahida*:

Is It Descent from Adam and Eve?

While some Muslims hold that every other species of living beings was created through evolution, humans, they claim, are a special exception. However, as we've been arguing, there is no Islamic problem in believing that God created all living beings, including humans, through evolutionary processes. How, then, should we understand the Quran's claim of "creation out of one kind/entity (*nafsi wahida*):"

*O mankind! Be conscious of your Sustainer, who has created you out of one kind, and out of it created its mate, and out of the two spread abroad a multitude of men and women.*⁸⁹

Some Muslim theologians interpret "one living kind/entity" (*nafsi wahida*) in this and other verses as the creation of Eve⁹⁰ from Adam's rib, and descent of all mankind from this couple. However, the Quran does not imply anything about the creation of Eve from Adam's rib. This belief snuck into the Muslim world from the Judeo-Christian tradition (*Isra'iliyyat*). Muslim scholars hold that *Isra'iliyyat* contains many apocryphal narratives; thus, Muslims should not base their religious views about creation on such narratives.

This narrative is also exploited in the denigration of women--woman's creation from and for man is used to attribute ontological inferiority to women. Some go so far as to claim that since woman was created from an errant rib, she has an inborn tendency to go astray. Again, the Quran neither contains nor tolerates any such sexist arguments.⁹¹

The creation of humanity out of one single kind is more properly understood as asserting that men and women are members of the same species.⁹² In support of this interpretation, we read, in the following verses, the Arabic word "nafs" used with the meaning "kind":

⁸⁹ Surah an-Nisa, 4:1.

⁹⁰ The name "Eve" does not occur in the Quran.

⁹¹ For more on this subject, you can refer to: Asma Barlas, **Believing Women in Islam**, University of Texas Press, Austin, 2002, p. 133-136.

⁹² Erkan Yar, *Ruh-Beden İlişkisi Açısından İnsanın Bütünlüğü Sorunu*, Ankara Okulu Yayınları, Ankara, 2000, p. 78-79.

*He creates for you mates out of your own kind (nafs).*⁹³

*... he raised up in their midst an apostle from among themselves (nafs)...*⁹⁴

As indicated by these verses, first verse emphasizes the creation of mates of the same kind, and the other verse emphasizes sending of messengers among that same kind. The latter verse stresses, for example, that the apostles were not chosen from among angels. Neither mates nor apostles were created from the body parts of humans! If we understand the term "creation out of one kind/entity (nafsi wahida)" the same way—as members of the same, human species—as in the two verses above, all confusion is clarified.

Furthermore, the claims of these verses extend to all of humanity; the verse quoted at the beginning of this chapter, for example, which begins with the exclamation "O Mankind!" goes on to say that God "...has created you (halaqakum) out of one living kind/entity." "You," then, refers to the whole of mankind, including the first human (Adam). "Creation from one living kind/entity," in its Quranic context, refers to all humankind. If, as some have claimed, "one living kind/entity" referred solely to Adam, the Arabic word should have begun with the definite article "al" (al nafsi wahida).⁹⁵ Therefore, the definition of "one living kind/entity" does not refer to a single person (Adam) but to the creation of the humankind -- men and women.⁹⁶

Although the term "one living kind/entity" (nafsi wahida) is mentioned five times in the Quran, none of these occurrences overtly refers to Adam. The following two verses shed more light on this issue:

189- It is He who has created you out of one living kind/entity, and out of it brought into being its mate, so that man might incline towards woman. And so, when he has embraced her, she conceives a light burden, and continues to bear it. Then, when she grows heavy with child, they both call unto God, their Sustainer, "If Thou indeed grant us a sound child, we shall most certainly be among the grateful!"

190- And yet, as soon as He has granted them sound offspring, they begin to ascribe to other

⁹³ Surah ar-Room, 30:21; Surah an-Nahl, 16:72; Surah ash-Shu'ra, 42:11.

⁹⁴ Surah Ali-Imran, 3:164.

⁹⁵ According to Quranic exegesis scholar Mehmed Okuyan, if in the verse at the beginning of Surah Al-Nisa, "one living kind/entity" meant Adam and his mate meant "Eve"; instead of "its/her mate" (zawjeha), "his mate" (zawjateha) could have been used to make the matter open. Likewise, instead of "out of it/her" (minha), "out of him" (minhu) could have been used.

⁹⁶ Mehmet Okuyan, **Unpublished Notes on Quranic Exegesis.**

*powers beside Him a share in bringing about what He has granted them! Sublimely exalted, however, is God- above anything to which men may ascribe a share in His divinity!*⁹⁷

If "nafsi wahida" in verse 189 refers to Adam, then Adam's spouse and children committed Islam's greatest sin: ascribing to other powers beside God (*shirq*). When the term is understood as referring to humankind, this bizarre conclusion disappears; instead, the verse indicates that, due to their children, part of humankind fall into "shirq." Surah al-Baqarah, verse 37 tells us "... and He (God) accepted his (Adam's) repentance...", yet it does not mention anything about Adam's fall into the bigger sin of *shirq*, offering another reason why "nafsi wahida" should not be interpreted as "Adam". Furthermore, verse 189 reveals that the reason behind the creation of mates is "inclination with love," which is not restricted to the first humans but applies to the entirety of humankind.⁹⁸ This again supports our argument that the expression refers to humankind in general.

A related discussion worth mentioning here is whether Adam was created with his spouse alone, or whether they were part of a larger community. Independently from debates surrounding the theory of evolution, some Quranic exegesis scholars held that Adam was created within a society. They argue that creation from just one couple would require reproduction of their children through incestuous relationships. Since the Quran rejects incest, it would be erroneous to support such a claim.⁹⁹ These scholars do not interpret "bani Adam" (sons/followers of Adam) as an ancestral link. The Arabic word "bani" also means "follower, adherent". For example, the term "bani-Israeel" is used many times in the Quran in reference to Jews, while not all Jews are descendants of Jacob ("Israeel" is the alias of Jacob). Moreover, the Quran also calls out to "your father Abraham" (Abikum Ibraheem)¹⁰⁰ to point out Abraham's spiritual leadership, not his biological paternity.¹⁰¹ From this perspective, the Quran does not hold Adam to be the biological father of all humankind; instead, it holds that Adam is the first human who was responsible, or being the first profit of first responsible society.¹⁰²

⁹⁷ Surah al-Araf, 7:189-190.

⁹⁸ A similar statement occurs in Surah ar-Room, verse 21.

⁹⁹ Mehmet Okuyan, **Unpublished Notes on Quranic Exegesis**.

¹⁰⁰ Surah al-Hajj, 22:78.

¹⁰¹ İsmail Yakıt, **Kur'an'ı Anlamak**, Ötüken Neşriyat, İstanbul, 2003, p. 68-70.

¹⁰² Yet it can be said that if Adam was a member of primordial society, their offspring would possess genes coming from the initial group of which Adam is the dignitary. Therefore, even if humanity began with a small group, Adam still is the "genetical father" (designated representative) of later generations. Yet we should keep

The Quran tells us that when God told the Angels that He will "...establish upon earth one who shall inherit (*khalifa*) it..." they were surprised and asked "Wilt Thou place on it such as will spread corruption thereon and shed blood?"¹⁰³ According to some Quranic exegesis scholars this response indicates the existence of human beings prior to Adam. Had the angels not seen those beings, they could not have known of their tendency to corruption and asked why such a creature with corruptive nature will be *khalifa*. Therefore, according to these scholars, Adam and Eve were not the first human couple; instead, Adam is the first to assume the mission of "khalifa" (inheriter), a being with free will and moral responsibilities. Hence, centuries before the emergence of the idea of evolution, many Muslim scholars found no theological problems in accepting the existence of "hominids" prior to Adam.¹⁰⁴

In addition, the following verse of the Quran is used as an argument to interpret "Adam" (for some or all occurrences of the word) not as a single person, but as mankind:

*Yea, indeed, We have created you, and then formed you; and then We said unto the angels, "Prostrate yourselves before Adam!" - whereupon they all prostrated themselves, except Satan: he was not among those who prostrated themselves.*¹⁰⁵

This verse first addresses all of humanity "We have created you, and then formed you", and then calls to the angels "Prostrate yourselves before Adam!". This brings about the possible use of the word "Adam" as a reference to the entirety of mankind, as pointed out by some Quranic exegesis scholars.

While the word "human," in the Quran, is related to the biological "homo sapiens," it is not identical to it. According to scripture, a "human" can talk, and has free will and moral responsibility. Remember that the Quran emphasizes Adam's ability to use language,¹⁰⁶ which is a prerequisite to form a culture, to comprehend, and to be morally and religiously responsible. Monotheistic believers who accept evolution as the method used by God to create, can consider Adam (referring to a single person) the first member of "homo sapiens"

in mind, "Bani" does not necessarily imply biological ancestry.

¹⁰³ Surah al-Baqarah, 2:30.

¹⁰⁴ In his book, *Kitab-ul Tawheed*, Ibn Babawayh mentions the existence of hominids prior to Adam. Similar opinions were also defended in the book "Jamiul Akhbar" and by Mohammad al-Baqr. Süleyman Ateş, *Kur'an Ansiklopedisi*, vol. 1, Kuran Bilimleri Araştırma Vakfı, 1997, p. 123.

¹⁰⁵ Surah al-Araf, 7:11.

¹⁰⁶ Surah al-Baqarah, 2:31-33.

who had evolved to such a level that he could speak, use his will and assume responsibility; hence, the "first human". Furthermore, one can imagine that his descendants were produced via the mating of other members of his species (*homo sapiens*), who became responsible after him (or together with him). So this view eliminates the need for incestuous relationships. This approach reconciles the two views about the origin of man being a small group and Adam being the first responsible human. Such an approach does not contradict the content of the Quran.

Another rational possibility takes Adam to be the prophet or leader of the first society that developed language and was responsible. This perspective coheres with Surah Ali Imran, verse 33: "*Allah did choose Adam and Noah, the family of Abraham, and the family of Imran above all people*". The word "choose" (*istafa*) suggests making a choice among alternatives. Noah and Abraham, for example, were chosen among many people in their societies; thus, for Adam, "choose" implies being chosen among his contemporaries.

In conclusion, the word "human," as used in the Quran, is not identical to the biological species "*homo sapiens*;" instead, it may refer to a group originating from this species. There is not any conflict between this claim and evolutionary ideas. And, since the Quran does not contain a detailed exposition of such claims, Islamically it is not compulsory to accept or reject evolutionary ideas related to this issue. We can comfortably state, then, that there is no problem for a Muslim to accept them.

Where was Adam Created?

Many Muslims rejected the evolution of humans based on statements in the Quran about the creation of Adam in “jannat (heaven)”. They say that Adam descended to earth from jannat, not through an earthly, biological process. However, "jannat" in the Quran, "jannat" can mean both heaven ("the gardens where the righteous will stay after death") and, literally, the gardens of this earth. The following verses are examples of the latter use:

Set forth to them the parable of two men: for one of them We provided two gardens [jannat] of grapes and surrounded them with date palms; in between the two We placed corn-fields.¹⁰⁷

or thou have a garden [jannat] of date-palms and grapes and cause rivers to gush forth in their midst in a sudden rush,¹⁰⁸

Behold, We but try them as We tried the owners of a certain garden [al jannat] who vowed that they would surely harvest its fruit on the morrow,¹⁰⁹

The first verse mentions the owner of a garden, while the following describe its destruction. The second verse narrates the demands of rejecters of prophethood of Muhammad that he should possess gardens and rivers in this world. Lastly, the owners of the garden in the third verse also lived in this world. The Arabic definite article "al", used before "jannat" in the third verse, can refer to a specific garden on the earth. Since the same word is also used for earthly gardens, the creation of Adam in “jannat” does not imply that he was created in heaven. Indeed, some scholars including Matouridi, stated that Adam was created in an earthly garden.¹¹⁰

An important argument for Adam's creation in a worldly garden is the statement in Surah al-Baqarah verse 30 that he was appointed "khalifa" (inheritor, viceroy) on the earth.¹¹¹ In Surah as-Saad the appointment of David as a viceroy on the earth is described with the same word. Since Adam is appointed "khalifa" on the earth, his domain of responsibility is there. As a

¹⁰⁷ Surah al-Kahf, 8:32.

¹⁰⁸ Surah al-Isra, 17:91.

¹⁰⁹ Surah al-Qalam, 68:17.

¹¹⁰ Mehmet Okuyan, **Unpublished Notes on Quranic Exegesis**. Ibn Qayyim al Jazwiyya quoted similar thoughts from Abu Hanifa

¹¹¹ Süleyman Ateş, Kur'an Ansiklopedisi, p. 129-131.

result, it is preferable to think that Adam was created on the earth, not on another dimension and teleported down to earth.

As discussed, all humans are created from the raw materials of "clay," which likewise make up the earth. But we don't know about the aspects of "jannat" in the Hereafter. If the raw materials that constitute humans, including the first one, also constitute the earth, it is reasonable to assume that humans were created on earth. The Quran does not record this bizarre chain of events: the "creation of man from clay and his appointment as "khalifa" on the earth; his transfer to another dimension; his return to earth". One would expect, if true, such an important chain of events being mentioned by the Quran.

The Quran also mentions Satan's deception of Adam with the promise of eternity.¹¹² This means that Adam should be aware of what death is, whereas "jannat" in the Hereafter, as described in the Quran, is the place deathlessness. This is another reason to believe that Adam was created in an earthly garden (on earth).

The Muslim conception of Heaven is not compatible with the heaven Adam from which is claimed to have been deported. For example, Heaven is the place for the righteous and Satan cannot enter it; yet Satan seduced Adam. The fruits of heaven are not forbidden, yet in Adam's "jannat" there was a forbidden fruit.¹¹³ There is no deportation from heaven; yet Adam and his mate were deported.¹¹⁴ More importantly, heaven is the place of the "Hereafter"; the place where the human odyssey ends. If the "jannat" in which Adam was created were Heaven, it would not be called the "Hereafter (ahirat)".

Verse 36 of Surah al-Baqarah reveals that Adam fell down, changed place, was reshaped ("khubut") after his sin. Those who believe that Adam's "jannat" is in Heaven interpret "khubut" as falling down to the earth from another dimension; those who think that it is a worldly garden interpret "khubut" as a change of place on the earth.¹¹⁵ I prefer the latter opinion. Indeed, "khubut" is also used for Noah and his followers to describe their disembarking of the Ark, their change of place on earth.¹¹⁶ "Khubut" also describes Moses and his followers' migration to a city.¹¹⁷ In the Quran never uses "khubut" to describe the

¹¹² Surah al-Araf, 7:20; Surah Ta-Ha, 20:120.

¹¹³ Surah al-Waqiah, 56:33.

¹¹⁴ Surah al-Hijr, 15:48.

¹¹⁵ İsmail Yakıt, Kur'an'ı Anlamak, p. 84-85.

¹¹⁶ Surah Hood, 11:48.

¹¹⁷ Surah al-Baqarah, 2:61.

transition from heaven to earth or from one dimension to another.¹¹⁸

In summary, the Quran, taken as an integrated whole, teaches that Adam was created on earth, which is compatible with God's creation of all species, including humans, on earth through evolution. Indeed, the creation of Adam on the earth is supported by the Quran irrespective of evolution, as argued by Quranic exegesis scholars who lived centuries before Darwin.

¹¹⁸ In Genesis 2:7-8 Adam is said to be created on the earth, in accordance with these interpretations. However, due to the caveats about Israiliyyat I mentioned earlier, I do not present this accord as an additional argument.

Differences Between Muslim and Christian Perspectives on the Theory of Evolution

The theory of evolution was invented, developed, debated and established in the Christian world. When the theory was transferred to Muslim lands, believers reproduced the reactions of their Christian counterparts. In Turkey, for example, the earliest reactions to evolution were presented in translated books of Christian views.¹¹⁹ These resources engendered the belief in Turkish Muslims that the theory of evolution faced similar responses on Islamic grounds. Of course, some issues, such as "creation from clay" and "creation through processes," are critical to understand for both Muslims and Christians. On the other hand, some responses to evolution are specific to Christian theology alone. Since some arguments used by Muslims against evolution stem from an unconscious imitation of Christian groups, it is worthwhile to distinguish distinctly Christian and Muslim approaches to evolution. The discussions about the age of the earth we presented in an earlier title are an example. We will briefly (since our main focus is the Islamic perspective) examine the implications of original sin and the identity of Jesus from Muslim and Christian perspectives.

The doctrine of original sin in Christianity is grounded in Genesis and detailed in Romans of the New Testament. According to this, the sin committed by Adam is inherited by all of his descendants; thus, every human being is born a sinner. Salvation from this sin is possible only through Jesus.¹²⁰ Christian teaching connects Adam's "fall" into sin with the crucifixion of Jesus and his consequent redemption for all the sins of humanity.¹²¹ Original sin forms one of the most fundamental elements of faith in most Christian denominations. Judaism, on the other hand, rejects both original sin and the evil nature of man.¹²² Certain passages from the Old Testament declare that children do not bear the responsibility for their parents' sins.¹²³ Likewise, Islamic faith rejects "original sin".

¹¹⁹ An example of such a translation is: Duane T. Gish, Fosiller ve Evrim, Tr: Adem Tatlı, Cihan Yayınları, 1984. However, there had been influential theologians (Ismail Fenni, Ahmed Hamdi Akseki, Suleyman Ates, etc.) who welcomed the theory of evolution from an Islamic perspective, prior to these translations. Details can be found in: Alper Bilgili, "An Ottoman Response to Darwinism: İsmail Fenni on Islam and Evolution", British Journal for the History of Science, Vol: 48, No. 4, 2015, p. 565-582.

¹²⁰ P. Luigi Ianitto et al., Hristiyan İnancı, Tr: Leyla Alberti, Sent Antuan Kilisesi, 1994, p. 63-64.

¹²¹ P. Luigi Ianitto et al., Hristiyan İnancı, p. 104.

¹²² Benjamin Rabbi Blech, "Understanding Judaism", Jason Aronson, Inc., 1992

¹²³ Deuteronomy, 24:16; Ezekiel, 18:20.

For our considerations, the most important aspect of the notion of "original sin" is the claim that death entered the world—humans and animals began to die—only after the fall.¹²⁴ Yet paleontological results show that life has existed on the earth for hundreds of millions of years. As a result, such claims are incompatible with findings of the theory of evolution and paleontology. On the other hand, other Christian groups claim that the statements in the Old and New Testament refer to humans alone, and that claims of animals starting to die only after the fall has no Biblical basis.¹²⁵ They argue that such claims stem from misinterpretation of Romans 5:12. It was declared to Adam before his sin that: "*but you must not eat from the tree of the knowledge of good and evil, for when you eat from it you will certainly die*".¹²⁶ Had he not seen other animals die beforehand, he could not have known what death means.¹²⁷ The interpretation of the fall as the beginning of death for animals is incompatible with scientific findings. So many Christian theologians and scientists reject such an interpretation of the scriptures and find no problem accepting the theory of evolution. Although these discussions are specific to Christian theology, they contribute to friction with the theory of evolution.

The divine identity of Jesus is also believed to have an aspect against the theory of evolution. After centuries of debate, it was decided in the Council of Chalcedon (in the year 451) that Jesus possesses both human (without a tendency towards sin) and divine natures combined.¹²⁸ Debates about the nature of Jesus constituted the hottest debates during the first couple of centuries after his death. Today, apart from some minor groups and denominations (e.g. Unitarianism) the predominant majority of Christians believe in the divinity of Jesus.¹²⁹ To the point at hand, many Christians find it problematic to establish an ancestral link between animals and "divine Jesus".

Those who believe in the divine nature of Jesus also believe that he is fully human as well.¹³⁰ But some find it acceptable that Jesus and Mary descended from humans originally created from raw materials of earth. So, if one does not hold the earthly origin against the dignity of Jesus, one also should not hold their ancestral relation to other living creatures (fish, reptiles,

¹²⁴ Paul Nelson and John Mark Reynolds, "Young Earth Creationism", Three Views on Creation and Evolution, Zondervan Publishing House, Michigan, 1999, p. 41-73.

¹²⁵ Robert C. Newman, "Progressive Creationism", Three Views on Creation and Evolution, Zondervan Publishing House, Michigan, 1999, p. 111.

¹²⁶ Genesis, 2:17

¹²⁷ John Jefferson Davis, Response to Paul Nelson and John Mark Reynolds, p. 83.

¹²⁸ Christian W. Troll, "Muslims Ask, Christians Answer", New City Press, 2012.

¹²⁹ There have also been renowned historical figures (such as Isaac Newton) who rejected the Trinity but stayed devout to Christianity. Karen Armstrong, The Battle for God, Ballantine Books, New York, 2001, p. 69.

¹³⁰ P. Luigi Ianitto et al., Hristiyan İnancı, p. 31.

apes etc.), also created from the earth, against their dignity. Indeed, among the many evolutionist-Christians, the Pope has declared that the theory of evolution is compatible with Christianity (Catholicism).¹³¹

In conclusion, the doctrines of "original sin" and "identity of Jesus" are specific to Christianity among the monotheistic faiths. The theory of evolution was developed in the Christian-dominated world and these doctrines formed the grounds for religious opposition to the theory. Although many Christians did not consider those issues problematic, others advocated evolution's incompatibility with religion. For a Muslim, on the other hand, the doctrines of original sin and the divine nature of Jesus are against the Islamic faith; so there is no reason for a Muslim to argue against evolution based on these ideas. However, when Muslims encountered the evolution debates in Christian resources, they were unaware that much of those debates stem from issues specific to Christianity; they were likewise unaware that many Christian scholars, philosophers and scientists saw no incompatibility between evolution and Christianity. Given that some Christian anti-evolutionist resources were intentionally chosen for translation into Muslim languages, the importance of discerning issues particular to Christianity becomes more evident.

¹³¹ John Paul II, "The Pope's Message on Evolution", *Quarterly Review of Biology*, No: 72, 1997, p. 377-383. It should be kept in mind that lengthy discussions of a committee of experts preceded the Pope's declaration.

Does the Quran Reveal the Theory of Evolution?

In our discussions so far we have seen that there is nothing against believing in the theory of evolution from an Islamic perspective. That is, evolution is compatible with the Quran. If a Muslim *can* accept the theory of evolution, are we saying that a Muslim *must* accept the theory? In reply: just as the Quran doesn't require the *rejection* of evolution, the Quran also doesn't require the *acceptance* of evolution. *The Quran neither endorses nor forbids the theory of evolution.* The primary message of the Quran is the belief that God has created everything with His Power within the framework of His conscious plan. So far, my concern has been to correct misinterpretations of certain verses of the Quran, which are used as attempted arguments against evolution. In this chapter, I will argue that it is inappropriate to interpret the Quran to make it appear to favor of evolution. The Quran, once again, is neutral with respect to evolution; it neither favors nor rejects it.

The following verses are referred (for claiming that the Quran reveals the theory of evolution) in these kinds of discussions:

*14- He has created you in successive stages?*¹³²

*17- God makes you grow out of the earth like plants.*¹³³

*30- Are, then, they who are bent on denying the truth not aware that the heavens and the earth were once one single entity, which We then parted asunder? – and We made out of water every living thing? Will they not, then believe?*¹³⁴

*1- Has there not been an endless span of time before man appeared - a time when he was not yet a thing to be thought of?*¹³⁵

The first verse reveals the creation of man in stages. But even if we interpret the term "successive stages" as evolution, literal "evolution" is not the same thing as the "theory of evolution." The Quran also describes embryonic stages in detail, where the zygote "evolves" into a fetus and a baby.¹³⁶ Yet these events have nothing to do with the theory of evolution. It is one thing to find expressions in the Quran relating to the term "evolution" in one way or

¹³² Surah Noah, 71:14.

¹³³ Surah Noah, 71:17.

¹³⁴ Surah al-Anbiya, 21:30.

¹³⁵ Surah al-Insaan, 76:1

¹³⁶ Surah al-Mu'minoon, 23:12-14; Surah al-Hajj, 22:5.

another; it is totally another thing to find statements in support of a theory that describes the emergence of all living species from a common ancestor. Yet that the Quranic descriptions of creation through stages can help move us away from the demand or expectation of an immediate creation. Nonetheless, it is an exaggeration to claim that in such descriptions the Quran reveals the theory of evolution.

While the second verse above (Noah, 17) includes. "*God makes you grow out of the earth like plants*" it cannot be interpreted as evidence for the theory of evolution, either. A similar statement is also used in the Quran for Mary: "*Her Lord accepted her in a handsome manner and caused her to grow like a lovely plant*",¹³⁷ yet this verse does not mean evolution (both verses contain the Arabic word "nabat", used for plants). In Noah 17, there is an additional phrase "out of the earth", but one must still not make a jump to evolution. The Quran reveals that humans are created from dust and water. Since plants are also created from the same raw materials, there is a similarity in the developments of humans and plants. Likewise, the Quran affirms a similitude between growth of vegetation out of the earth watered with rain and the resurrection of people after death.¹³⁸ On the tree of life constructed by the theory of evolution, humans are closer to reptiles and fish than to plants. Therefore, it would be an exaggeration and misjudgment to interpret a similitude between plants and humans as an indication of the theory of evolution.

Similar arguments also hold for the third verse, al-Anbiya, 30. As detailed in previous chapters, the Quran makes frequent references to creation from water, dust, earth and clay, thereby drawing attention to the raw materials of life. Even the supporters of the independent creation of species accept that humans are constructed of these materials. A chemical analysis of the human body reveals that the human body is made of both water and many other elements from the earth.

The fourth verse, al-Insan verse 1; "*Has there not been an endless span of time before man appeared - a time when he was not yet a thing to be thought of?*" is understood by some as a description of single-celled organisms and the epoch in which they lived. However, "not yet a thing to be thought of" could refer to any period from the beginning of the universe or the earth to the appearance of man. The history of man is short when compared to the age of the earth (4.5 billion years) and that of the universe (13.8 billion years). As a result, the period of

¹³⁷ Surah Ali-Imraan, 3:37.

¹³⁸ Surah al-Araf: 7:52; Surah al-Hajj: 22:5; Surah al-Jathiyah: 45:5; Surah al-Hadeed, 57:17.

time mentioned in this verse simply refers to the time prior to the existence of humans. The message of the verse is to remind humans of their long-time nothingness as an invitation to humility.¹³⁹

In addition, the following verses of the Quran are also interpreted as pointing to the theory of evolution:

65- For you are well aware of those from among you who profaned the Sabbath, whereupon We said unto them, "Be as apes despicable!"

66- And set them up as a warning example for their time and for all times to come, as well as an admonition to all who are conscious of God.¹⁴⁰

60- Say: "Shall I tell you who, in the sight of God, deserves a yet worse retribution than these? They whom God has rejected and whom He has condemned, and whom He has turned into apes and swine because they worshipped the powers of evil: these are yet worse in station, and farther astray from the right path."¹⁴¹

While some interpret "turning into apes" in the first verse as evidence of evolution, the second verse mentions turning not only into apes but also into swine; but swine have no special relation to humans in the tree of evolution. While some Quranic exegesis scholars took the conversion to be literal (claiming that rejecters and infidels turned into animals), others argued that the similitudes with those animals indicate a change of character.¹⁴² Swine, according to this interpretation, indicates moral uncleanness¹⁴³ and apes indicate a lack of humanly characters and values. I side with the Quranic exegesis scholars who understand "turning into animals" (Arabic word "mash") in terms of moral deterioration. The Quran also describes those who were held responsible from the Holy Scriptures yet did not abide with them as "donkeys carrying loads of volumes of books", supporting our approach.¹⁴⁴ Some theologians argue that "turning into apes" cannot be taken literally according to the Arabic grammar, as follows: "If it meant literally (in 2nd sura 65) turning into apes, then 'qiradatan

¹³⁹ Hayrettin Karaman et al., Kur'an Yolu Türkçe Meal ve Tefsir, Vol.: 5, 2004, p. 441.

¹⁴⁰ Surah al-Baqarah, 2:65, 66.

¹⁴¹ Surah al-Maidah, 5:60.

¹⁴² Elmalılı M. Hamdi Yazır, Hak Dini Kur'an Dili, Cilt: 1, 2011, p. 317.

¹⁴³ Surah al-An'am, 6:145.

¹⁴⁴ Surah al-Jumaah, 62:5.

hasieten' should have been used instead of 'qiradatan hasiin'"¹⁴⁵

Even if someone assumes that the passage describes conversion into animals as a form of punishment, it does not describe the creation of new species. Even if such verses reveal the possibility of turning humans into animals, they don't imply the theory of evolution. All Muslims believe in God's ability to turn anything into anything else. The question is not "What God is able to do?" but "What process has God followed in creation?" Hence, the possibility of the conversion of species into another does not imply the theory of evolution. Finally, evolution claims that humans descended from other animals, not the other way around.

Nonetheless, modifications within species themselves is not unknown to religions. While all monotheistic religions agree upon affinity with human race, they see variations such as white, black, Asian, etc. Thus the constancy of species cannot be directly associated with religions. The following verse of the Quran also implies that humankind has gone through advances and modifications:

*Remember how He made you viceroys after Noah's folk, and gave you growth of stature.*¹⁴⁶

As seen, the idea of the modification of human species is affirmed in the Quran, militating against those who defend the constancy of species on religious grounds. In the 19th century, part of the opposition to the theory of evolution stemmed from the belief in fixity of species.¹⁴⁷ Finally, and to return to our argument, even though the Quran affirms the modification of humankind, such verses cannot be interpreted as a revelation of the theory of evolution.

¹⁴⁵ Erkan Yar, *Ruh-Beden İlişkisi Açısından İnsanın Bütünlüğü Sorunu*, p. 154.

¹⁴⁶ Surah al-Araf, 7:69.

¹⁴⁷ Ernst Mayr, *Toward A New Philosophy of Biology*, p. 177.

Theological Agnosticism on the Theory of Evolution

So far, I have attempted to show that the theory of evolution is compatible with belief in God, and that from an Islamic perspective there is no need to oppose this theory. I argued that Quranic terminologies such as "creation from clay" and "*nafsi wahida*" do not require the rejection of evolution. In the previous section I rejected the claim that some verses of the Quran openly reveal the theory of evolution. When combined, these arguments show that it is impossible to argue for or against the theory of evolution based solely on the content of the Quran. The best stance for a Muslim, then, is to evaluate scientific-philosophical aspects of the theory independently from religious concerns, remaining theologically agnostic about evolution. By theological agnosticism, I mean that since the Quran neither favors nor rejects the theory, one should, *with respect to theology*, be agnostic about whether evolution is true or not; there are simply no texts in the Quran that affirm or deny the truth of evolution. Therefore, a Muslim should in good faith focus entirely on the scientific aspects of the theory (safely setting religious considerations aside).

I do not use the term "theological agnosticism" in its common sense of "God is unknowable". The Quran affirms both the existence of and attributes of God (such as His Knowledge and Power). And it reveals the creation of life by God. However, since the Quran does not reveal the method which God has followed in creation, it is rational to be agnostic over these methods, when viewed from a purely religious angle. I suggest adapting theological agnosticism over every issue that does not conflict with the existence of God or content of the Quran. So, for example, we should remain theologically agnostic about the precise number of continents, whether they were once conjoined but split off according to plate tectonics. And since we can't know from studying the Quran, we should likewise remain theologically agnostic about whether species were created independently or evolved from each other.

My religion does not teach me to be *scientifically* agnostic about evolution; it teaches me that there is no problem no matter whatever stance I take on it. In other words, "theological agnosticism" does not describe view of the theory itself; it describes my position when I view the theory from a purely religious angle. A Muslim should approach this theory from this perspective and stays unprejudiced; Muslims should reach their opinions about it without any religious concerns (just as they should do when assessing theories of light, fluid dynamics or

Einstein's general theory of relativity).

What does the scientific evidence say about the theory of evolution? Despite some remaining questions about it, it is the most successful scientific theory of all alternatives. Indeed, there is a marvelous beauty in this theory as it relates all living beings to each other and reveals some kind of a unity in life.

Approaches to science-religion relations can be categorized, following Kelly James Clark's simple nomenclature, as conflict, separation and integration.¹⁴⁸ The metaphor of conflict is probably the most pervasive in contemporary society. The conflict view holds that religion and science are in perpetual warfare. And while it's true that at various times and in various places, certain expressions of religion have conflicted with good science, it's simply untrue that religion and science are *perpetually* in conflict. Some religious believers affirmed that the earth is at the center of the universe but physics has shown that to be untrue; and other religious believers denied a really old earth, but geology has shown that to be untrue. But, besides these few and notable conflicts between, again, very particular expressions of religion (ones most religious believers have easily abandoned) and science, it is simply unfair to portray science and religion as perpetually or in principle in conflict or at war.

If the Quran required the rejection of the theory of evolution, there would have been an incompatibility with a claim of science and religion. But none of the Quran's numerous verses about life in general and humankind in particular conflict with evolution. Conflict, of course, was a possibility. For example, if a verse had claimed that the universe, life or humans were created six thousand years ago, that would have been a conflict with scientific results. Or, if the Quran had taught that living species never change, there would have been a conflict. But the Quran doesn't. There is no conflict between the Quran and evolution.

The separation view claims that science and religion are so independent domains that they cannot interact and so cannot conflict. According to the separation view, religion is the domain of value (how things ought to be) and science is the domain of facts (the way things are). And never the twain shall meet. So while religion speaks of ethics and the meaning of life, science speaks of how things go in the natural world. If this view is correct, there couldn't possibly be any conflict or even concordance between science and religion.

¹⁴⁸ See Kelly James Clark, **Religion and the Sciences of Origins**. There have been other contemporary categorizations. For example, John Haught has made four-fold, Ted Peters made eight-fold and Willem Drees made nine-fold categorizations. My three-fold preference above is probably the plainest one. For more, see: Ian G. Barbour, "When Science Meets Religion".

While Islamically-speaking there can be no inconsistency between science and Islam, I don't assume science and religion are separate. I see my position close to such Muslim philosophers as Ibn Rushd, who regarded science and religion as companions.¹⁴⁹ My studies have brought me to this fundamental standpoint: science, religion and philosophy cannot possess independent truths. While science and religion have their own, distinct methodologies, they should be integrated into our best and most complete understanding of the world.

The adoption of theological agnosticism, particularly on issues in the philosophy of religion, is important in religion-philosophy-science relations. I don't suggest this merely to resolve conflict. I believe that it is also the best religious stance: if God has not revealed his intentions on an issue to us, it is best to say, "I do not know". Staying theologically agnostic about the methods God used in creation is both compatible with and even preferable for all three monotheistic religions. Such an approach avoids many unnecessary conflicts between religion and science. In addition to the theory of evolution, theological agnosticism is also quite valuable in understanding miracles (whether or not God suspends the laws of nature when miracles occur), and in deciding whether the soul is a separate substance to the material body. These two questions are in some ways related to the theory of evolution. I will briefly discuss them in the next two chapters.

¹⁴⁹ Ibn Rushd actually wrote "philosophy and religion", but at the time the term "philosophy" encompassed studies that we would call "science" today. Ibn Rushd, "Fasl-ul Maqal".

Theological Agnosticism on Miracles

The way miracles are described in holy texts is among the subjects of philosophy of religion, which in general studies God-universe relations. It is appropriate to treat miracles here, since some thinkers relate them to the theory of evolution. The Arabic word used for miracle, "*mu'jeza*", literally describes leaving someone helpless. The Quran does not use this word in today's meaning. In today's daily theological use, miracles describe extraordinary occurrences at the hands of prophets, used to prove their positions and challenge (leave helpless) disbelievers.¹⁵⁰ One of the most controversial philosophical questions concerning miracles is whether or not God suspends the laws of nature during their occurrence. There is no direct answer to this question in the Quran; such discussions fall within the realm of philosophy. Indeed, the phenomena we call "miracle" (*mu'jeza*) today are described in the Quran most commonly by the Arabic word "*ayat*". One of the most commonly used words in the Quran, "*ayat*" often describes phenomena in the nature that we witness—everything that points to the Knowledge, Power and Intentions of God (whether these phenomena occur via suspension of the laws of nature or not is immaterial to the meaning of the word). Its etymology is not decisive concerning the way that miracles occur. The only way to proceed on this matter is to interpret the phenomena described in the Quran and contemplate them under the light of philosophical evaluation of the relation between the laws of nature and God's influence.

Contemporary theist thinkers who think that God would never (not even for a very brief period of time) suspend the laws of nature often defend the theory of evolution as the means God followed in his creation. On the other hand, most of those who think that God sometimes suspends or modifies the laws of nature and thereby intervenes with the universe, tend believe in the independent creation of species (as just such an intervention). Yet even supporters of the suspension view have no reason to reject evolution. Even suspension view holders agree that the overwhelming majority of the phenomena in the universe occur within the framework of the laws of nature (without their suspension); laws, on this view, are God's causal tools. For example, every kitten we see has parents and is borne of its mother. In other words, every cat is born and lives according to the laws of nature. A Muslim who believes in the suspension view also regards every cat as a creature of God. He might, however, attempt to

¹⁵⁰ İlyas Çelebi, *İslam İnanç Sisteminde Akılcılık ve Kadı Abdulcebbar*, Rağbet Yayınları, 2002, p. 316.

explain the creation of the very first cat couple with divine intervention with suspension of the physical laws (even though there is no indication as such in the scriptures). Even if we, for a moment, accept this claim, such an intervention is just one occurrence among billions in the nexus of natural laws. If a Muslim can regard a newborn cat as a creature of God, a process which happens within the nexus of the laws of nature, he/she should not oppose the creation of the first cats via evolution from other species as against creation by God. It is a theological error to deny God's will in all lawful processes.

According to the suspension view, a minor portion of God's creation occurs through the suspension of natural laws, and a very small portion of humans experience suspensions. Holders of the suspension view, who explain the creation of species by direct divine intervention, hold that the first member of every single species was created not via laws of nature but through their suspension. However, if we do not know how something was created, we should expect that it happened according to the ordinary functioning of laws, rather than exceptional events. Furthermore, the possibility of an event does not necessitate its occurrence; thus, the possibility of divine intervention through suspension of the natural laws does not necessitate that species were created instantly.

Imagine for a moment that someone has invented a new game like chess. Imagine further that since he is the creator of the game, he reserves the right to modify the rules of the game as he pleases, during a game he plays with someone else. Would he be more talented if he were to beat his opponent by modifying the rules in his favor in the middle of the game; or would he be more talented only if he were to win by abiding the original rules. If God is the creator of the laws of nature, he can suspend them (change the rules mid-game). However, if God's "talent" is best by creating within the nexus of the laws of nature, we should expect creation to happen this way. While my analogy has limitations, it is fallacious to infer the creation of species via the suspension of laws from the mere possibility for God to suspend the laws of nature.

In my other works I have offered suggestions about how the miracles (ayat) in the Quran might have occurred within the laws of nature.¹⁵¹ Of course, those possible models do not mean that those miracles actually happened that way. Whether or not the laws of nature were suspended is a matter of philosophical debate. In order to properly answer the question "Does

¹⁵¹ My broadest discussion on this topic is presented in: Caner Taslaman, *Kuantum Teorisi, Felsefe ve Tanrı*, p. 41-90.

God suspend the laws of nature?" we need to perfectly understand the laws of nature; however, we are still far from such a complete understanding.¹⁵²

Religious believers can agree that divine intervention can happen with or without the suspension of laws. Whichever position is chosen, the other remains a possibility. A Muslim cannot sensibly claim that "God cannot create species by suspending the laws of nature;" nor can a Muslim sensibly claim that "God cannot create species without suspending the laws of nature". Both options are possible and, since we lack epistemic access to God's intentions, we should withhold belief about which is actual. The content of the Quran does not force us to make a choice. Likewise, as with the theory of evolution, I suggest the adaption of "theological agnosticism" regarding the matter of miracles.

Even firsthand observers of the events we call miracles are unable to explain how they happen. They have, at best, observed a miracle, not how God did it. For example, even if one had directly witnessed Moses divide the sea, one would still not know how it happened; one would know *that* a miracle happened, not *how* the miracle happened. One would not have been able to tell whether God divided the sea by suspending the laws of nature or through a natural process. Our limited knowledge of the laws of nature and our inability to penetrate into microscopic aspects of the phenomena we observe render us unable to determine whether or not laws of nature are suspended during miracles. Since no living person witnessed the prophets' miracles mentioned in the Quran, it is even more difficult to make a judgement on the matter.

While I adopt a theologically agnostic stance towards the theory of evolution, I also believe that evolution is the best scientific explanation. Likewise, one who is agnostic about how God performs miracles might philosophically prefer one approach over the other. Such a preference would not pose any religious difficulties. On the other hand, apart from religion, we should be guided by science, philosophy and intuitions, which together should determine our judgements. One who adopts theological agnosticism on a subject agrees that no conclusion reached from non-religious sources could contradict religion. Moreover, one's theological agnostic stance on this matter has no negative implications on one's Muslim faith; indeed, such a stance is consistent with the tenet, "Everything is possible to God".

¹⁵² Caner Taslaman, Kuantum Teorisi, Felsefe ve Tanrı, p. 41-90.

Theological Agnosticism on Whether or Not the Soul is a Substance Distinct from the Body

Another common subject that often arises from philosophical and theological discussions of the theory of evolution is the distinction of humans from animals: specifically, whether the distinction is in kind or by degree. I will briefly discuss the issue here; more detailed discussions can be found in my other work.¹⁵³ Those who maintain that the distinction is in kind interpret the Arabic words "rooh" and "nafs" in the Quran as the basis of their position. According to this view, the "soul" ("rooh" or "nafs") is an entity separate from the body; two distinct types of entities meet when the soul is given to the body. This idea is called "dualism". Others claim that the soul represents such aspects as self, consciousness and will, properties of a body; while these are aspects of a material body, they do not emerge from the body's combining with an entirely different type of substance (a soul). Again, I recommend "theological agnosticism" about the nature of the soul because no tenet of Islam or text of the Quran requires the acceptance or rejection of dualism. As a result, both views have supporters in Muslims schools of thought. Hence, a Muslim can come to a conclusion on the relationship of soul and body only by the considering philosophical, psychological, neurological, etc. aspects of the issue (that is, without regard to religious concerns). The following verse is often quoted in discussions of body and soul:

28-And lo! Thy Sustainer said unto the angels: "Behold, I am about to create mortal man out of sounding clay, out of dark slime transmuted;

29-And when I have formed him fully and breathed into him of My spirit, fall down before him in prostration!¹⁵⁴

Philosophers often try to understand such passages using imported philosophical terminologies. While some interpret the expression "breathing spirit" as God's granting the properties of life to material bodies, others claim that "spirit" refers to a substance distinct from the material body (which when it is united with a material body generates a human being). But the philosophical term "substance" is never used in the Quran, The expression "My spirit" used in the verse above is interpreted by many sufists as God's gift from within

¹⁵³ You can refer to, for example, the last chapter of: Caner Taslaman, Modern Bilim, Felsefe ve Tanrı, İstanbul, 2011, p. 107-148.

¹⁵⁴ Surah al-Hijr, 15:28, 29.

Himself (a soul) to humans. On the other hand, Quranic statements such as "My home" (used about the Ka'ba),¹⁵⁵ "My servants" (used about the people)¹⁵⁶ indicate that "My spirit" may actually indicate possession. No one understands "My home" as Ka'ba being a part of God. Accordingly, "breathing spirit" does not mean God's giving a piece of Himself, but rather His granting of certain aspects like consciousness (that He also possesses) to humans. As a result, the passage does not imply the distinct substance of soul, or require one to believe that the soul is a part of God.

Some theologians argue that "dualism" in Muslim schools of thought derives from the influence of ancient Greek philosophy on famous thinkers and scholars including al-Ghazali, Raghib al-Isfahani, Ma'mar ibn Abbad as-Soulami, Nawbati, Basanji and Mohammab ibn Nouman.¹⁵⁷ Such thinkers hold that the soul slips from the body upon death into the afterlife. However, those who regard the soul as an attribute of the material body (not a distinct substance) argue that since the resurrection in the Hereafter will happen through the power of God, it does not necessitate the soul's being a distinct substance. Indeed, in Islamic belief, what makes life in the Hereafter possible is not the distinctness of soul, but the power of God.¹⁵⁸ Theologians who reject dualism also point to the following:

*"Descriptions of the Hereafter in the Quran do not reveal the return of the abstract substance, soul, to the body; they rather reveal the return of humanly existence. The Quran never mentions bodiless souls in the Hereafter. It does not contain a description of body - soul duality in the descriptions about man. The Quran never mentions the existence of the soul distinctly from the body; and the soul's bodiless existence after death."*¹⁵⁹

Of course, properties of the "soul/mind" such as aboutness and subjectivity are radically different from the material properties described by the laws of physics (such as attraction-repulsion, wave-particle duality etc.) Physics describes matter, mass, space, time, energy, etc., whereas our sensations of color or feelings cannot be expressed in terms of such quantities.¹⁶⁰ Yet we still don't know if such a radical difference as "soul/mind" requires a substance distinct from material body. This issue is a philosophical one as I have discussed it in much

¹⁵⁵ Surah al-Baqarah, 2:125.

¹⁵⁶ Surah Ibraheem, 14:31.

¹⁵⁷ Erkan Yar, Ruh-Beden İlişkisi Açısından İnsanın Bütünlüğü Sorunu, p. 49-50.

¹⁵⁸ Turan Koç, Ölümsüzlük Düşüncesi, İz Yayıncılık, 2005, p. 77.

¹⁵⁹ Erkan Yar, Ruh-Beden İlişkisi Açısından İnsanın Bütünlüğü Sorunu, p. 207.

¹⁶⁰ Roger Penrose, "The Large, The Small and the Human Mind", Cambridge University Press, 1999.

depth elsewhere,¹⁶¹ I will not go into it here. Nonetheless, since the terminology "substance" is never used in the Quran, a Muslim can take either philosophical stance on the nature of "soul/mind." Hence, in this philosophical discussion "theological agnosticism" is the most appropriate position.

The responsibility of humans to God does not require that humans differ from animals in kind. Those who regard the soul as a distinct substance agree that babies possess souls. But babies differ from adults in degree not in kind. Yet nobody finds the non-responsibility of babies strange. This means that difference in degree can also determine responsibility. It is inappropriate to bring "difference in kind/degree" discussions towards a tension between "religion - theory of evolution". The following facts are critical in this matter:

1. Not every evolutionist agrees that humans and animals only differ by degree.
2. Not every monotheist agrees that humans and animals differ in kind.

The most striking example of the first point above is Wallace, who at the same times as Darwin developed the idea of evolution by natural selection; yet he also explained the human mind and morality via difference in kind. On the other side, some theists (many Kalam scholars, for example) do not consider the soul and body as distinct substance. There is what we might call "the breadth of theist options". From the perspective of a theist, if God wishes, He can grant aspects such as life, thinking, feeling and moral values by creating a "soul" as a distinct substance, or He can place all these aspects inside the material body and thereby grant it a "soul". According to the second perspective, just as God grants matter the ability to acquire new aspects when it makes the transition from energy to particles, from particles to molecules and living organisms, in a similar way the human body attains a "soul". Material substance is created by God with the potential to form living beings with a soul. In other words, the soul is not a substance separate from matter; it emerges when matter reaches a certain form. Philosophy of mind calls this approach "emergence".¹⁶²

Whichever of the two options a Muslim chooses, he should nonetheless agree that the other option is still a possibility for God. For a Muslim, the distinct substance of the soul is not a

¹⁶¹ Caner Taslaman, *Fıtrat Delilleri*, İstanbul Yayınevi, İstanbul, 2017, p.129-269.

¹⁶² Two prominent contemporary supporters of "emergence" are: Philip Clayton, "Neuroscience, The Person and God: An Emergentist Account", Ed: Robert John Russell et al., *Neuroscience and The Person*, Vatican Observatory Publications, 2002, p. 181-214; Arthur Peacocke, "The Sound of Sheer Silence: How Does God Communicate With Humanity?", Ed: Robert John Russell et al., *Neuroscience and The Person*, Vatican Observatory Publications, 2002, p. 215-247.

vital issue.¹⁶³

I summarize my theological agnosticism on the soul as follows:

1. It is incorrect to claim that "according to Islam, humans differ from other species in kind, and consequently humans possess an absolutely distinct substance—a soul".
2. In the discussions about the distinctness of soul, the best position is theological agnosticism; as such, the debates are strictly philosophical.
3. A discussion of whether humans differ from animals in kind or in degree should not be a subject of friction between religion and the theory of evolution. Just as there are theologians who hold that humans do not differ in kind (hence the soul is not a separate substance), there are evolutionist scientists who believe that humans differ from animals in kind.

¹⁶³ A prominent proponent of dualism, Descartes, stressed that next to the substance of God, the (separate) substances of soul and body are insignificant and they are always dependent on God. Rene Descartes, "Meditations on First Philosophy", Hackett Publishing Co., 1993. The following article discusses this matter from the perspective of the Old and New Testaments: Joel B. Green, "Restoring The Human Person: New Testament Voices For A Wholistic And Social Anthropology", Ed: Robert John Russell et al., Neuroscience and The Person, Vatican Observatory Publications, Vatican, 2002, p. 4-5.

The Theory of Evolution and Two Presuppositions about Creation

When viewed with the perspective of the Quran, the best stance to take on the theory of evolution is theological agnosticism. There is simply no verse in the Quran that requires either the acceptance or rejection of evolution. However, I believe two presuppositions can be utilized in reflecting on God's creation. I use "presupposition" to mean: "perspectives that emerge as a result of contemplation on the Quran and the universe, and that accompany our evaluation of other phenomena". Regarding creation from the perspective of my presuppositions, I have concluded that the theory of evolution is the best explanation of the emergence of species. My presuppositions are not religious requirements, hence they do not contradict my theologically agnostic stance against evolution. Here are the two presuppositions:

1. God creates through laws.
2. God does not refrain from any spending over the marvels of His Art.

In support of the first point—God's creation is ruled by God-created laws: we have observed the dominance of laws in the universe, which suggests that a dominant element in creation is the "rule of laws". Furthermore, human morality and responsibility are possible only in a lawful universe.

If you were to push a person out of a window on the twentieth floor, and did not know of very high probability of death, we would not call your action immoral. If you were to feed the hungry without knowing that feeding the hungry is good for their health, we would not think of the moral goodness in this action. Because of the laws of physics and physiology, we know that falling bodies can be fatally damaged and that food deficiency is bad for health. If falling bodies sporadically flew or if some people could live without food – that is, if there were no natural laws - we would be unable to predict the outcomes of our actions, making it impossible for this world to be an arena of trial where we are responsible for our actions. Two of the most important theses of Islam are that this world is an arena of trial and humans are

morally responsible.¹⁶⁴ But trials are possible only in a lawful universe.¹⁶⁵ As such, in making judgements about nature, I give priority to laws. I hold this presupposition not only about present phenomena, but also for the history of life (unless there is a significant reason not to). My presupposition leads me to expect that the processes of the formation of life and species were guided by laws. When the history of life is regarded from the perspective of this presupposition, even if without scientific evidence, evolutionary formation is preferable to the independent creation of species. In a universe ruled by laws it is more expected for species to develop in stages (e.g. through evolution) than appear instantaneously.

In the second point I stress God's unlimited resources: no matter how many different varieties He creates, nothing decreases His knowledge and power. When an artist has ample resources, he happily spends them on his art; why would God refrain from using His unlimited resources? For example, if the marvel of creation requires the creation of millions of species of living beings, with His unlimited power and resources God will create them; just as he has created quadrillions of stars in the universe and quadrillions of atoms inside our fingertips, such a creation will not lessen anything for Him. According to the picture drawn by modern biology there are millions of different living species, with diverse feeding, hunting, reproduction, migration, adaptation, and socialization behaviors. Even more numerous are the species that once existed on the earth but are now extinct. This magnificent picture coheres with the presupposition that God does not refrain from spending in creation. While this presupposition does favor evolution over its alternatives, it allows us to look at biodiversity from a theological perspective.

In summary, when the history of life is considered with the presupposition "God creates through laws", the theory of evolution is more preferable than its alternatives, giving us reason to prefer evolution over the immediate appearance of beings (even if there were no supporting evidence). When life is observed with the presupposition "God does not refrain from spending in creation", there is nothing unexpected in the magnificent biodiversity that we observe in the world of the living.

¹⁶⁴ Surah al-Mulk, 67:2.

¹⁶⁵ The lawfulness (or not) of miracles - as discussed previously in this book - might be debatable; however, since they are only about exceptional events during very brief periods, these debates do not alter the overall lawfulness of the universe.

Sociobiology and Islam

New disciplines, such as sociobiology, have emerged in the wake of the development of the theory of evolution. Edward Wilson defines sociobiology as follows: "the systematic study of the biological basis of all forms of social behavior, including sexual and parental behavior, in all kinds of organisms, including humans."¹⁶⁶ Scholars working in this field extend insights from the behavior of social animals such as bees and ants to human behaviors in an attempt to explain sociality, culture, ethics and even religion. I will evaluate sociobiology from an Islamic perspective.

According to Wilson, religion is simply the product of the evolution of the brain. Wilson saw this approach as a milestone in the history of biology and assumed that religion would lose its authority when reduced to the outcomes of natural science. According to Wilson, "natural selection" is responsible not only for the evolution of the human brain, but also for the development of human culture including religion. As a result of his approach, Wilson believed that "scientific materialism" should replace religions. According to Stephen Jay Gould, the conclusions of sociobiology about the behavior of life forms are "just-so stories"; sociobiology is simply speculative storytelling unsupported by objective evidence.¹⁶⁷

One might object that since, according to Wilson, all human activities are outcomes of genetic codes, scientific study is as well. Ian Barbour has called attention to Wilson's self-contradiction: while he deems religion worthless, he deems scientific study worthy, despite both being linked to human biology in the precisely the same ways.¹⁶⁸ Wilson, thus, was a priori opposed to religion, so he strained his understanding of sociobiology towards supporting this opinion. But Wilson misses (or ignores) the point that his arguments against religion also hold for science. If religion, a cultural practice which is linked to biological structure, is irrational, why is scientific endeavor, a cultural practice which is linked to biological structure, not likewise irrational? If, as Muslims believe, the biological structure of humans is an outcome of God's beneficent plan, the connection of religion to our biological

¹⁶⁶ Edward O. Wilson, "Sociobiology: The New Synthesis", Belknap Press, 1881.

¹⁶⁷ Stephen Jay Gould, *Sociobiology and The Theory of Natural Selection*, p. 257-269.

¹⁶⁸ Ian G. Barbour, *Religion in an Age of Science*, Harper and Row Publishers, New York, 1991, p. 193.

structures conduces to the rationality of religious belief.¹⁶⁹

Wilson and other sociobiologists likewise assume that when the emergence of moral law from the brain is “proven,” the externality of moral values is disproven (as a result, religion loses its authority). However, according to Islam, since the human body and mind are outcomes of God's plan, there is nothing unexpected or problematic with the moral law being generated from or reliant upon the human brain or associated genes; God, according to this view, creates the human mind and genes compatible with God’s moral rules. Indeed, the Quran mentions that there are arguments “within themselves (humans)”¹⁷⁰ and that religion is “in accordance with the natural disposition”.¹⁷¹ “Arguments within humans” and “religion being in accord with human nature” can be understood as the encoding of fundamental moral and religious principles within the biological structure of humans. According to this, when humans encounter a religion compatible with the principles encoded deeply inside, they will more readily cherish it. According to monotheistic religions, the creator of humans and religions is the same one God. Therefore, the idea of having innate (or encoded in genes) values with a tendency towards morality and religion, is not in conflict with the fundamental tenets of Islam; to the contrary, it is desirable for humans to possess such a tendency in their biological structure.

Even if Wilson had shown that moral rules are tightly related to the human brain and/or the genes that form it, it would not negate the authority of God. For this negation to happen, Wilson would also have to show that the brain was formed accidentally; yet the teachings of sociobiology are neutral with respect to this matter. As discussed in previous pages, evolutionary processes do not imply being accidental (unplanned); after all, they could be created by God. Those who think along the same lines as Wilson ignore this point.

Wilson also draws attention to common aspects in every culture, as depicted by George P. Murdoch, such as property rights, sexual restrictions, visiting habits, games, education, language, marriage and rituals. Wilson claims that their common occurrence indicates that these practices are products of the brain. As a corollary, he claims that had all cultures suddenly disappeared and a small group of people had reappeared (completely independent of the previous peoples and cultures), all of these cultural aspects would have likewise

¹⁶⁹ Caner Taslaman, *Fitrat Delilleri*, p. 15-66.

¹⁷⁰ Surah al-Fussilat, 41:53.

¹⁷¹ Surah ar-Room, 30:30.

reappeared.¹⁷² Wilson's approach gives priority to the human brain and biology over "culture"; it regards "culture" as an inevitable outcome of the current structure of the brain (given similar environmental circumstances). Even if correct, there is no conflict between this approach and fundamental theses of Islam. While Islam refuses to regard the brain and biological structure as an outcome of unplanned processes, the idea that humans share a "common essence" does not pose a difficulty. Indeed, it implies that all people should abide by the same (divine, we believe) rules.

Although I agree that a "common biological essence" feeds the emergence of cultures, I disagree with Wilson that a "common biological essence" mandatorily *determines* people's behavior. We are, I believe, free. Moreover, I reject Wilson's claim that our biological essence supports, for example, sexism, racism and political corruption. On such matters, Wilson has over-estimated both the effects of "common biological essence".

¹⁷² Edward O. Wilson, *On Human Nature*, Harvard University Press, Cambridge, 1978.

Social Darwinism, Evolutionary Ethics and Islam

Herbert Spencer, known for his thoughts on evolution and biology, is most famous for "Social Darwinism": an application of the theory of evolution to society. Social Darwinism, which draws on the evolutionary phenomena observed in nature, holds that the "fittest" or "best individuals," or even entire societies, would prevail. Social Darwinism was used rather mercilessly to justify imperialism and racism and to discourage assisting the poor or the dispossessed or the disabled.

The biological theory of evolution, it should be noted, does not necessitate Social Darwinism in sociology and ethics. The confusion between Social Darwinism and the theory of evolution led many people to hold evolution responsible for Nazism, mercilessness, world wars, etc. Yet since its earliest days, Spencer's approach was criticized by prominent defenders of the theory of evolution (such as Huxley, a close friend of Darwin). Huxley argued that while "the struggle for existence" indeed achieved great things in nature, social achievements rely not on imitating nature but rather resisting it.¹⁷³

According to Spencer, the biological theory of evolution has implications for ethics and politics. While Spencer regards a total imitation of nature as a virtue, Huxley rejects it as a vice. While Karl Marx and Friedrich Engels also accepted the theory of evolution, they rejected Social Darwinism because it opposed their socio-political ideas. Alfred Wallace, co-discoverer of natural selection, rejected Spencer's application of natural selection to sociology in Social Darwinism; he favored a socialist government and government intervention in the market.¹⁷⁴ These people demonstrate that accepting the biological theory of evolution and adopting Social Darwinism are entirely different matters. For this reason, arguments against Social Darwinism give no reason for a Muslim to reject the theory of evolution. Social Darwinism, then, should be evaluated separately from the biological theory of evolution.

Evolutionist thinkers have adopted diverse perspectives on "ethical naturalism," the claim that moral properties (good or ought) are reducible to natural properties (such as needs, preferences, or pleasure). I, along with many other thinkers, contend that the evolution should

¹⁷³ Thomas Henry Huxley, "Evolution and Ethics", Ed: Michael Ruse, Philosophy of Biology, Prentice Hall, New Jersey, 1989, p. 299-300.

¹⁷⁴ Michael Ruse, Can a Darwinian be a Christian?, p. 173.

not be mingled with ethical and social theories. I base my claim on David Hume's argument that one can never derive an "ought" statement from an "is" statement.¹⁷⁵ That is, one can never derive an ethical truth from an empirical fact. The attempt of ethical naturalism to produce "good" from "is" commits what its opponents call the "naturalistic fallacy".¹⁷⁶ It is philosophically problematic to infer anything in the domain of ethics from purely natural scientific research.

Moral inferences based on the theory of evolution have had dire consequences. The most striking example was Hitler's justification, guided by the evolutionist Haeckel, of the racial superiority of the Aryan race (the fit) and the destruction of non-Aryans, Jews, gypsies and the disabled (the weak). Haeckel claimed that races such as Australian indigenous people are closer to monkeys and dogs than to civilized Europeans. In addition, he taught that Darwin's ideas on artificial selection could be applied to humans and praised the ancient Spartans for killing weak and sickly children. Wilhelm Boelsche introduced Haeckel's ideas to Hitler and it would not be an exaggeration to claim that these ideas were at least partially responsible for the murder of over 200.000 mentally-handicapped citizens by Nazis.¹⁷⁷ The following quote from Hitler is a remarkable example:

*"If we do not respect the law of nature, imposing our will by the might of the stronger, a day will come when the wild animals will again devour us—when the insects will eat the wild animals, and finally nothing will exist except the microbes. By means of the struggle the elites are continually renewed. The law of selection justifies this incessant struggle by allowing the survival of the fittest. Christianity is a rebellion against natural law, a protest against nature."*¹⁷⁸

Hitler, the person responsible for the bloodiest war in history and chief architect of Nazi eugenics, received inspiration from the Darwinian theory of evolution. This terrible example is sober warning for building ethical systems on the theory of evolution. As such many believers of the theory of evolution oppose the derivation of ethics from evolution.

In conclusion, the naturalistic fallacy forbids the derivation of ethics from evolution. Attempts

¹⁷⁵ David Hume, *A Treatise of Human Nature*, Oxford University Press, Oxford, 1978, p. 87.

¹⁷⁶ These opponents also claim that nature does not contain scientifically-discoverable moral laws. Marc Kirsch, Ed: Jean-Pierre Changeux, *Etiğin Doğal Temelleri*, Doruk Yayınları, 2002, p. 23. Jerome H. Barkow, Ed: Jean Pierre Changeux "Davranış Kuralları ve Evrimin Davranışı", *Etiğin Doğal Temelleri*, Ankara, 2002, p. 79-91.

¹⁷⁷ Benjamin Wiker, *Moral Darwinism*, Intervarsity Press, Illinois, 2002, p. 260-263.

¹⁷⁸ Antony Flew, *Darwinian Evolution*, Transaction Publishers, New Brunswick, 1996, p. 124-125.

at such derivations have been rejected by most thinkers, including prominent evolutionists. Since there is no legitimate connection between, say, racism or Nazism and evolutionary theory, the rejection of the former does not entail the rejection of the latter. Hence, there is no reason to oppose the theory of evolution in the name of Islam, based on Socialist Darwinist or normative ethical ideas.¹⁷⁹

¹⁷⁹ The actual significance of the theory of evolution, regarding ethical systems, is the exploitation of this theory by atheist-evolutionists with the purpose of demolishing theist ontologies. In other words, rather than the ethical systems attempted to be built on evolution, more attention should be paid to attempts to reject the existence of God, and thereby destroy ethical ideas in monotheistic religions. However, as shown in the previous pages, the belief that the theory of evolution poses a threat to belief in God or Islam stems from misrepresentation of this theory and false approaches towards the theory in the name of Islam (or other religions).

Does the Theory of Evolution Pose a Threat to Arguments for the Existence of God?

My primary objective has been to show that there is no problem for a Muslim to believe in the theory of evolution. One may, in addition, ask whether evolution poses a threat to arguments for the existence of God. In this last chapter, I will briefly answer this question based on ten arguments. I will not go into details about the arguments themselves.¹⁸⁰ Suffice it to say that the theory of evolution does not pose any threat to these arguments, whether or not they are accepted as true.

1. **Cosmological Arguments:** In addition to Avicenna's and Leibniz's cosmological arguments, there is also "the Kalam cosmological argument." Cosmological arguments hold that the world requires a supernatural explanation, and that the best explanation is provided by an eternal, absolute, powerful God. Since the existence of the universe is prior to evolution, it is absurd to claim that evolution poses a threat to these arguments.

2. **Ontological Arguments:** Thinkers, including Anselm, Descartes, Gödel, Malcolm and Plantinga, have formulated their own versions of the ontological argument. In these formulations, the concept of God is the starting point; the contradictions that would arise when God's existence is rejected are regarded as arguments for His existence. While many people claim that this argument is fallacious, evolution is totally immaterial to its purely logical machinations; thus, the theory of evolution has no bearing on ontological arguments.

3. **Argument from the Existence of Laws:** This type of argument holds that the laws in the universe are best explained in terms of creation by a rational, conscious, willful, all-knowing God. The laws of nature were in place even before the evolution of life forms began, and evolution can only happen in a universe governed by laws. The existence of evolution is dependent on the existence of laws, not vice versa. Hence, evolution is no threat to this argument.

4. **Argument from the Discoverability of the Universe:** This argument notes humanity's astonishing discoveries about the universe (from its beginning - Big Bang - to the Higgs

¹⁸⁰ These arguments (except for the "Ontological Arguments") are presented in detail in my book entitled "Twelve Arguments for the Existence of God".

particle, from atoms to DNA) despite their immense weakness. These discoveries, given human weaknesses, are best explained by God's creation of the universe with a discoverable structure and God's creation of humans with the capacities to grasp that structure. This argument does not require the rejection of evolution and evolution poses no threat to it.

5. Argument from the Potentiality of the Universe: An entity can only bear things allowed by its potentiality. Had the universe lacked the requisite potentialities, neither atoms, nor stars, nor living beings would have emerged. This argument holds that such a potentiality is best explained as God-given, for which materialist-atheist philosophy provides no explanation. The potentiality of the universe to support life is an important part of this argument. Had the universe lacked the potentiality to form atoms via fundamental forces, form molecules from atoms and living organisms from molecules, the emergence of life in all its aspects would have been impossible. Such an argument does not conflict with evolution.

6. Arguments from Fine Tunings: 20th century physics has taught us that the emergence of life and humans was critically dependent on extremely finely tuned laws, physical constants and phenomena in the universe. As opposed to other arguments, the fine tunings are presented mathematically in terms of probability calculations. Fine tuning arguments claim that multiple observations of probabilities—one part in numbers with hundreds of digits—cannot be coincidental. Since the evolution of living beings depends on fine tunings, and not vice versa, the evolution of life cannot pose a threat to this argument.

7. Argument from Natural Desires: The idea that there is an inherent tendency in humans towards God has been pointed out by many thinkers, including Freud, who was an atheist. In this argument, this tendency is explained in terms of its conscious and intentional placement by God. For those who support this argument, the formation of the human body and natural desires through evolution need not cause discomfort. Even if the natural desires pointing to God are formed via evolution, there still remains the question "Why do the natural desires formed by evolution direct humans to God?" An evolutionist theist could accept that the best answer to this question is God's intentional planning of such an evolutionary process.

8. Arguments from Moral Law: Most moral arguments hold that the existence of moral laws is best explained by the existence of God. The theory of evolution may explain how the structure of the brain allows the emergence of moral beliefs. Even if moral beliefs emerged via evolution, the question "Why does Moral Law have a rational basis only with the existence of God?" would remain intact. In fact, many contemporary philosophers who

support this argument also accept the theory of evolution and they formulate their approach in coherence with this theory.¹⁸¹

9. Argument from Reason: The aspect of reasoning requires the ability to use the concepts of right and wrong, logic, and free will. This argument involves claims that the possession of such abilities by humans is best explained by the existence of an eternal entity, God, who has reason and will aspects. Even though the theory of evolution explains the biological structure of humans, this argument claims that reasoning cannot be explained in terms of mechanical laws of physics and biology, and that these aspects are fundamentally different from such laws. Therefore, acceptance of evolution does not conflict with this argument. None of the claims of this argument involves a rejection of evolution. In addition, Alvin Plantinga has developed a version of this argument to show that one who believes in evolution cannot consistently be a materialist-atheist. According to Plantinga, materialist-atheist defenders of evolution argue that natural selection favors only survival and reproduction. Hence, materialist-atheist natural selection cannot reliably explain the ability to discern right and wrong. Therefore, an evolutionist materialist-atheist cannot trust in the truths of outputs of his reasoning.¹⁸² Consequently, he/she cannot claim the truths of atheism and evolution. To the contrary, a Muslim (or a theist) regards evolution as more than a theory that generates living and reproducing organisms on the earth; hence, the emergence of species with the ability to find truths by reasoning is a result of God's planning. According to this argument, while evolution does not conflict with theism, it does conflict with materialist-atheism. In brief, evolution is not a threat to arguments from reason, while in Plantinga's approach it is to materialist-atheism.

10. Argument from Consciousness and Self: Consciousness and self constitute the most fundamental aspects that define us. Properties of consciousness and self, such as "aboutness" and "subjectivity," are radically different from the physical and biological properties of the universe and living beings. Supporters of this argument contend that the emergence of consciousness and self is best explained in terms of their placement in humans by God, who has possessed the properties of consciousness and self for eternity.¹⁸³ Contemporary

¹⁸¹ See, for example: Robert Adams, "Moral Arguments for Theistic Belief", Ed: C. Delaney, *Rationality and Religious Belief*, University of Notre Dame Press, Notre Dame, 1979.

¹⁸² Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism*, Oxford University Press, Oxford, 2011, Part 4, Chapter 10.

¹⁸³ An argument that stands on properties irreducible to biological structures cannot be opposed based on the biological theory of evolution. It should be noticed that irreducibility to biological structures is quite different from non-existence of these properties without biological structures.

advocates of this argument often state that they feel no discomfort about believing in evolution.¹⁸⁴ Again, evolution poses no threat here.

The arguments we have considered above shows that whether or not they are accepted, the theory of evolution poses no threat to theistic arguments. Some Muslims think that belief in God is permissible without an argument; they would not have much interest in this discussion. However, for those Muslims who affirm the significance of arguments for the rationality of belief in God, this discussion shows that evolution poses no threat to these arguments.

¹⁸⁴ Caner Taslaman, *Twelve Arguments for the Existence of God*, Ch. 12.

Conclusion

The theory of evolution is the most controversial subject of science-religion relationships. In this book, I distinguished the question "Can a Muslim be an evolutionist?" from the debate about the correctness of the theory. I focused on the former.

I have tried to demonstrate why there is no problem for a Muslim to accept evolution. I individually discussed every issue that has been brought up as a potential source of conflict between evolution and Islam. In so doing, I never relied on strained interpretations of Quranic verses. Indeed, when the clearest and most mainstream interpretations of Quranic verses are considered, no statement in the Quran contradicts the theory of evolution. Therefore, a Muslim can believe in evolution. I never, however, claimed that a Muslim *must* accept evolution. Just as the Quran contains no verse that conflicts with the theory, no verse in the Quran obligates believing in the theory, either.

With respect to evolution and related topics, I have defended theological agnosticism which holds that since the acceptance or rejection of evolution is not determined from an Islamic perspective, the most appropriate religious position is to be agnostic (unknowable) about this theory. However, since our beliefs should also be shaped by science, philosophy and intuitions, our overall judgement about the theory should be based on these. So, although I am theological agnostic about evolution, when bring in the other three means, I am convinced that the theory of evolution is the most successful explanation among its alternatives.

Both the theist and the atheist, then, abuse the theory when, for example, the theist claims that believing in evolution makes one an atheist or the atheist claims that evolution proves atheism. Both types of statements, rebutted in this book, thwart an open-minded evaluation and discussion of both science and religion. A Muslim, for example, should not give up loving Jesus because of those who divinize him. Likewise, a Muslim should not reject this theory, due to either the atheists' or some religious scholars' misunderstanding and misappropriation of that theory.

Since the theory of evolution is not in conflict with Islam, Muslim thinkers can relax and approach the topic with open-mindedness, scrutinizing evolution in the light of scientific findings and philosophical evaluations, and thereby arrive at their own conclusions about evolution.

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