The Theory of Biological Evolution and Islam
by Zameelur Rahman

Recently, there has been a lot of talk in the Muslim community about the theory of evolution. The topic is no doubt very sensitive, as it deals with the origin of diverse forms of life, including human beings, and since Islam does have something to say about certain aspects of these issues, it touches on some important theological questions. Unfortunately, the issue has been dealt with quite irresponsibly by a number of individuals who have spoken on evolutionary theory and the Islamic view on the matter. This is primarily due to a lack of knowledge of evolutionary theory, Islamic theology, or both.

At the outset, it should be noted that although many people, particularly laypeople, have the misconception that if a certain individual is a “scientist” or a “biologist” he has full knowledge of the scientific details of evolutionary theory, this is not necessarily the case. There are many experts on different fields of biology, from pathology to biochemistry to embryology to genetics, who have only a cursory knowledge of the evidences for the biological theory of evolution. It is certainly true that most of those who work in these fields do so with the assumption that the prevailing evolutionary paradigm is true, but in terms of the actual evidences that prove the theory itself, most biologists have very little knowledge, and are more or less laymen, unless they pursue the subject academically or by self-study. Thus, an appeal to scientific authority in this field is not all that helpful; especially when it is considered that there is growing scientific opposition to the theory, as will be discussed below.

I hope that the following discussion tackling the topic of evolutionary theory and Islam’s view on the matter will go some way in directing the discussion towards a more fruitful outcome. It is with the blessing of Allah, that I have a background in both biology (with a B.A. in medical sciences from the University of Cambridge) and Islamic studies (having completed hifz and almost completed the Alim-programme at a Dar al-’Ulum in the UK). I have also had an interest in evolutionary theory for some years, so have read around the subject from leading experts in the field. It is therefore hoped I can introduce the Muslim community to a more up-to-date, evidenced and careful presentation of the scientific theory of evolution, and what Islam has to say on it. I should say right away, however, that due to time constraints and the need to keep the explanation brief and digestible, some of the issues are not examined at the level of detail I would have liked to. Nonetheless, I hope this will be remedied somewhat by the “recommended reading” list at the end, which I feel deal with all these issues adequately, and provide extensive references to the scientific literature.

The Meanings of “Evolution”

Like many words in the English language (and indeed, all languages), evolution in biology can and is used for a number of different meanings. It is important to appreciate these different usages, for reasons I will explain below. There are four primary usages of the word “evolution”:

One meaning of evolution is merely “change over time.” The University of Berkeley evolution webpage introduces the theory as follows: “At the heart of evolutionary theory is the basic idea that life has existed for billions of years and has changed over time.” (http://evolution.berkeley.edu/evolibrary/article/life_01) Evolution in this sense simply
states that organisms that live today are different from the organisms that lived in the recent past, which are different from the organisms that lived in the distant past. This is uncontroversial and is more-or-less a fact. It is borne out by the clear pattern of fossilised creatures: older rocks preserve different and, in general, more primitive organisms than do more recent rocks.

There is negligible controversy regarding the time-scale over which the “change” occurred. According to standard dating techniques, life first originated about three and a half billion (3,500,000,000) years ago, and then about a billion years later eukaryotic cells (cells with a nucleus) appeared, and then about one billion years ago multi-cellular grade algae appeared; then about half a billion years later in what is known as the Precambrian, the first complex multi-cellular organisms appeared, including sponges; and then in a significant period of less than 10 million years, most major animal phyla (animals with vastly different body plans) appeared, in what is known as the Cambrian explosion; and so on. There is good evidence for this time-scale, and is hardly contested in the scientific community. Some religious people, particularly from a Christian background, argue on religious grounds that the world is much younger, and began only a few thousand years ago. They are known as “young-earth creationists.” There is very little evidence for a young-earth, and the evidence points strongly in the direction of an “old-earth” (i.e. one that is billions of years old). In short, this first meaning of evolution, that life began a few billion years ago and changed over time, is fairly uncontroversial.

A second meaning of evolution is the small-scale changes that we observe in different organisms. For example, elephants may be observed to have larger tusks on average over time. Or bacteria may gain resistance to antibiotics over time. Or the average size of finches’ beaks may be seen to change over time. These small-scale changes, which can be observed even in us, human beings, result from a change in the proportion of different variants of a gene within a population (a gene is a length DNA molecule that codes for a protein in the cell. These proteins determine the external features of organisms or their “phenotypes”). Sometimes, they are due to the spread of a specific mutation (a change in a gene) which gives the organism a survival advantage (as in bacterial resistance). This meaning of evolution is also uncontroversial. No sensible person can deny that such small-scale “evolution” does indeed happen. Evolution in this sense also implies “common ancestry” within a species, meaning that members of the same species descend with slight modifications from a common ancestor.

A third meaning of evolution is that all organisms, from bacteria, to molluscs, to insects, to plants, to mammals, are all related to each other by common ancestry. That is, if you trace the ancestry of every living being on this planet, they will all meet with each other at different points along the pedigree. This theory is known as “universal common descent,” and is also one of the popular meanings of “evolution.” Clearly, this is not something that has been observed; instead biologists draw on a number of lines of evidence to prove that this is the case. I will present a short critique of the evidences used for this theory below.

A fourth meaning of evolution is the undirected and unguided mechanism proposed by Charles Darwin that is said to produce the changes in existing species to create new ones. This is known as “Darwinian evolution.” It basically states that there are variations in existing life forms, and
those organisms whose chance variation gives them a survival advantage over other organisms in the population will reproduce at a higher rate than other members of that population (i.e. they will be “selected” by nature), and thus it is their features that will be exclusively passed on to the next generation; over time, the theory states, changes accumulate and produce novel species and life forms. The modern version of the theory, known as neo-Darwinism, combines Darwin’s theory with genetics.

To understand neo-Darwinism and some of the evidences for universal common descent that will be discussed below, it is important to know something about genetics and the DNA molecule. The discovery of the DNA molecule and how it operates in the cell is a remarkable discovery, and probably the most important finding in biology over the last hundred years. It is now known that there are information-coding chemicals stored in the cell called DNA that are “translated” into proteins which are the workers of the cell. Proteins are extremely diverse molecules, so it is proteins that are responsible for carrying oxygen in the blood, proteins that give your skin its hard texture, proteins which speed up chemical reactions in the body. A length of DNA that codes for a protein is called a “gene.” The DNA molecule is a polymer made up of four different nucleotides, called A, C, T and G in short. Each three-letter sequence in a DNA molecule codes for one amino-acid in the protein molecule (proteins are made up of amino acids, and the specific amino-acid sequence determines the behaviour, shape and function of the protein molecule). Sometimes changes can occur in the DNA molecule when it replicates. For example, an A is changed to a G (called “substitution”) or one nucleotide is lost in the replication process (called “deletion”). These are known as “mutations.” In neo-Darwinian theory, mutations are what produce the changes or chance variations in different organisms, and “natural selection” is responsible for preserving those changes that are beneficial; and by this process, the theory claims, eventually new life forms arise. Thus, the three most important ingredients of neo-Darwinian theory are: random mutations (which supply the changes or variations), natural selection (which select the beneficial variations) and universal common descent (that all organisms are related to each other by ancestry).

The reason why it is important that I spent so much time on defining these four different meanings of “evolution” is that often in discussions on the topic, a lot of “equivocation” goes on, even by the experts. Thus, one meaning will be proven and argued for, and another meaning will be claimed to have been proven. Proof for “change over time” is not proof for “Darwinian evolution” or “universal common ancestry.” Just because one of the meanings of evolution is proven and uncontroversial, it does not mean the other meanings are proven. This is something that must be kept in mind in these debates, and making these distinctions is extremely important when it comes to assessing the validity of specific claims.

Often when defenders of Darwin’s theory tout “evolution is a fact” and claim its evidences are “overwhelming” do so by using evidence for small-scale changes and change over time to prove universal common descent and Darwinian evolution. However, even as far back as 1937, noted neo-Darwinist Theodosius Dobzhansky knew that there was no hard evidence to connect the observed small-scale changes within existing species (which he called “micro-evolution”) to the large-scale changes we observe in the fossil record (which he called “macro-evolution”). Instead he said: “We are compelled at the present level of knowledge reluctantly to put a sign of equality between the mechanisms of macro- and micro-evolution.” (Theodosius Dobzhansky, Genetics
Thus, evidence for “micro-evolution” (the second meaning of evolution) is not evidence for “macro-evolution” (the third and fourth meanings of evolution).

Since, only the third and fourth meanings of evolution are controversial, I will critically examine the scientific merits of each of them before I move on to discuss the subject from an Islamic perspective. What I hope will become clear is that although proponents of the theory of universal common descent use a large number of facts that indirectly support the theory, there are a number of problems with the use of these evidences, and in fact for some of these lines of evidence, an impartial conclusion from them would be the total opposite of what the theory suggests. Although, admittedly, there is some evidence for universal common descent (the third meaning of evolution described above) that can justify why many scientists find it reasonable, when it comes to the Darwinian mechanism (the fourth meaning of evolution described above), there is scant evidence that it can produce anything near what it is set up to explain.

Universal Common Descent

There are a number of evidences used to prove universal common descent, which will be summarised and critiqued below:

Firstly, the evidence from fossils and fossil succession. Proponents of universal common descent claim that the pattern of fossils preserved in different rock layers (which signify different time periods) prove that all species are modified descendents of a common ancestor. They claim that this is so because there appears to be a progression of simple to complex, and thus this is proof that later organisms descended from earlier ones.

The fossils certainly prove that earth was once populated by extinct creatures, and it also proves that the history of life has passed through several stages. However, there are two problems with using fossils as evidence of universal common descent.

Firstly, palaeontologists have discovered that new animal forms almost always appear suddenly in the fossil record without any connections to the animals that came before, and then remain static (i.e. the same without any change) for long periods of time. This is the prevailing pattern of the fossil record. For example, about 530 million years ago, in a window of about 10 million years, most of the animal groups (phyla) appear suddenly in the fossil record. This is known as the Cambrian explosion. 10 million years is a very small period of time in earth’s history. There are many other examples of sudden appearances in the fossil record, with no indication of gradual emergence; instead the organism appears fully-formed and stays the same for a long period of time without changing. “Abrupt appearance” also characterises hominid fossils. There is a sudden appearance of human-like fossils about two million years (homo erectus, homo neanderthalensis, homo sapiens) without any clear transitions (see Science and Human Origins, Casey Luskin, Chapter 3 for full documentation).

Secondly, fossil evidence turns the picture of how evolution supposedly happened on its head. Darwin envisaged that after the first cell arose, its lineage split in two, forming two separate species, and as more and more species branched out from those lineages, higher orders of classification like “genera,” “orders,” “classes” and “phyla” appeared gradually (this is known
as the “tree of life”). Instead what we find is that phyla appear first and then classes, orders, genera and species belonging to those phyla. Erwin D.H. and his colleagues state: “The fossil record suggests that the major pulse of diversification of phyla occurs before that of classes, classes before that of orders, orders before that of families. The higher taxa do not seem to have emerged through an accumulation of lower taxa.” (A comparative study of diversification events: the early Paleozoic versus the Mesozoic, Erwin DH et. al., Evolution 41:1177 - 1186). This turns Darwin’s account on its head, as it suggests a top-down pattern of biological change, which is consistent with purposeful architectural design, and not with undirected Darwinian gradualism.

One way proponents of universal common descent have attempted to overcome the Cambrian explosion and other sudden appearances in the fossil record is to say the fossil record is incomplete, that there are intermediate species that were simply not fossilised. This was Darwin’s own explanation. The first thing to say about this is, if the fossil record is incomplete, it cannot be produced as evidence of universal common descent, as the theory is simply assumed and not proven by the data. On the point of its incompleteness, Darwin’s most vocal defender today, Richard Dawkins, explains the Cambrian explosion by saying it is not a real gap, but due to the incompleteness of the fossil record. In explaining why the intermediates for the Cambrian phyla were not fossilised, Dawkins said in 1986: “One good reason might be that many of these [Precambrian] animals had only soft parts to their bodies: no shells or bodies to fossilise.” (The Blind Watchmaker, p. 230) However, in 1994, paleobiologist William Schopf, said, after the discovery of many soft-bodied fossils: “The long-held notion that Precambrian organisms must have been too small or too delicate to have been preserved in geological materials...[is] now recognised as incorrect.” (J. William Schopf, “The early evolution of life: solution to Darwin’s dilemma,” Trends in Ecology and Evolution 9: 375-77) James W. Valentine, a leading expert on palaeontology and Cambrian fossils, and his colleagues say the Cambrian explosion “is real; it is too big to be masked by flaws in the fossil record”; indeed as more fossils are discovered the Cambrian explosion is revealed to be “even more abrupt and extensive than previously envisioned.” (James W. Valentine, et. al. Evolutionary Biology 1991) Remarkably, Dawkins himself said, if the explosion is real, and not simply due to the incompleteness of the fossil data (known as the “artefact theory”), the only alternative explanation is divine creation! “The only alternative explanation [to the artefact theory] of the sudden appearance of so many complex animal types in the Cambrian era is divine creation.” (The Blind Watchmaker, 230) The evidence, based on recent findings, should therefore prove against universal common descent and for “divine creation” according to Dawkins’ own admission.

In short, the fossil record does not help Darwin’s cause, and Darwin himself knew that fossils were a “serious” problem to his theory. Often, however, proponents of the theory of universal common descent get overexcited by a few examples of so-called transitional fossils. When such examples are presented, the first thing that needs to be remembered is that the prevailing pattern of the fossil record proves against the theory of universal common descent, as it is mostly represented by sudden appearances followed by long periods of stasis; if the theory of universal common descent was true, “the number of intermediate and transitional links” would have been “inconceivably great” as Darwin himself said. As for the particular examples of transitional fossils, like the reptile-to-mammal transitions, or land mammal-to-whale transitions, it invariably turns out that there are a number of problems with using those so-called
transitional fossils as true intermediate forms. For example, the fossil of the extinct Archaopteryx was thought to provide an example of a transition between dinosaurs and birds (it is believed birds descended from dinosaurs) as it had both reptilian and bird-like features. Apart from the large number of anatomical and morphological problems in a dinosaur transition to bird (which are discussed in the literature), purely from the perspective of the fossil evidence itself, Archaopteryx does not provide us a real transitional form. The reason is that birds existed long before Archaopteryx, thus it comes far too late in the record to be a true ancestor of birds (see: http://www.nature.com/news/2011/110727/full/news.2011.443.html). There are many examples like this where so-called examples of transitional forms do not fit the time-scale or have many features that exclude them from being true transitions, but propagandists of universal common descent often brush aside important details such as these in their zeal to promote these fossil discoveries.

In brief, the fossil record does not provide evidence of universal common descent – and in fact an unbiased examination reveals the exact opposite.

A second line of evidence for universal common descent is molecular evidence. Biologists compare molecules, for example DNA and proteins, from different living organisms and infer relationships. The more similar a particular protein, say haemoglobin, is to its counterpart in another organism, the closer the relationship that is inferred. The first thing to be noted about this “evidence” is that it assumes common descent to begin with, and then infers relationships based on that assumption. Secondly, depending on the molecules, the analyses can yield different evolutionary trees, so again this offers strong evidence against universal common descent. In fact, the molecular evidence is plagued with so much inconsistency that some evolutionary biologists reject the hypothesis of a universal common ancestor (W. Ford Doolittle, “The practice of classification and the theory of evolution, and what the demise of Charles Darwin’s tree of life hypothesis means for them,” Philosophical Transactions of the Royal Society of London B 364 (2009): 2221-2228; Carl R. Woese and Nigel Godenfeld, “How the Microbial World Saved Evolution from the Scylla of Molecular Biology and Charybdis of the Modern Synthesis,” Microbiology and Molecular Biology Reviews 73 (2009): 14-21) Woese wrote in 1998: “No consistent organismal phylogeny has emerged from the many individual protein phylogenies so far produced.” In short, molecular evidence does not provide support for universal ancestry unless it is assumed from the outset.

A third line of evidence for universal common descent is anatomical similarity and genetic similarity. Briefly, the bone structures of many different species resemble each other, so it is claimed that this must be the result of common ancestry. These similar features that are thought to come about by common ancestry are referred to as “homologous structures.” However, if it was true that homologous structures are the result of common ancestry, it would be expected that two organisms which share homologous features code for those features with similar genes and follow similar developmental pathways (embryological processes) in the formation of those structures. But it is found that often these supposedly “homologous” features in different organisms follow different developmental pathways and are coded for by different genes, which is inconsistent with the idea of their common ancestry. (David P. Mindell and Axel Meyer, “Homology evolving,” Trends in Ecology and Evolution 16 (2001):343-440); Claus Nielson and Pedro Martinez, “Patterns of gene expression: homology or homocracy?” Development, Genes,
With respect to genetic similarity, this is also turned on its head by the fact that two organisms that by consensus followed different lineages share genes with very similar DNA sequences (that could not have existed in their common ancestor). Many examples of this have been observed. This is known as “convergent molecular evolution” or “convergent genetic evolution.” (see for examples, http://www.sciencedaily.com/releases/2012/10/121025130922.htm, Pascal-Antoine Christin, et. al., Causes and evolutionary significance of genetic convergence, Trends in Genetics Vol. 26 (9):400-405 (2010)) This is a huge sticking point for the idea of proving common descent from genetic similarity, as if genetic similarity is not always due to common ancestry, genetic similarity cannot be proof of common ancestry (and the same is the case for anatomical similarity).

Furthermore, the fact of convergent molecular evolution is far more consistent with the idea of deliberate design, as the possibility of similar genes arising randomly by an undirected process is vanishingly small, but using similar templates for building specific features in different structures is exactly what would be expected of an intelligent agent.

Something that is commonly used to propagate the idea of universal common descent is the extent of genetic similarity. For example, it is often claimed humans and chimps are 98% similar, in that their genes are 98% the same. However, this is untrue. The 98% similarity refers to the “coding regions” of DNA; that is, those parts of the DNA that code for proteins. However, coding regions make up only 1.5% of the entire genome! The similarity is therefore very small. The reason why only the coding regions are compared in this oft-mentioned statistic is because it used to be thought that non-coding regions are useless “junk” (and this idea is also often used as evidence of common descent, as it is claimed it is evidence of historical baggage left behind by the unguided process of evolution). However, over the last ten years or so it has been shown that the genome, coding or non-coding, is pervasively functional. Although parts of DNA may not code for a protein, it does not mean they are non-functional. DNA is now known to have many other functions besides coding for proteins (see Jonathan Wells’ excellent The Myth of Junk DNA for full documentation). There is very little similarity in the non-coding regions of chimps and humans (see, for example: http://www.geneticarchaeology.com/Research/Rapid_Evolution_Of_Non-Coding_DNA_Since_The_Split_Between_Human_And_Chimp_Genome.asp). Hence, there is in fact a staggering difference in the genomes of the two. There are many other problems with using genetic and molecular similarity as evidence for universal common descent, but this much should suffice.

A forth line of evidence comes from embryology, which Darwin thought was the best evidence for his tree of life. He believed that vertebrate embryos are most similar in their earliest stages and become dissimilar as they develop, and that early embryos resemble the common ancestor of the group. Ernst Haeckel (d. 1919), a zealous supporter of Darwin, forged some drawings to try to prove Darwin’s theory, and although these drawings persisted in biology textbooks right till the end of the twentieth century, the drawings are a known fake. In fact, in the earliest stages, vertebrate embryos look very different to each other. (Jonathan Wells, Haeckel’s Embryos & Evolution: Setting the Record Straight, American Biology Teacher 61 (May, 1999): 345-9).
(As a side note, Darwinian evolution has been propped-up and promoted since its very beginning by a number of outright forgeries or egregious mistakes like Haeckel’s drawings; examples include the Piltdown man, the Nebraska man and Kettlewell’s peppered moths. This tells us two things: first, the paucity of real evidence; second, the dogmatic adherence to this theory by a large section of the scientific establishment, which clearly suggests non-scientific motives.)

In 1997, Michael Richardson and his colleagues published a paper in *The Journal of Anatomy and Embryology* with the title “There is no highly conserved embryonic stage in the vertebrates: implications for current theories of evolution and development” (http://www.mk-richardson.com/pdf/Anat%20Embryol.pdf) which undermines any version of this argument for support of the theory of universal common descent.

These are the main lines of evidence used for universal common descent, which you will find in most books promoting evolution in the sense of universal common descent and the Darwinian mechanism, like Jerry Coyne’s *Why Evolution is True* and Richard Dawkins’ *The Greatest Show on Earth*. It is clear that the evidence is not “overwhelming” as is often claimed, but in fact very sketchy, and much of the evidence, particularly embryological, molecular and fossil evidences, turn the theory of common ancestry on its head. Thus, there is no hard evidence for this theory.

It may be reasonably asked, if common descent is not true, what then can explain the clear similarities that do indeed exist between different organisms? Biologists before Darwin’s time, prominent amongst them Louis Agassiz (d. 1873), knew about the existence of similar or “homologous” structures, but they rejected common ancestry as the explanation for these similarities. Agassiz explained homologies as the result of the necessity of using similar structures to solve similar functional problems. Similarities are therefore the consequence of functional constraints. This can be described as the “common archetype” or “common design” view. It will be useful to quote a short passage from Agassiz here (which was written before Darwin’s *On the Origin of Species*): “It is evident that there is a manifest progress in the succession of beings on the surface of the earth. This progress consists in an increasing similarity to the living fauna, and among the vertebrates, especially, in their increasing resemblance to man. But this connection is not the consequence of a direct lineage between the faunas of different ages. There is nothing like parental descent connecting them. The fishes of the Palaeozoic age are in no respect the ancestors of the reptiles of the Secondary age, nor does man descend from the mammals which preceded him in the Tertiary age. The link by which they are connected is of a higher and immaterial nature; and their connection is to be sought in the view of the Creator Himself…” (*Principles of Zoology*, Louis Agassiz, 1857)

**Darwin’s Mechanism of Evolution**

It has been shown that the evidence for universal common descent is circumstantial, cloudy, and problematic on many levels. As for Darwin’s proposed mechanism for descent with modification, that is random mutation working in tandem with natural selection, although it is a real process in nature, the evidence for its efficacy in producing the major innovations throughout life’s history is far, far worse than the evidence that is available for universal common descent. Because direct evidence for its efficacy is wanting, I will not spend much time in this section but will briefly outline the major problem with the Darwinian mechanism as an
explanation for the complexity of living beings, and refer the reader to two devastating critiques of the theory.

The neo-Darwinian mechanism of natural selection acting on random mutations has been observed to produce very little. In fact, the observed examples of this process working in nature are almost always examples of degradative changes in the cell (changes that break down existing structures and elegant machinery); as sometimes even destructive changes can be “beneficial” as quick-fxes. It should be noted that the cell consists of amazingly intricate protein machines that are structured, and interact with each other, in very specific ways to accomplish the tasks of the cell. This level of intricacy is one of the most amazing discoveries of the last 60 or so years. Bruce Alberts, former president of the National Academy of Sciences, remarked: “We can walk and we can talk because the chemistry that makes life possible is much more elaborate and sophisticated than anything we students had ever considered...Instead of a cell dominated by randomly colliding individual protein molecules, we now know that nearly every major process in a cell is carried out by assemblies of 10 or more protein molecules. And, as it carries out its biological functions, each of these protein assemblies interacts with several other large complexes of proteins. Indeed, the entire cell can be viewed as a factory that contains an elaborate network of interlocking assembly lines, each of which is composed of a set of large protein machines.” (Alberts, B. 1998. The Cell as a collection of protein machines: preparing the next generation of molecular biologists. Cell 92:291-94)

In terms of what the Darwinian mechanism is supposed to have accomplished, and what it has been observed to do (that is, a few incoherent changes at a very slow rate), it is absolutely clear it cannot produce anything like what is in the cell. Michael Behe1 in a wonderfully written work on this subject concludes: “There is no evidence that Darwinian processes can take the multiple, coherent steps needed to build new molecular machinery, the kind of machinery that fills the cell.” (The Edge of Evolution, 162-3; emphasis in original) One example he discussed is the HIV virus, which because of its highly sped up mutation rate and large population, underwent the same number of mutations that would have been expected to have occurred throughout the whole of life’s history! Yet, in terms of changes at the molecular level, it has undergone very little. Let alone turning into a multicellular organism or something more sophisticated, its basic internal workings still remain essentially the same. The few examples of Darwinian changes that are not degradative are extremely basic and can no way be envisioned to be part of a process making complex machinery.

The two works I refer the reader to for more detail on the extreme limitations of Darwinian processes are: Michael Behe’s 2007 book The Edge of Evolution and Douglas Axe’s2 short chapter in the 2012 book Science and Human Origins called “Darwin’s Little Engine that Couldn’t.”

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1 Michael Behe is a professor of Biological Sciences at Lehigh University where he has worked since 1985. He received his PhD in biochemistry from the University of Pennsylvania in 1978. From 1978 to 1982 he did post-doctoral work on DNA structure at the National Institutes of Health. He has authored more than forty technical papers.

2 Douglas Axe received a PhD from Caltech and went on to do post-doctoral work on protein structure at the University of Cambridge, the Cambridge Medical Research Council Centre, and the Babraham Institute in Cambridge. He is now director of Biologic Institute in America.
The Species Problem

Darwin claimed his theory explains how new species originate. There have been no examples of the formation of species by a Darwinian mechanism. Bacteriologist Alan H. Linton said in 2001: “None exists in the literature claiming that one species has been shown to evolve into another. Bacteria, the simplest form of independent life, are ideal for this kind of study, with generation times of twenty or thirty minutes, and populations achieved after eighteen hours. But throughout 150 years of the science of bacteriology, there is no evidence that one species of bacteria changed into another...Since there is no evidence for species changes between the simplest forms of unicellular life, it is not surprising that there is no evidence for evolution from prokaryotic to eukaryotic cells let alone throughout the whole array of higher multicellular organisms.” (Alan Linton, “Scant Search for the Maker,” The Times Higher Education Supplement (April 20, 2001), Book Selection, p. 29) There are some confirmed cases of observed speciation in plants, all of them due to an increase in the number of chromosomes (polyploidy) (but this is not by a Darwinian process as natural selection was not involved). These cases are limited to flowering plants and polyploidy does not confer any new morphological characteristics. Thus, for all intents and purposes, this is only a technical distinction, as polyploidy is not responsible for any new elegant cellular machinery or organs or body plans.

One may ask that if the evidence for the Darwinian mechanism is so slim, why is it so highly-regarded by biologists, and why do they believe that it is responsible for the major innovations that occurred in life’s history? Behe answers: “Because the dominant theory requires it. There is ample precedent in the history of science for the overwhelming bulk of the scientific community strongly believing in imaginary entities postulated by a favoured theory.” After presenting an example, he says: “Just as nineteenth-century physics presumed light to be carried by ether, so modern Darwinian biology postulates random mutation and natural selection constructed the sophisticated, coherent machinery of the cell...[but] like the ether, the blind watchmaker does not exist.” (The Edge of Evolution, pp 163-4)

Intelligent Design

This short review would be incomplete without a discussion on the important theory of “intelligent design.” Intelligent design is a scientific theory\(^3\) that states that there are some biological features that are best explained as the result of deliberate, intelligent design. Some structures are made up of multiple heterogeneous well-matched parts that come together to perform a function independent of themselves, upon seeing which invariably we infer design by an intelligent cause based on our uniform experience. Since biological systems are chockfull of such features, intelligent design theory states that we can infer design in biology. For a better understanding of this theory and how it applies to different aspects of life, I would recommend Stephen Meyer’s Signature in the Cell and Jonathan Wells’ The Design of Life.

One thing that should be noted here is that intelligent design theory is different from what is known as “creationism.” Creationism is the philosophical and theological idea that God created the world and living creatures, and it generally proceeds from a literal reading of some biblical

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\(^3\) For refutation of claims that it is not science, see Stephen Meyer, Signature in the Cell, Chapter 18. Also see: http://www.evolutionnews.org/2012/11/why_intelligent1066741.html
Intelligent design, on the other hand, proceeds from the evidence. Its claims are much more modest. It simply states some features are best explained by the deliberate design of an intelligent agent or of intelligent agents, because this is what the evidence shows. The evidence does not reveal the identity of that designer. According to this definition, intelligent design does not rule out the theory of universal common descent (which creationism does). In fact, prominent intelligent design theorists like Michael Behe accept universal common descent (although in a recent communication with him, he conceded that with respect to the idea of universal common descent “new work is making things cloudier”). However, intelligent design theory does strongly reject the claim that Darwinian mechanisms are powerful enough to produce the elegant machinery found in living systems.

What does Islam say?

At the outset, it should be understood that Islam is a religion for the guidance of humanity, to bring them out of the darkness of disbelief in God, hedonism and wickedness, to the light of faith, righteous practice and good conduct. As it is a system of guidance, issues of a scientific nature are dealt with only secondarily, to reinforce certain other themes. Thus science is not one of the primary focuses of Islamic scriptures. However, it does touch on a few aspects of science.

Because its subject matter is man himself, the Qur’an discusses the origin of man in a number of verses (15:26-9, 38:71-5). In these verses there is a particular emphasis on a direct and unmediated creation by Allah of Adam (peace be upon him), where it uses the words, “I created him [i.e. Adam] with My two hands,” (38:75) and, “I proportioned him [i.e. Adam] and blew into him from My spirit” (15:29, 38:72). Furthermore, we learn in the hadiths, Adam was fashioned uniquely tall, at sixty cubits, after which he was asked to roam the heavens and greet the angels (Sahih al-Bukhari). This also points to an independent creation as it shows he was created in an adult form. Moreover, an authentic hadith also mentions that the (first) woman was created from a rib (Sahih al-Bukhari, Sahih Muslim), which the majority of scholars have understood as referring literally to the rib of Adam. This is also alluded to in the verse of the Qur’an: “O mankind! Be vigilant of your Lord Who created you from one soul, and created from it its mate,” (4:1) in the commentary of which a number of early exegetes said the “soul” refers to Adam and “its mate” refers to Hawwa who was created from his ribs (see: al-Durr al-Manthur, Markaz Hajr, 4:209).

The Qur’an states: “O mankind! We created you from a single male and female, and made you into nations and tribes that you may know one another.” (49:13)

We learn from this verse that the human race began as two people, a man and a woman. (Although, it is believed by some scientists that this is scientifically untenable, recently biologist Ann Gauger has shown that this is indeed possible according to our current knowledge (see Science of Human Origins, Chapter 5)).

Moreover, this verse tells us of differences or “variations” within human beings. Further, it tells us that all human beings are descended from the same parents. Thus, common ancestry within existing species is accepted, and small-scale micro-evolution within existing species is also accepted. Variation within our species is also mentioned in the verse: “And from His signs is the
creation of the heavens and the earth, and the variation in your tongues and your colours. Verily in that are signs for those who know.” (30:22)

Is it possible on the Islamic view that the first human being could have been descended from earlier ape-like creatures? There are a number of problems with this view. First, as mentioned earlier, there is an emphasis in the verses dealing with the creation of Adam on a direct and unmediated, independent creation, which is supported by authentic hadiths like those mentioned above.

Second, Adam was created in Jannah, an otherworldly realm. Although some scholars, prominent amongst them Ibn Kathir, have argued Adam’s “garden” was on earth, a clear hadith in Sahih Muslim proves that indeed it is the same garden believers will enter in the Afterlife. When the people ask Adam on the plains of resurrection to plead to Allah to open Jannah for them, Adam replies:

و هل أخرجكم من الجنة إلا خطيئة أبيكم آدم؟

“Did anything expel you from Jannah besides the error of your father, Adam?” (Fath al-Mulhim bi Sharhi Sahih al-Imam Muslim, Dar Ihya al-Turath al-'Arabi, 2:374)

Furthermore the verses, “We said [to Adam and Hawwa’]: Go down,” (2:38) and: “He said, ‘Go down, some of you enemies of some; and for you on the earth there will be a dwelling place and enjoyment for a time,’” (7:24) indicate Adam descended from the heavens onto earth. Moreover, the Qur’an suggests Adam’s garden had the features of the Jannah of the Afterlife: “So, We said: ‘O Adam, this is an enemy to you and to your wife. So let him not expel you from Jannah, lest you should get into trouble. Here you have the privilege that you will not be hungry nor will you be unclad, and you will not be thirsty, nor will you be exposed to the sun.’” (20:117-19)

Of course if Adam was originated outside of this earthly realm, he could not have descended from ape-like ancestors.

Thirdly, and perhaps the clearest proof in the Qur’an for the special, independent creation of Adam, is the comparison made with ‘Isa (peace be upon him). The miraculous way in which ‘Isa or Jesus was born is well-known (see Qur’an, 3:45-7, 19:16-23, 66:12). The spirit of ‘Isa was breathed directly into Maryam without the intervention of a male figure. In reply to the Christians who claimed that this was unique of ‘Isa and thus merited his divinity, the Qur’an replies: “Verily, the likeness of ‘Isa with Allah is as the likeness of Adam. He created him [i.e. Adam] from dust and said to him, Be, and he came to be.” (3:59) Ibn Kathir comments: “Verily, the likeness of ‘Isa with Allah, in the power of Allah, since He created him without a father, is as the likeness of Adam, since He created him without a father or mother...Thus the One Who created Adam without a father or mother, is able to create ‘Isa by way of greater priority.” (Tafsir al-Qur’an al-’Azim, Dar Ibn Hazm, p. 329)

This is the only possible meaning of this verse. If Adam was born through a Darwinian process from ape-like ancestors, he would have had both a father and a mother. Thus, the analogy between Adam and ‘Isa would completely break down. If it is said an exact likeness with ‘Isa would imply Adam was implanted in the womb of a woman, this is not necessarily the case, as
the verse only suggests a comparison not an exact equivalence. The linguist, al-Zamakhshari, said in the commentary of this verse: “How was ‘Isa compared to Adam, when he came into existence without a father, and Adam came into existence without a father and a mother? I say: He is similar to him in one of the two directions, thus there is no obstacle to him being distinguished from him from the other direction when comparing him to him, because a comparison is to share in some features [not all]; and because he was compared to him in that he came into existence in a supernatural way, and they are equal in this; and because coming into existence without a mother and a father is more extraordinary than coming into existence without a father, so an extraordinary thing was compared to something more extraordinary, in order that it can be more effective in defeating the opposition.” (al-Kashshaf, Maktabah al-‘Abikan, 1:563)

Furthermore, some of the earliest commentators of this verse make this exact observation, that the comparison between Adam and ‘Isa (peace be on them) is from the perspective of Adam having no parents while ‘Isa had only one parent. According to the principles of Qur’anic exegesis, such early commentaries are authoritative in the absence of contradictory evidence. Ibn Jarir al-Tabari narrates with his chain of transmission from the early commentator, Muhammad ibn Ja’far ibn al-Zubayr (d. ca. 110 H), who lived at the time of the Sahabah and Tabi’in (and whose narrations are found in all six of the famous collections of hadith) in the commentary of this verse: “Thus, if they say: ‘Isa was created without a man, Adam was created from dust by that Power without a woman or a man, and then he came to be just like ‘Isa, flesh and blood, hair and skin, so the creation of ‘Isa without a man is not more extraordinary than this.” The early commentator, ‘Abd al-Rahman ibn Zayd ibn Aslam (d. 182 H), also said something to this effect (Tafsir al-Tabari, Dar al-Hajr, 5:462). Thus, that Adam had no father or mother is the clear meaning of this verse, and is how it was accepted by the early authoritative exegetes.

Thus, it is very difficult to escape the conclusion that according to the clear indication of Islamic scripture, human beings are an independent creation of Allah. As for the time-scale, Islam has nothing to say on it. Thus, since the fossil evidence suggests human-like species abruptly appeared some two million years ago, this can readily be accepted.

As far as other creatures are concerned, although this level of detail does not exist for them in the Qur’an, there is a telling verse which states: “There is no creature on the earth, nor a bird flying with its wings, except communities like yourselves.” (6:38) Ibn Kathir comments: “Mujahid [ibn Jabr] (d. 102 H) said: Meaning, categorised kinds (asnaf musannafah) known by their [individual] names.” (Tafsir Ibn Kathir, p. 628) Thus, this verse indicates that Allah created “kinds,” individually, that are identified by their unique names. This is in fact consistent with the clear pattern of the fossil record, in which animals arrive abruptly and stay the same over long stretches of time. This understanding does not contradict the idea of common ancestry between very similar “species,” however, like the example of polyploidy referred to above, as those species may be considered to be of the same “kind,” so long as an outsider would identify them by the same name, based on very similar morphologies and anatomies.

Sometimes people use verse 71:14 of the Qur’an: “We created you in stages” as proof of evolution in the sense of universal common descent. However, there is no supporting textual evidence for this claim. More apparently, this verse speaks about the embryological stages of
development. There was an idea originated by the Greeks that animals are fully formed in the male sperm, and only grow bigger in the wombs. This idea is rejected in the Qur’an, and it asserts the embryo develops in stages, as detailed in verse 23:13. In the explanation of verse 71:14, Ibn Kathir states: “He created you in stages.’ It was said: Its meaning is [He created you] from a drop [of fluid], then a clot of blood, then a piece of flesh. Ibn ‘Abbas, ‘Ikrimah, Qatadah, Yahya ibn Rafi’, al-Suddi and Ibn Zayd said this.” (Tafsir Ibn Kathir, p. 1922) Another meaning of this verse given by some exegetes is that He created you with variations, i.e. some short, others tall, some black, others white etc. (Zad al-Masir, Ibn al-Jawzi, Dar Ibn Hazm, p. 1476) Thus, this verse cannot be used to prove the theory of universal common descent, especially when this interpretation conflicts with the apparent meaning of other verses of the Qur’an which suggest direct creation.

Thus, the Qur’an alludes to the separate creation of kinds, which vary between themselves and share ancestry with each other but not with other kinds. This explanation is far more consistent with the empirical data than modern Darwinian theory. We Muslims, therefore, have nothing to worry about in holding to this view with complete religious and scientific integrity. Moreover, the recent and exciting advances in intelligent design theory, I feel, provide strong support for God’s hand in biological history. It therefore has powerful theological implications, as a strong evidence for the existence of God.

Some people have cited Islamic thinkers like Ibn Sina and Ibn Khaldun as proof of evolutionary thought having existed in earlier Islamic thought. But Islamic Studies professor, Seyyed Hossein Nasr, explains their observations as follows: “What the traditional Islamic thinkers said is that you have levels of existence of life forms starting with plant life, which is superseded by animal life through the creative power of God, while this animal life also includes plant life within itself. Moreover, plant life itself has many levels not caused by temporal evolution but by the descent of archetypes into the temporal order as is also true of animals. We know, for example, that we have vegetal nerves about which Ibn Sina speaks. In the animal realm we also have a hierarchy; many Muslim thinkers such as al-Biruni and Ibn Sina have written about this matter and have asserted that there are simple life forms and then ever more complicated life forms and that the complicated life forms contain within themselves the simpler life forms. Obviously human beings have a more complicated life form than the monkey, but possess also some of those characteristics we see in the monkey, but this does not mean that we have evolved from the monkey.” (On the Question of Biological Origins, 2006 http://www.thefreelibrary.com/On+the+question+of+b+origin+a0157034139)

Thus, they were speaking about a philosophical concept related to the hierarchy of life forms, where the more advanced form contains the capacities of simpler ones. They were not speaking about evolutionary history or common descent.

As for the question of whether the theory of universal common descent is a theologically viable option in Islam, firstly, Muslims should remember the Prophetic advice: “Leave what causes you doubt for what causes you no doubt.” (Jami’ Tirmidhi) He also said: “Whoever stays away from doubtful matters, he has safeguarded his religion and his honour.” (Sahih al-Bukhari, Sahih Muslim) Falling into doubtful matters puts one’s religion and honour at risk. Secondly, since the evidence for Adam’s special creation is categorically clear from the Qur’anic passages and
supporting textual evidence, to believe he was born of ape-like ancestors is contrary to its clear meaning, and is thus theologically untenable. As for other species, the Qur’an suggests that different “kinds” were created independently and make up independent communities just like human beings. Thus, this is the theologically more favourable view. However, if someone favours the view that non-human species evolved from common ancestors, it would not be as theologically problematic as to claim the same of human beings. Nonetheless, I hope this discussion has shown that both scientifically and theologically, this is a much weaker view. A final point I would like to mention here is that Darwinian biologists, when defining evolution, point out that it is “undirected,” “unguided,” “unsupervised” and unintended. This is a metaphysical assumption that certainly clashes with Islamic belief. The Qur’an states: “We created man in the best form” (95:4) which clearly implies volition and purpose in man’s formation, something at odds with the Darwinian view.

**A Final Point**

You will find many scientists and non-scientists alike vigorously defending Darwinian theory, despite the lack of evidence. There are two main reasons for this: First, many do so to garner scientific credibility amongst peers. Second, others do so for the fear that any alternative will ineluctably lead to religious belief. Many scientists with an atheistic commitment have admitted that Darwin was crucial to their worldview. Richard Dawkins, for example, famously said: “Darwin made it possible to be an intellectually fulfilled atheist” (*The Blind Watchmaker*, p. 6). In other words, in the absence of Darwinian theory it is very difficult to be an atheist; as, Dawkins himself explains so eloquently, the elegant functional complexity in living things just cries out for an adequate explanation – and if Darwinism fails (which it certainly has), this only leaves intelligent agency. It is probably for this reason, that many so-called scientists defend the view so passionately, i.e. on dogmatic and philosophical grounds, not on scientific ones.

**Recommended Reading**

*The Politically Incorrect Guide to Darwinism and Intelligent Design*, Jonathan Wells

*Signature in the Cell*, Stephen Meyer

*The Design of Life*, Jonathan Wells and William Dembski

*The Myth of Junk DNA*, Jonathan Wells

*The Edge of Evolution*, Michael Behe

*Science and Human Origins*, Ann Gauger, Douglas Axe and Casey Luskin

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