

DARWIN'S SHADOW: EVOLUTION IN AN ISLAMIC MIRROR

Muzaffar Iqbal

The year 2009 was declared the “International Darwin Year” by the International Union of Biological Sciences. It generated a lot of intellectual activity in the Western world through conferences, seminars, websites, and publication of books. There was hardly any enthusiasm in the Muslim world; no one seemed to be interested in celebrating the bicentennial of Darwin’s birth or the sesquicentennial of the publication of *On the Origin of Species*.

This third installment of the series “Darwin’s Shadow” explores Darwinian and post-Darwinian evolutionary theories from an Islamic perspective. Surveying the intellectual landscape of the Muslim world, the article situates Darwin’s arrival and post-Darwinian responses in a broad historical and social context and then suggests why Muslims should not ignore evolutionary perspectives, even though these have little to do with their worldview.

The article also indicates areas where evolutionary theories in cosmology and biology overlap with religious beliefs and how this overlap produces conflict between the metaphysical structures of religious and evolutionary worldviews. The only version of evolution which requires serious examination is the so-called theistic evolution, because all other versions are obviously outside the pale of the Islamic worldview and therefore need no further attention. Fundamentals of theistic evolution are compared with the Qur’ānic creation narrative and it is shown that the two are not compatible.

Muzaffar Iqbal is Founder-President of the Center for Islam and Science (www.cis-ca.org). Email: Muzaffar@cis-ca.org.

Islam & Science, Vol. 8 (Summer 2010) No. 1
ISSN 1703-7603 (Print); ISSN 1703-7602X (Online)
© 2010 by the Center for Islam and Science

Keywords: International Darwin Year; intellectual and historical context of Darwin's reception in the Muslim world; meta-physical content of theory of evolution; evolutionary cosmology; theistic evolution; the Qur'ān and theistic evolution.

Introduction

On December 31, 2009, the “International Darwin Year” came to an end and numerous ceremonies, celebrations, and conferences commemorating the bicentennial of Darwin's birthday and sesquicentennial of the publication of his *On the Origin of Species* became part of history, leaving behind a much strengthened Darwin industry poised to flourish for decades to come—not because of Darwin but because of the innate attraction of humanity to the question of the origin of species, “that mystery of mysteries,”¹ which Darwin strove to solve upon his return from the Malay archipelago in 1837, “by patiently accumulating and reflecting on all sorts of facts which could possibly have any bearing on it.”²

While neither Darwin nor the International Year named after him³ were able to conclusively resolve that mystery of mysteries, the year did produce and regurgitate a tremendous amount of material on the questions related to the origin, propagation, and diversity of life through numerous books, papers, conferences, websites, and exhibitions.⁴ Only a few events focused on Darwin's reception in the Muslim world or on Islamic perspectives on his ideas, even though some sensationalists found in this year more opportunities to denigrate Islam and Muslims through provocative articles⁵ and popular magazines included articles highlighting the need to promote evolution in the Muslim world.⁶ The few conferences that made overtures to Islamic perspectives or

1. Charles Darwin, *On the Origin of Species*, (London: John Murray, 1859), p. 1.

2. *Ibid.*

3. 2009 was so-called by the International Union of Biological Sciences (IUBS) through a resolution passed in its 29th General Assembly held in May, 2007 in Washington DC, USA. <<http://www.iubs.org/newiubs/organisation/resolutions.php>>. It was endorsed by numerous scientific societies.

4. For example, the Darwin exhibition at the National Museum of Natural History, London, and many others around the world.

5. Drake Bennett's “Islam's Darwin problem: In the Muslim world, creationism is on the rise” (*Boston Globe*, October 25, 2009) is a typical example.

6. For instance, Richard Dawkins, the most vocal atheist at present advocating a hardcore evolution, a Professor for the Public Understanding of Science at the University of Oxford and the author of such bestsellers as *The God Delusion*, *The Selfish Gene*, and *The Greatest Show on Earth*, said in an inter-

Muslim responses to Darwin generally did so through inviting non-Muslims to speak on behalf of Islam and Muslims, demonstrating once again the old colonial adage made famous by Edward Said that natives are incapable of representing themselves.⁷

In the Muslim world the year was a non-event, proving yet again that Darwin and what he wrought has little relevance to most Muslims and much contemporary Islamic thought, and that the problem he poses for religion is typically of European—and now increasingly American—scope, a problem that emerged from and remains rooted in one specific scientific and intellectual tradition to which Darwin himself belonged, a problem radiating the heat of the post-Renaissance European revolt against religious beliefs, institutions, and authorities.

This is the same revolt that gave birth to the one specific formulation of the relationship between religion and science that is now proclaimed the only way to formulate this relationship and which renders religion and science

view with *The Times*: “To be a bestseller in a Muslim country would be a personal triumph. I would like to see my books translated into Arabic. They haven’t been...It’s the fact that Islam teaches the Koran is the literal word of God, unlike most Christian sects, which say the Bible is largely symbolic. That could well be the cause.” Dawkins even saw “Islamic influence” as being “the likely explanation for the growing popularity of creationist beliefs in Britain, where a recent poll found that 30 per cent of teenagers accept the rebranded idea of intelligent design. “I think that’s pretty clear,” he said. “I hear that from colleagues at the coalface of teaching. There has been a sharp upturn in hostility to teaching of evolution in the classroom and it’s mostly coming from Islamic students.” Mark Henderson, “Professor Richard Dawkins wants to convert Islamic world to evolution,” *The Times*, August 22, 2009.

7. The conference entitled “Darwin and Evolution in the Muslim World” held at Hampshire College, Amherst, MA, on October 2-3, 2009 was not atypical. Its program was weighted: its featured keynote speaker knew neither Arabic nor any of the other languages spoken in the Muslim world; the two speakers who presented general historical surveys of Darwin’s reception in the Muslim world on the first day of the conference had no linguistic access to the various languages spoken in the Muslim world and hence all their material came from second-hand English sources, foreclosing the possibility of advancing knowledge and understanding as they merely regurgitated old material; its major speakers were either non-Muslims or Muslims who merely supplied surveys of attitudes, rather than any intellectual content; the speaker who enlightened the audience on the Qur’anic exegetical literature did not believe that the Qur’ān is a revealed text as Muslims do, and thus he spoke from outside the tradition. For Conference Program and webcasts, see <<http://evolutionandislam.hampshire.edu/conference-program>> (accessed January 4, 2010).

two distinct and disjointed entities posited for or against each other.⁸ This “two-entity model,” and the dichotomy arising out of this compartmentalization and latent severance of religion and science, is utterly foreign to Islam as attested by the absence of any discourse on “Islam *and* science” during the long period of eight hundred years (ninth to the sixteenth centuries) when the Islamic scientific tradition was the most robust scientific tradition anywhere in the world. Yet, once imposed on Islam and Muslims, the Islam versus science—as well as its specific applications such as evolution versus Islam—nevertheless took shape, and since then the need has existed for Muslims to participate in these typically non-Muslim issues.

Generally speaking, Muslim responses to Darwin and post-Darwinian discourse on evolution are found wanting when judged from Western academic standards. Most religious scholars who have written on the subject (either ‘for’ or ‘against’ evolution) have added little scientific or religious and philosophical content to the discourses because of their lack of scientific understanding of the subject, while most Muslims trained in natural sciences have no framework independent of modern science itself to examine and explore various meta-scientific issues involved in the claims, inferences, and postulates of various aspects of the theory of evolution. Thus the discourse remains hung, straddled between a knee-jerk reaction to a single-strand ape-to-man understanding of Darwinian and post-Darwinian evolutionary discourse, and an uncritical surrender to evolution as a scientific fact—and hence a valid truth by itself, requiring no further investigation, whether scientific or meta-scientific—merely because it carries the formidable weight of “scientific truth”. This surrender to the tyranny of scientism is typical of post-nineteenth century Muslim attitudes toward Western science and there are historical reasons for this which cannot be ignored.⁹

It has already been noted that the Islam versus evolution discourse was brought to Muslims during an era when almost the entire traditional land of Islam—the classical *dār al-Islām*—was under foreign occupation as colonies where “natives” lived under strict colonial control, generally by remotely situated British and French administrators or their local representatives. Furthermore, the initial Muslim reactions to Darwin and his ideas were shaped under historical conditions which did not allow any independent examination

8. For more details on the two-entity model and its critique, see Muzaffar Iqbal, *Science and Islam* (Westport, CT and London: Greenwood Press, 2007), chapter 1.

9. These have in been explored in the previous installments of this series; see “Darwin’s Shadow: Context and Reception in the Western World,” *Islam & Science* 6 (2008) 2, 99-152 and “Darwin’s Shadow: Context and Reception in the Muslim World,” *Islam & Science* 7 (2009) 1, 9-52.

of the content of the theory. Muslims of that time encountered Darwin and his theory through second-hand material brought them by missionaries, colonizers, or a few fellow citizens of their own lands, who, in turn, generally received their own knowledge from popular and pseudo-scientific literature then being produced in English or French.¹⁰ Translated into Arabic, Urdu, Persian and other languages spoken in the Muslim world, this Western material circulated only among a small segment of population as literacy rates were low, access to the newly-established Western-style education was limited, and modern science was itself a foreign entity, cultivated in faraway lands from where certain products of the new science were just beginning to arrive in the colonized lands.¹¹ Those who translated the material did so mostly (though not always) to prove that they were up-to-date with the current developments in science and philosophical issues being discussed in Europe—the lands of their rulers, who were also considered possessors of a superior civilization. The translators' aim was thus to enlighten their fellow citizens and bring to them the fruits of that superior civilization, thereby simultaneously claiming for themselves a privileged position. This social and political context cannot be ignored and indeed is vital to understanding the initial composition of Muslim perceptions of the theory of evolution; it must be perceived with its full historical force in

10. “Popular and pseudo-scientific” because there is no evidence to prove the presence of any Muslim biologist or naturalist at the forefront of scientific research in the nineteenth century; scientific journals then being published in Europe were out of reach of most Muslims who wrote on the subject because they did not have scientific training to read them. The so-called Arabic scientific journals of the nineteenth century were neither “scientific” as the word is understood when applied to publications which publish the results of pure or applied scientific research nor “journals” in the sense in which the word is understood to mean refereed publications. At best, they were printing Arabic translations of popular European magazines.

11. Examples: The first full-scale working railway steam locomotive, built by Richard Trevithick in the United Kingdom, ran on 21 February 1804 hauling a train along the tramway of the Penydarren ironworks, near Merthyr Tydfil in south Wales; it took almost fifty years for this invention to arrive in India where the Bengal Sappers of the Indian Army ran a steam locomotive, named ‘Thomason’, with two wagons carrying dirt from Roorkee to Piran Kaliyar in 1851, two years later, the first passenger train ran from Bombay to Thane. The first commercial electrical telegraph was co-invented by Sir William Fothergill Cooke and Charles Wheatstone, and entered use on the Great Western Railway in Britain. It ran for 21 km from Paddington station to West Drayton and came into operation on 9 July 1839. The telegraph lines from Britain to India were connected in 1870 by several companies which combined to form the Eastern Telegraph Company in 1872.

order to understand the intellectual schizophrenia that subsequently emerged in the Muslim mind about the theory of evolution.

In addition, the following historical, social, cultural, and political factors need to be kept in full view:

1. At the time of Darwin's arrival in the Muslim world, no one could imagine the magnitude of change that would eventually produce the contemporary Muslim world. For most Muslims, the nineteenth century was still linked to the premodern era through the continuation of lifestyles, habits, modes of learning and living; the modern rupture with the past had emerged only in the lives of a small segment of the population. This small segment could often cast a glance on both side of the dividing line, but was increasingly being molded by the intellectual currents coming to the Muslim lands from Europe. In time, it was this group that outstripped the older religious leadership in taking control of the Muslim world through a process that also involved the transformation of the entire traditional land of Islam during the course of the twentieth century.
2. The small intellectual minority of the nineteenth century which had a rudimentary knowledge of modern science and of Darwin and his theory was straddled between an awareness of a rapidly changing world in Europe and the older, pre-modern era, in which most of the Muslims still lived at the dawn of the nineteenth century. Members of this minority travelled to the lands of the colonizers, saw first-hand the brave new world of modern science and its power, new industries and products, and cities and villages transformed by the use of machines invented through the application of scientific knowledge; and they returned home eager to bring this "progress" to their own lands and people. While they struggled at the political level to gain even the most basic rights for themselves and their people, they cooperated with the colonial rulers in the enlightenment project, believing sincerely in the descriptions of their own states provided by the colonial masters: backward polities inhabited by poor, mostly illiterate, militarily conquered, politically disfranchised natives.
3. This self-perception, which denigrated everything of worth in their own tradition and learning, produced a mental enslavement which the Muslim leadership of the nineteenth century successfully passed on to the masses. The superiority of

everything European, which these opinion-makers perceived intuitively as well as consciously, was then projected onto a half-imagined past when Islamic civilization was similarly robust and possessing great power. This created a deep-rooted nostalgia as well as a desire to awaken the Muslim masses from their slumber. Both were expressed in countless books, speeches, articles, and poetry produced by this minority while it faced the painful reality of contemporary times increasingly marked by the fading of even the last rays of that past glory, glamour, and vitality of Islamic civilization. For this minority, there was nothing valuable in the “native” tradition; and if the belief in science as the highest form of knowledge was what the masters had finally come to believe, then that must be true—especially since it was written in the script used by the rulers.

4. Darwin and his theory, thus, reached the Muslim mind in this context and through a few non-representative, mentally colonized leaders and opinion makers of the nineteenth century. “Non-representative” because, despite the high respect accorded to them by their fellow men and women and by posterity, these men (and a few women) were, in fact, deeply enslaved mentally, emotionally, spiritually, and intellectually and their state was not the state of the general populace which continued to live in a pre-modern era mostly in villages, where the impact of modernity was still a foreign entity, projected in concrete form through the passing of a black steam engine pulling a lonely train on a forlorn track.
5. The passage of life from its pre-modern, slow, and deeply rooted past to a fast-moving modern way of life, with full awareness of great changes on the horizon, was, however, very real for the small segment of men and even smaller segment of women educated in the newly planted Western-style educational institutions in the colonized lands. Some of them were first to complete their higher education from educational institutions located in the heart of the ruling Empires where they went as native citizens of the Empire. Nevertheless, they saw a new science on the horizon and they understood that in that science lay salvation.
6. This nineteenth-century context shaped the discourse on evolution in the Muslim world in a particular mould—a mould which was to produce waves of reactions and counter-reactions and which continues to have its impact on the current discourse

on evolution. For the religious leadership of the nineteenth-century Muslim world, the theory of evolution was one more proof that the infidels of the Western world really had no faith and had gone completely astray. For the small educated segment, evolution was a fact, since it was believed to be so by a dominant segment of Western philosophers. Even though they were aware of the fierce opposition to the theory of evolution among religious leaders, they sided with the “scientific camp” due to their own uprooting from religious beliefs and practices. These two currents remained strong through the emergence of some fifty independent Muslim states on the world map in quick succession during the decade in which the Second World War reconfigured the political map of the world. The new states grappled with birth pains, floundered, and struggled with the huge disequilibrium produced over the course of the prior three centuries and which had all but destroyed the local traditions, and had created fundamental rifts between those who held on to the older worldview and those who were uprooted from it.¹²

7. Most political, social and intellectual leaders of the new states came from the latter segment. Shaped by colonized mental patterns, these leaders of the newly independent Muslim states neither had the ability nor the desire to reconfigure their states on a model different from the colonial model and hence almost the entire Muslim world found itself in a new situation of proxy colonization at the hands of their own people who continue to rule to this day either as despots or through institutions established by the colonizers.
8. The most effective instrument of change in the Muslim world was, and remains, the modern educational system. Planted by the colonizers, Western-style education has all but obliterated other models of learning and its massive spread has converted the minority of the nineteenth century into a majority. Gone are the days when colonial Western-style education was the privilege of a few; the mushrooming industry of new educational institutions throughout the Muslim world has produced a massive transformation over the past fifty years and now a very large segment of Muslims finds itself completely uprooted

12. For more details see chapter 7, “Winds of Change” in Muzaffar Iqbal, *Islam and Science* (Aldershot: Ashgate, 2002).

from the spiritual and intellectual soil of their ancestors. Most educated Muslims today cannot even name a dozen scholars from their tradition; most simply have no idea of the works left behind by those keen and perceptive minds and hearts imbued with a deep consciousness of the meaning and purpose of life whose time on earth was Divinely blessed and who had the focus and spiritual strength which made it possible for them to leave behind monumental works of scholarship which continue to illuminate spiritual paths for countless human beings to this day. One only has to look at the works of scholars like Abū Ḥāmid al-Ghazālī (450-505/1058-1111), Yaḥyā ibn Sharaf Muḥyī al-Dīn Abū Zakariyyā al-Nawawī (631-676/1233-1277), Ibn Kathīr (701-774 A/1301-1373) and Jalāl al-Dīn al-Suyūṭī (849-911/1445-ca.1505) to verify this reality and not dismiss it as sheer nostalgia. This uprooting, imposed on Muslims through diverse martial, economic, political, and social currents, and other related factors have made it necessary to examine the theory of evolution.

9. While fundamental political and social transfigurations were taking shape at a grand scale, the discourse on evolution in the Muslim world reached its logical destination in the form of the question: What does the Qur'ān say about evolution? This was so because ultimately the theory of evolution posed questions of ultimate concern about the origin and continuation of life. It is this meta-scientific aspect of the theory, often lying behind the observable data and its explanation, which has always been at the heart of religiously-defined controversies ever since Darwin, even though sometimes its existence is denied and the theory is presented as a purely scientific explanation of painstakingly gathered data through repeatable experiments. There is also a need to clearly demarcate areas of discourse where meta-scientific content has been blended in this putative scientific theory and examine its relationship to fundamental Islamic beliefs about God, life, and the cosmos. At another level, representative works by Muslims have become necessary to prevent non-representative voices from dominating the intellectual field.
10. Muslim responses to the question 'What does the Qur'ān say about evolution?' embedded in exegetical works since the nineteenth century are for the most part by religious scholars who only had a rudimentary understanding of scientific aspects of

the theory and hence did not have a solid grasp on the content of the theory. Many Muslim scholars who wrote on the theory of evolution outside the exegetical tradition during the first half of the twentieth century dealt with meta-scientific aspects of the theory but felt the same compulsion as that of the exegetes—and when they commented on its scientific aspects, their works were constrained by the same limitations as those of the exegetes because of a lack of scientific understanding.

11. Scientifically informed works by Muslim scholars, rare as they are in comparison to the wide-ranging non-Muslim literature for and against Darwinian and post-Darwinian theories, often regurgitate material from Christian creationists. There has been no comparable original scientific research like *Darwin's Black Box* which provided considerable support to the ID movement and increased its receptivity in circles which needed a “scientific refutation” of the theory of evolution (but which by itself is not a book grounded in any religious belief system, as its author wanted it to be a scientific work).¹³

Background to the Meta-Scientific Content of Evolutionary Biology

-
13. Michael Behe, *Darwin's Black Box* (New York: Free Press, 1998). Behe's oft-quoted work should not be taken as an anti-evolutionist text; rather, he is a theistic evolutionist who believes that “it's possible to believe in both God and evolution. I'm a Roman Catholic, and Catholics have always understood that God could make life any way he wanted to. If he wanted to make it by the playing out of natural law, then who were we to object? We were taught in school that Darwin's theory was the best guess at how God could have made life. I'm still not against Darwinian evolution on theological grounds. I'm against it on scientific grounds. I think God could have made life using apparently random mutation and natural selection. But my reading of the scientific evidence is that he did not do it that way, that there was a more active guiding. I think that we are all descended from some single cell in the distant past but that that cell and later parts of life were intentionally produced as the result of intelligent activity. As a Christian, I say that intelligence is very likely to be God. Several Christian positions are theologically consistent with the theory of mutation and selection. Some people believe that God is guiding the process from moment to moment. Others think he set up the universe from the Big Bang to unfold like a computer program. Others take scientific positions that are indistinguishable from those atheist materialists might take but say that their nonscientific intuitions or philosophical considerations or the existence of the mind lead them to deduce that there is a God. I used to be part of that last group. I just think now that the science is not nearly as strong as they think.” Steven Pinker, “Can you Believe in God and Evolution?” *Time*, August 7, 2005.

The foundation of biology was reconfigured by Darwin in 1859 and was reinvented during the 1920s and 1930s through “The Modern Synthesis”. In both cases, “the success of these syntheses rested in part on ignorance,”¹⁴ even though both received overwhelming support from the scientific community. Both views have been seriously challenged by the same community: the former on the basis of new discoveries made in genetics and cell biology to which Darwin had no access¹⁵ and the latter on the basis of later developments in molecular biology, which was in its infancy when R.A. Fisher, J.B.S. Haldane, W.E. Wright, Theodosius Dobzhansky, Sewall Wright, E.B. Ford, Ernst Mayr, Bernhard Rensch, Sergei Chetverikov, George Gaylord Simpson, G. Ledyard Stebbins and other biologists, working together as well as independently, crafted the Modern Synthesis as an improvement on Darwinism.

Notwithstanding lonely contrarian voices (such as Conrad Hal Waddington in Britain and Trofim Denisovich Lysenko in the former Soviet Union), the Modern Synthesis was hailed by an overwhelming majority of working biologists as the most satisfactory answer to the unresolved mysteries. This confidence in the explanatory power of the Modern Synthesis, however, started to crumble around the mid-1970s with the attainment of the means of data collection through higher resolution instruments. Now scientists could discuss mechanisms of incorporation of genes in the cells, mobile genetic elements, and organelles of diverse historical origins. This dismantling of the once-seemingly satisfactory scientific explanation accelerated toward the end of the 20th century with experiments that showed that DNA sequences often “evolved in ways that *reduced* the fitness of the organisms that bore them.”¹⁶

These new challenges to the Modern Synthesis notwithstanding, it is hailed as a major step which “bridged the gap between experimental geneticists, naturalists, and palaeontologists,”¹⁷ and, more importantly, produced a widely accepted notion that “the scientific consensus around evolution is

14. Michael R. Rose and Todd H. Okley, “The new biology: beyond the Modern Synthesis,” *Biology Direct* 2 (2007) 30, available from <<http://www.biology-direct.com/content/2/1/30>>, accessed April 28, 2010.

15. For a history of challenges to Darwinism around the turn of the twentieth century, see P.J. Bowler, *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades Around 1900* (Baltimore: Johns Hopkins University Press 1983).

16. Rose and Okley, “The new biology,” 2, emphasis in the original.

17. Also called the New Synthesis, the Evolutionary Synthesis and the Neo-Darwinian Synthesis. The term Modern Synthesis was coined by Julian Huxley who used it for the title of book *Evolution: The Modern Synthesis* (London: Allen & Unwin, 1942).

overwhelming.”¹⁸ Yet what is held as firm and well-proven at one time falls apart in the wake of new evidence and no true scientist ever holds on to fallen theories, although the investments of some make it more difficult to let go of one’s own discoveries and grand theories.¹⁹ In general, however, everyone understands that science is an ever-changing discipline, an endeavor to understand nature and all that exists in the cosmos which, in itself, is beyond *complete* human comprehension. Thus, from Aristotle through al-Bīrūnī to Ibn al-Haytham to Newton to Einstein, humanity has gained successive layers of different understandings of how life originates and how species propagate. We have learned to be humble in the light of our collective experience and thus when certain fundamental concepts of biology, generally accepted as firmly rooted in experimental and observational data, started to crumble around the mid-twentieth century, no one was entirely alarmed except for those who had made Darwinism an article of faith.

Regardless of these exceptions, however, most biologists now know that—unlike what was believed before the new discoveries proved otherwise around the middle of the twentieth century, (i) species are, in fact, *not* fine-tuned to their ecological circumstances, presumably due to their inability to adjust their biochemistry; (ii) species—no matter how one defines this ubiquitous but variously defined term—cannot be taken as “durable units of evolution”, with organisms, organs, cells, and molecules as constituting sub-units; and (iii) the “machinery” of organisms and cells does not always observe rules of efficient designing. Likewise, many biologists are now calling for a new foundation for biology, beyond the Modern Synthesis.²⁰

Meta-Scientific Aspects of Evolution

Meta-scientific data built into the interpretive framework of evolutionary biology as well as the widespread application of evolutionary perspectives in disciplines other than biology have led to the emergence of a hosts of “beliefs” ever since Darwin. It is these “beliefs” that have now attained the status of a pseudo-religion which require careful examination, independent of scientific observations and carefully recorded experimental data as they, rather than the observed data, attempt to redefine the human understanding of God, life,

18. *Science and Creationism: A View from the National Academy of Sciences*, 2nd ed., p.

39. This work was produced by the “Steering Committee on Science and Creationism” in 1999 and is available for free download at <<http://www.nap.edu/catalog/6024.html>>. Accessed June 3, 2010.

19. For details, see Edmund Blair Bolles, *Einstein Defiant* (Washington D.C.: Joseph Henry Press, 2004), which recounts the famous Bohr-Einstein debates over quantum physics.

20. Rose and Okley, “The new biology.”

and the cosmos from perspectives which are deeply contrary to Islamic tenets.

Evolutionary perspectives hold that the natural world has a complexity which is the product of the twin mechanisms of random mutation and natural selection; that human beings are part and parcel of the natural world, born of “risen apes not fallen angels,”²¹ the product of the same process that created the beetle and the bumblebee. Seen from this perspective, “the universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind pitiless indifference. We cannot admit that things might be neither good nor evil, neither cruel nor kind, but simply callous—indifferent to all suffering, lacking all purpose.”²²

In short, the term “evolution” is not merely limited to biology, where it refers to the “biological evolution of living things,” but also to many other disciplines ranging from physics to sociology. Thus one talks of the processes by which planets, stars, galaxies, and the universe form and change over time also as types of “evolution.” Inherent in the term—and common to all its applications—is the concept of change over time, even though the processes by which change takes place may be quite different.

Why is it Important to Understand the Meta-Scientific Content of Evolution?

The task of examining the theory of evolution from an Islamic perspective is complicated by the fact that ever since Darwin himself the theory has been rendered amorphous and often dependent on its context for the grammar of its articulation. Furthermore, what precipitated through Darwin’s works in the history of Western thought has been projected across temporal regimes: backwards into the works of Greek, Christian, and even Muslim thinkers of the medieval times and forward into a labyrinth of new theories with substantial, even fundamental, changes to Darwin’s original postulates—some of which are so remote from Darwin’s original formulation that all that remains common between them is a certain residual isomorphism. Yet, Darwin’s name remains umbilically attached to modern biology and none of the other major biologists of the post-Darwinian era—Oken, Haller, Lamarck, Wallace, Weismann, Mendel, Morgan, de Vries, Bateson, Fisher, Wright, Dobzhansky, Ham-

21. “But we were born of risen apes, not fallen angels, and the apes were armed killers besides...The miracle of man is not how far he has sunk but how magnificently he has risen. We are known among the stars by our poems, not our corpses.” Robert Ardrey, *African Genesis: A Personal Investigation into the Animal Origins and Nature of Man* (New York: Macmillan Publication Co., 1961).

22. Richard Dawkins, *River Out of Eden* (New York: Basic Books, 1995), 96.

ilton, Lorenz, Trivers, Dawkins, Gould, Lewontin, Sober, or Wilson—whose contributions are far more central to the current state of biology occupy the same iconographic status as does he, whose name gives impetus to a Darwin industry that flourishes even in times of major economic recession.

David Livingstone's review of John Durant's *Darwinism and Divinity* wittily expresses Darwin's longevity:

As a source of theological irritation and, in some cases, inspiration, Charles Darwin must match pound for pound any modern writer on religion, if the sheer weight of printed paper is to be taken as a guide. Almost daily the 'just published' bookshelves display new works Darwinizing divinity, divinizing Darwinism, or, as with the creationists, deprecating both. To survive in the environment of this market-place, any new book must surely find itself subjected to Darwin's very law of natural selection.²³

The theory—theories—of evolution has a symbolic value as an icon of progress; scientific content, based on observations and experiments; meta-scientific content, often hidden within the scientific content; explanatory content, which attempts to explain observed data; and all versions of the theory invariably contain a religious element, even though it is sometimes denied. This religious content of the theory is the basis of its conflict with religion, even though relentless attempts have been made to dismantle this conflict model or find ways to harmonize its sharp edges, whether by demythologizing the 1860 Huxley-Wilberforce debate²⁴ or by

over-emphasizing the accommodationist ethos of the liberal tradition, or musing on the latest conflation of evolution and religion... [or by] efforts to biologize theology by talk of 'laws of love', 'organic Christianity' and 'infinite and Eternal Energy' [thereby paving] the way for a 'naturalistic Calvinism' which justified the ways of nature

23. *The British Journal for the History of Science*, Vol. 19 (Nov. 1986) No. 3, 352-353.

24. The debate took place at the Oxford University Museum on 30 June 1860, seven months after the publication of Charles Darwin's *On the Origin of Species*, and many prominent British scientists and philosophers participated. Among those who were present were Thomas Henry Huxley, Bishop Samuel Wilberforce, Benjamin Brodie, Joseph Dalton Hooker and Robert FitzRoy. There is no verbatim account of the debate, but it is said that Wilberforce asked Huxley whether it was through his grandfather or his grandmother that he claimed his descent from a monkey and Huxley replied that he would not be ashamed to have a monkey for his ancestor, but he would be ashamed to be connected with a man who used his great gifts to obscure the truth. See J. R. Lucas, "Wilberforce and Huxley: A Legendary Encounter," *The Historical Journal* 22 (June 1979) 2, 313-330, available at <<http://users.ox.ac.uk/~jrlucas/legend.html>>, accessed April 28, 2010.

to society. The same conceptual manoeuvres are still to be found, as witness the sociobiological revolution...[with] Arthur Peacocke [continuing] the theme by giving his own blessing to the union of biology and theology.²⁵

Yet, no matter how many times one attempts to resolve the evolution versus religion conflict by making inroads into ideas of Divine immanence or the vitalistic thrust of Dreisch's *entelechy*, and finally blowing over the raging debates the calm winds of his anthropic principle, there is always another to reinvent the conflict.²⁶

This is so because of the meta-scientific data built into the interpretive framework of evolutionary biology. This interpretive framework is meta-scientific because it has not arisen out of experimental data but rather is applied to experimental data. A normative tradition of interpretation which arose in modern Western science through the works of philosophers of science and which has been fortified through its acceptance and usage by a dominant majority of biologists—a practice that has established its own canon and which has yielded a set of “beliefs”—has by now attained the status of a pseudo-religion so that any voice against it is immediately viewed as anti-science. What

25. Livingstone, Review of John Durant's *Darwinism and Divinity*, 353.

26. See for instance Michael Ruse, *Darwin and Design: Does Evolution Have a Purpose?* (Cambridge, Mass./London: Harvard University Press, 2003). The conflict between evolution and religion is too well-established to need a reexamination; even a cursory glance at any basic textbook on the history of religious thought since Darwin is enough to provide adequate empirical evidence. The following quote from W.H. Brock and R.M. Macleod, “The Scientists' Declaration: Reflexions on Science and Belief in the Wake of 'Essays and Reviews,’” 1864-5, provides, in a condensed form, a general description of the time when the mould was being cast: “During the decades following the publication of Darwin's *On the Origin of Species* in 1859, religious belief in England and in particular the Church of England experienced some of the most intense criticism in its history. The early 1860s saw the appearance of Lyell's *Evidence of the Antiquity of Man* (1863), Tylor's research on the early history of mankind (1863), Renan's *Vie de Jésus* (1863), Pius IX's encyclical, *Quanta cura*, and the accompanying *Syllabus errorum*, John Henry Newman's *Apologia* (1864), and Swinburne's notorious *Atlanta in Calydon* (1865); it was in this period also that Arthur Stanley was appointed Dean of Westminster, and that Bills were introduced in Parliament to amend or repeal the ‘Test Acts’ as they affected universities. They were the years that witnessed Lyell present the case for geology at the British Association at Bath (1864), the first meeting of the X-Club (1864), and the award of the Royal Society's Copley Medal to Charles Darwin. These were the years in which, as Owen Chadwick has put it, ‘the controversy between “science” and “religion” took fire.’” *The British Journal for the History of Science*, Vol. 9 (March 1976) No. 1, 39-66.

remains central to the religion-evolution discourse is thus not the changing scientific data but the interpretive apparatus applied to experimental data and observed facts. It is through this application of a meta-scientific framework of interpretation that one derives the aforementioned “beliefs” which then precipitate grand theories about the origin and evolution of species—even though there is hardly any unanimity even amongst the scientists about what a “species” is.²⁷

It must be recognized, nevertheless, that even in the absence of a basic and widely acceptable definition of biological species,²⁸ concepts clustered around it—such biological change, adaptation, survival and mechanisms of survival—directly overlap with religious beliefs and explanations. Ever since Darwin, the theory of evolution has become many things to many people, and since it is now not just one but many theories it is important to distinguish what is most essential from that which can be left aside.

What is to be Examined from an Islamic Perspective?

As already stated, the task of examining the theory of evolution from an Islamic perspective is complex, but it can be made manageable by eliminating what clearly falls outside the domain of Islam. Thus, one can easily leave out the “hard versions” of the theory, advocated by such atheists as Richard Dawkins, and concentrate on what is euphemistically called “Theistic Evolution” for the obvious reason that all versions of the hard theory, that is, the versions which eliminate God altogether, have no relevance to Muslims, no matter how they understand and interpret their two primary sources, the Qurʾān and the Sunna, just as these versions have no relevance to millions of other human beings who believe in a God Who created all things, even as they differ in their understanding of God as well in His role in the creation and propagation of life on Earth. Since no Muslim can subscribe to that hard variation of the theory without simultaneously annulling his or her faith, there is no point in discussing it from an Islamic perspective, except for purposes beyond the scope of the present study.

27. For a summary of this enduring confusion, James G. Lennox, “Darwinism and New-Darwinism” in Sahotra Sarkar and Anya Plutynksi, *A Companion to the Philosophy of Biology* (London: Blackwell, 2008), §5.4, 92-94.

28. There is no scientific consensus on what a species is, how many species there are—estimates differ by millions—and at which stage of its existence one living organism can be said to have changed from one species into another. All that is known is vague and utterly “unscientific” if the term “scientific” means reliable, reproducible and verifiable knowledge. The total number of species are estimated to be between the range of seven and one hundred million!

Once trimmed, what remains to be examined is the version of the theory of evolution which “smuggle[s] God in by the back door,” as Richard Dawkins has famously (or notoriously) called it.²⁹ This version, which first originated in Christian theological circles, was adopted by some influential Muslim scholars during the nineteenth century while they lived under political and intellectual colonization. It was given support by strained Qur’ānic exegetes which rested on nothing but personal opinions of the exegetes, and was given a historical dimension by later Muslim thinkers by a backward reading of modern evolutionary biology into such heterogeneous material as Rūmī’s poetry, al-Jāhīz’s satires, Ibn Miskawayh’s moral and philosophical treatises.

Within the range of the Muslim acceptance of evolution, a significant distinction is often made by many to exclude human beings from the larger evolutionary process through an illogical and arbitrarily process, which makes human beings a “special case of creation” purely on theological grounds and in complete rejection of the “scientific evidence” supplied by evolutionists whereas the same “scientific evidence” is considered acceptable in all other cases with the additional provision that all evolutionary processes must be taken as God’s way of creation and that all causal relations, whether based on the struggle to survive or not, must also be somehow mapped to God.

Thus reduced, what remains to be examined from an Islamic perspective are the following two aspects of evolutionary biology:

1. Various versions of Theistic Evolution which, ultimately, rest on the argument that evolution is God’s method of creation.
2. The special provision made by those who accept Theistic Evolution but contend that somehow humans have to be excluded from the general schema of evolution which is based on the

29. “At first sight there is an important distinction to be made between what might be called ‘instantaneous creation’ and ‘guided evolution’. Modern theologians of any sophistication have given up believing in instantaneous creation. The evidence for some sort of evolution has become too overwhelming. But many theologians who call themselves evolutionists... smuggle God in by the back door: they allow him some sort of supervisory role over the course that evolution has taken, either influencing key moments in evolutionary history (especially, of course, human evolutionary history), or even meddling more comprehensively in the day-to-day events that add up to evolutionary change. We cannot disprove beliefs like these, especially if it is assumed that God took care that his interventions always closely mimicked what would be expected from evolution by natural selection. All that we can say about such beliefs is, firstly, that they are superfluous and, secondly, that they assume the existence of the main thing we want to explain, namely organized complexity.” Richard Dawkins, *The Blind Watchmaker* (New York: W. W. Norton & Company, Inc.), 316.

fundamental premise that humans and modern apes—in fact all forms of life—share a common ancestor.



Theistic Evolution in an Islamic Mirror

It is important to state that the theory of evolution is not concerned with how life on Earth originated; the origin of life is explained in natural science by abiogenesis or biopoesis, which acts as the other side of the theory of evolution by proposing the ways in which life could have arisen out of inanimate matter. All versions of the theory of evolution are concerned with how already existing life evolves and changes into new or different species over time and how universe itself evolved over time when the term is used in evolutionary cosmogony. Furthermore, abiogenesis, like evolution, also rests on pre-existing matter, in this case, amino acids, the so-called “building blocks of life,” which are said to have organized themselves under the right conditions into living organic molecules. Darwin certainly dabbled with ideas concerning abiogenesis and in his now famous letter to Joseph Dalton Hooker, written on February 1, 1871, he said: “It is often said that all the conditions for the first production of a living organism are now present, which could ever have been present. But if (and oh! what a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, & c., present, that a proteine compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed.”³⁰

But by the time Darwin wrote his *On the Origin of Species*, the theory of biogenesis (which stipulated that there is no spontaneous generation; rather, one life form arises out of another), had become generally accepted, even though this theory left a vacuum of scientific thought on the question of how life had first arisen. But that was not Darwin’s focus; he was more concerned with investigating how species evolve over time. The secret of his success lies in furnishing a theory which apparently explained this process and which Darwin described in detail even in the title of his work: *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. Darwin suggested two main processes through which evolution takes place: natural selection and chance. Natural selection is the process through which certain traits that aid survival and reproduction are favored over traits that hinder survival and reproduction. Natural selection takes place as only a

30. Francis Darwin (ed.), *The life and letters of Charles Darwin, including an autobiographical chapter*, 3 volumes (London: John Murray, 1887), vol. 3, p. 18.

few individuals in each generation survive whereas organisms produce many more offspring than their environment can support. Thus, over many generations, mutations produce successive, small, random changes in traits, which are then filtered by natural selection and beneficial changes are generally retained. This adaptation makes an organism more suited to its environment. The second cause of evolution is genetic drift, which comes from the role that chance plays in whether a trait will be passed on to the next generation or not.

During the century after Darwin, natural selection combined with Mendelian inheritance and evolved into the modern evolutionary synthesis, which explains the history and diversity of life on Earth. What theistic evolutionists did to evolutionary biology was simple enough: they accepted all the postulates and findings based on atheistic evolutionary theories and inserted God into them, thus making their faith compatible with science. At present almost all major Christian denominations, including the Catholic Church and the Eastern Orthodox Church, and a very large number of reform Jews accept theistic evolution by reinterpreting their scriptures' accounts of creation as allegorical stories.

Muslims who wanted to join the boat did exactly the same, with total disregard to the nature of the substantial differences that exist between the Bible and the Qurʾān as well as by reframing the Prophetic tradition and fourteen hundred years of Islamic intellectual tradition—which itself furnishes highly integrated explanations of the various life forms which exist on Earth based on Qurʾānic descriptions, Prophetic traditions, exegetical works including those going back to the Companions of the Prophet, and reflections of Muslim scholars, scientists, and philosophers. In a few cases, attempts have been made by some Muslims to buttress their so-called “Islamic theistic evolution” by finding antecedents through selective and inaccurate reading of source material. It is not the purpose of the present study to criticize individual formulations of Muslim theistic evolutionists such as Muhammad Abdul, Seyyed Ahmad Khan, Abdullah Yusuf Ali, Fazlur Rahman, Ayatollah Murtaza Mutahhari, Ayatollah Behishti, Javad Bahonar, Maurice Bucaille, Muhammad Hamidullah, Muhammad Iqbal, and others,³¹ all of whom were non-scientists and all of whom lacked training in philosophy of science; rather, the purpose here is to reiterate Islamic perspectives on the basis of relevant Qurʾānic data, Prophetic traditions and intellectual history rooted in these two primary sources of Islam.

Before setting out to say anything on the basis of the primary sources of

31. For a critique of the views of some these proponents of theistic evolution, see Shaikh Abdul Mabud, *Theory of Evolution: An Assessment from the Islamic Point of View* (Cambridge: The Islamic Academy, 1991).

Islam it must be stated that explanations based on these sources cannot be disregarded by labeling them “creationism” at par with anti-evolutionist Christian creationists; the Islamic view thus obtained is instead a fully integrated interpretive explanation of the entire range of the questions concerning the origin, propagation, and culmination of life, which takes into consideration diversity of life forms, their interrelatedness, their mutual reliance on each other, their role in the larger schema of the existence of the entire created order which is purposeful, directed, finite in temporal terms, and which is destined to ultimately recoil toward its origin—God Himself, Who is *the First and the Last (al-Awwal wal-Ākhir)* and to Whom belongs everything that is in *Heavens and the Earth*, as the Qurʾān asserts repeatedly.³²

Construction of an Islamic Mirror: Qurʾānic Data on Cosmogony

Since evolutionary biology rests on an evolutionary understanding of cosmogony, it must be said at the outset that the dominant view in Islamic thought with regard to the creation of the cosmos is that of creation *ex nihilo*, both of the cosmos and time, both created by the Divine command, *Kun* (“Be”), at a finite moment in the past through as an act of Divine will.³³ This should not be confused with the cosmological theories such as the Big Bang now current in scientific literature, because these theories refer to the early development of the universe, mostly from an extremely hot and dense state which is supposed to have existed at some finite time in the past. However, as soon as these theories begin to attempt to pinpoint that finite time at which the initial condition existed they break down, because they fall beyond Planck’s time.³⁴ Thus, current estimates of the initial condition being around 13.3 to 13.9 billion years ago have no experimental proof; this is also the case for all other theories

32. Q 2:284; 3:109; 3:129; 3:180; 3:189; 4:126; 4:132; 4:181; 5:18; 5:40 and many other verses.

33. This is dominant, but certainly not the only view as Muslim philosophers also argued for a pre-eternal world under the influence of Aristotle. The classical refutation of this view is by al-Ghazālī, who devoted the first and the longest of the twenty discussions of his *Tahāfut al-falāsifa* to the question and condemned it as utterly misguided. Abū Ḥāmid al-Ghazālī, *Tahāfut al-falāsifa*, trans. Michael E. Marmura as *The Incoherence of the Philosophers* (Provo, Utah: Brigham Young University Press, 2000), 12-46.

34. At Planck’s time (10^{-43} s), which is the time a photon takes for traveling at the speed of light to cross a distance equal to the Planck length (1.616252×10^{-35} meters), the laws of physics lose experimental support and science becomes speculative. Scientists then rely on thought experiments, which results in conjunctures (*zamm*), lacking any experimental or even theoretical support.

concerning the origin of the cosmos.³⁵ In the absence of any experimental data and reasonable theory, the only real recourse left to humanity to understand how this marvelous cosmos came into existence is through propositions beyond the need of experimental proof.

In the case of Islam, these beliefs are enshrined in a firm text—the Qurʾān—which has not been altered in any way over the course of last fourteen hundred years and which is regarded by all Muslims as the very Word of God. Thus, the main task for understanding Qurʾānic data is not of ascertaining the veracity of the text but that of its interpretation, specifically of those pericopes that describe the process of creation in graphic terms. This interpretation is further aided by the Prophetic tradition and fourteen hundred years of interpretive tradition anchored in hundreds of exegetical works, leaving little room for the kind of debates which have emerged in Christianity about the meanings of the Biblical text on the subject of creation. Furthermore, the Arabic of the Qurʾān is clear (*mubīn*), and the “days” mentioned in the following verses have always been understood as relating to ‘God’s time’ rather than human time—hence, there is no resonance between the Islamic discourse on these verses and the debates which arose in Christianity regarding literal versus allegorical understandings of the six days mentioned in the Book of Genesis (Gen. 1:1-2). Furthermore, the Qurʾān mentions more than one span of time for its “day”—1000 years in Q 22:47; 50,000 years in Q 70:4. (The Biblical account too includes a seventh day of rest (Gen. 1:3), which is completely absent from the Qurʾān that instead states the six days of creation neither tired nor wearied Him (*wa mā massanā min lughūb*, Q 50:38; *wa-lam yaʿya*, Q 46:33).)

The Creation Theme of the Qurʾān

The creation theme of the Qurʾān encompasses all realms of existence, from the metaphysical to the material world, but since the topic under discussion deals exclusively with the material universe, the following survey is limited to the Qurʾānic description of the creation of the heavens and the Earth in their

35. These are not theories in the strict sense of the term but are speculations which bear the name of a scientist or are marketed as science. Such publications sell in huge quantities more so through marketing techniques than because of any inherent value of their content. Most general readers who buy these titles are duped by advertising which assures them that they are reading scientific facts and theories. Unless interested in science fiction, most rational human beings endowed with basic common sense would be appalled by titles such as *Before the Big Bang*, *The First Few Microseconds*, and *The Very First Light: The True Inside Story of the Scientific Journey Back to the Dawn of the Universe*, but these continue to appear in the name of science.

physical sense. The Qurʾān describes this creation as taking place in six days (Q 7:54; 10:3; 11:7; 25:59; 32:4; 50:38; 57:4).

The Earth was created in two days (41:9) and it received its provisions in four days (41:11): *Say, 'Do you disbelieve in Him and set up equals to Him Who created the Earth in two days? He is the Lord of all the worlds.'* [Having created the Earth] *He placed solid mountains on it, blessed it, provided it with sustenance in proportion to the needs of all who seek [sustenance]—all in four days. Then He turned to the heaven while it was smoke. He said to it and the Earth, 'Come [into being], willingly or unwillingly.'* They said, *'we come [into being] in willing obeisance.'* Then He made them seven heavens in two days and revealed to each heaven its law. And We adorned the lower heaven with lamps, and firmly secured it. All this is the firm plan of the All-Mighty, the All-Knowing.

Elsewhere the Qurʾān refers to Allah as *the Originator of the heavens and the earth (badiʿus-samāwāti wal-ard)* whenever He decrees a matter, He [merely] says: *'Be'*, and it is (Q 2:117). Furthermore, most scholars agree that there is no time lapse between the issuing of a Divine command and its execution: *And Our Command consists of only one word which is carried out in the twinkling of an eye* (Q 54:50).

The questions to be explored include:

1. How can one understand this Qurʾānic narrative of creation of the universe?
1. Based on the normative interpretive tradition, how have Muslim scholars understood Qurʾānic timeframes?
1. Does this Qurʾānic description agree with the prevalent scientific view as postulated in Big Bang Cosmology?

These will be explored in the next installment, inshallah, along with other major issues related to evolutionary biology.

(To be Continued)