Nidhal Guessoum's Reconciliation of Islam and Science

with John Hedley Brooke, "Reconciling Religious Tradition and Modern Science"; Salman Hameed, "Walking the Tightrope of the Science and Religion Boundary"; Rana Dajani, "Evolution and Islam's Quantum Question"; Zainal Abidin Bagir, "Practice and the Agenda of 'Islam and Science' "; and Nidhal Guessoum, "Issues and Agendas of Islam and Science"

EVOLUTION AND ISLAM'S QUANTUM QUESTION

by Rana Dajani

Abstract. The apparent contradictory relationship between Islam and evolution is important because it has been cited as an example of contradiction between religion and science by both thinkers in the West and Muslims. Muslim scholars and scientists mainly disagree with evolution's legitimacy. *Islam's Quantum Question* by Nidhal Guessoum is a unique narrative providing in one of its first chapters an overview of evolution from neo-Darwinists to creationists, including the views of scholars throughout Islamic history. Guessoum then proceeds to advocate for evolution. Drawing from Nidhal Guessoum's work, I highlight the reasons why there is an apparent contradiction between Islam and science—and, in particular, Islam and evolution—which include lack of freedom of thought and misinterpretation of the Qur'an. In doing so, I suggest setting the stage for a new Einsteinian theory of evolution, which involves the dimension of time and human cognition.

Keywords: evolution; freedom of thought; Nidhal Guessoum; history; human cognition; Islam; misinterpretation; science; time

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A number of questions arise while reading *Islam's Quantum Question*. How is it different from other books of a similar genre that try to explore the intersection of science and religion? What does it offer contemporary religious scholars and scientists, who may not always be in dialogue? To begin, *Islam's Quantum Question* is unique in that it addresses the issue of science from an Islamic perspective, one that isn't prevalent in Western, let alone English, scientific discourse. There are numerous books in English that address controversial issues in modern science, but all do so from a Western point of view; very few address controversial issues in modern

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[*Zygon*, vol. 47, no. 2 (June 2012)]
 ISSN 0591-2385 *www.zygonjournal.org*

science in the context of Islam. In addressing these issues, the author calls upon not the background of a religious scholar or historian, but as a Muslim scientist. As such, the book is rare in that it focuses not on the history, philosophy, and practice of science in Islam, but on contemporary intersections of Islam and science. When the author does review the other religious positions on science, he does so in a fair, unbiased manner.

Muslim scientists are reluctant to tackle controversial issues in science and leave it to the religious scholars to deal with public opinion. This results in a misguided understanding of science. Guessoum is one of the rare Muslim scientists who has taken the bull by the horns and addressed these issues without fear.

His succinct book calls upon experience in ways that are otherwise only presented in online forums. As a result, its writing is accessible, and I would recommend the book to Muslims interested in science and philosophy and to non-Muslims interested in Islam and philosophy. Moreover, in order for it to reach a wider audience in the Arab world, I recommend its translation into Arabic, as well as using it as a reference in courses interested in the intersection of science and Islam. In his presentation, Guessoum addresses the reader's intellect and leaves it to him or her to draw conclusions concerning science and religion.

Overview

The book is divided into three parts. The first part addresses the fundamentals of Islam as a religion and philosophy. It goes into detail about Allah/God, the Qur'an, and their relationship with science. The book gives a brief introduction to the philosophy of science, comparing, and contrasting scholars' views from different eras and religions. The author proceeds to focus specifically on the Qur'an's role in science. He argues for the idea that there is no opposition between Qur'an and science. He writes:

> While the Qur'an cannot be turned into an encyclopedia of any sort, least of all of science, one must keep it in mind the fact that if the Qur'an is to be taken seriously and respectfully, one must uphold the Rushdian (Averroes's) principle of no-possible-conflict (between the word of God and the work of God) and his hermeneutical prescription. In practice this principle can be turned into a no-objection or no-opposition approach, whereby one can convince the Muslim public of a given idea (say the theory of biological evolution), not by proving that it can be found in the Qur'an but rather by showing that at least one intelligent reading and interpretation of various passages of the Holy book is fully consistent with that theory. (174–75).

The author then talks about aspects of the science enterprise, arguing that adopting a theistic approach toward science does not demolish science—a very important point for Muslims, who assume science to be purely materialistic, and for non-Muslims, who believe that a theistic

approach demolishes science. The author then presents the various opinions of Muslim scholars toward science and religion both historically and contemporaneously. Such a presentation encourages freedom of thinking, which is much needed in our part of the world. Arabic speaking scholars/philosophers are rare, especially in modern times. The second part addresses various controversial issues in science from an Islamic perspective. These issues include cosmology, design, the anthropic principle, and evolution. The third part is a perspective on the future of Islam and science. The author also briefly discusses miracles, prayers, and divine action in terms of how to explain them and what they are from a scientific point of view, presenting various interpretations from various religions.

I propose that miracles are observations based on natural phenomenon that don't have an explanation within the context of the science we know today but that may be explained later with the advancement of science. I like to cite the example of certain diseases that were considered to be caused by bad spirits in history, and later on, were proven to be bacteria or viruses. Another example is psychiatric diseases such as schizophrenia, which is still considered to be evidence of genuine mystical experience in some parts of the world, although science has shown that it is an imbalance of neurotransmitters in the brain. Humans tend to explain phenomenon they do not understand in metaphysical terms.

The author ends with the most important take-home message, which is the importance of educating Muslims in the subjects of philosophy of science and history. No such courses are taught at schools or universities in the Arab world. He writes:

> It is very sad and quite astounding that practically no philosophy of science is taught in schools and universities in the Arab-Muslim world, except perhaps in departments (e.g., philosophy) which cannot ignore such a topic. But the fact remains that none of the names and schools of thought that I have presented and engaged . . . are known to any Arab-Muslim students. (341).

Guessoum states that this is why there is so much ignorance. He writes:

> This is an extremely serious situation, for this in my view is the essential reason for the existence of a very skewed understanding of the relation between science and religion generally and Islam in particular, among most Muslims. This is also the reason why thousands of Muslims scientists are in fact technicians who are competent in some narrow area but have no knowledge or understanding of the bigger picture; this is also why they very often adopt traditional, or even irrational views on most issues, from Qur'anic healing to *Ijaz*. . . . I strongly believe that the main remedy to many of the ills that plague the Arab-Muslim world in the realm of science is the introduction of serious courses on the philosophy of science. (341–42).

He also explicitly describes how Muslim views on the history of science in Islam are extremist on either side as follows:

> I wanted to highlight . . . a serious problem we Muslims tend to have in dealing with our history, from its scientific components to its theological and political elements. On this issue writers . . . tend to be extremists who either describe the classical era as an extraordinary golden age of major discoveries, important innovations, and methodological explorations or dismiss the whole historical narrative we find in our books as a large myth constructed to make Muslims feel good about their heritage and thus believe that their culture and religion have indeed been—and thus can still be—capable of producing a great civilization, complete with science and technology. (343).

Adopting a factual reality of what the Islamic civilization was in its bad and good releases the Muslims from dreams and disillusions of perfection to a reality that we can create our world, our future. We may err, but that is expected. We should not stop working and thinking for fear of making mistakes. Muslim scholars, unfortunately, have in recent history adopted an approach that is the opposite. They believe sincerely that preventing freedom of thinking is better for the layman—a philosophy that is very far from the teachings of Islam, which calls for observation and thinking to reach the truth. Prophet Mohammad said, "When a judge gives judgment and strives to know a ruling (*ijtahada*) and is correct, he has two rewards. If he gives judgment and strives to know a ruling, but is wrong, he has one reward" (*Bukhari* (b00), 9.133: 7352 (a2)).

One must mention in this context the third source of jurisprudence after the Quran and hadith; *ijtehad*, where every adequately qualified jurist had the right to exercise original thinking, mainly *ra'y* (personal judgment) and *qiyas* (analogical reasoning). *Ijtehad* has not been used for a long time and must now be encouraged specifically in the light of the changes in the political arena in various Arab countries.

Also in this context I would like to call for the formation of committees to deal with controversial issues in science and Islam. These committees should include scientists, theologians, Arabic language experts, and all stakeholders in the matter to remove the monopoly of religion on these scientific matters. Guessoum says in his book:

> The next important issue is the need to engage the Islamic scholars in a serious dialogue and convince them that scientists have much to say on topics that have for too long remained the monopoly of the religious scholars and their discourse. While there is no doubt in people's minds that human knowledge evolves and grows, it is often understood that religions, especially Islam, are absolute, immutable, and transcendent principles, which are set in rigid frames of reference. But we know today that religions—and Islam is no exception—cannot afford to adopt a stationary attitude, lest they find themselves clashing with and overrun by modern knowledge, and religious principles appear more and more quaint and obsolete. (343–44).

We have indeed started something of that sort in Jordan and presented our findings at the "Belief in Dialogue" conference in June 2011 in Sharjah UAE. Recent advances in biomedical science and technology have resulted in a revolution in medicine—namely, stem cell–based therapy.

The sources of human stem cells, together with advances in potential therapeutic and clinical applications, result in major ethical issues and challenges for regulatory bodies. The first international guidelines on human embryonic stem cell research were released in 2008, as reported by Hyun and colleagues. People in Muslim countries consider legislation and the principles of bioethics to be based on sacred sources and jurisprudence. The objective of science is to explore the secrets and laws of nature, which were set by God. Islam has always encouraged people to contemplate, and explore, new horizons. Stem cell research is one of those new horizons, and Islam does not object to this exploration. We have established a committee that includes scientists, physicians, Islamic scholars, and other stakeholders. This committee has investigated and debated views about stem cell research that include sourcing (procurement and derivation), manipulation and transplantation, and related social and ethical issues. All discussions so far have indicated that stem cell research is permissible in Islam as long as it is carried out with the purpose of improving human health. This matter still, however, needs to be reexamined over and over again as science advances.

Islam and Evolution

As a molecular biologist, I will focus on the issue of Islam and evolution (human and nonhuman). Evolution is a fact that cannot be denied. We see manifestations of it in the design of drugs that target the influenza virus and in antibiotic resistance of bacteria and in forced evolution exhibited in artificial breeding of various plants and animals.

In the Muslim world, when evolution is discussed, it is partnered with Darwinism and, in most cases, automatically considered heresy. The scientific theory is therefore denied, and all evidence to prove its falsehood is undertaken with a zealous approach. And anyone who says otherwise is looked upon with suspicion and suspected to be on the slippery slope to hell, as one Muslim scientist put it.

Guessoum presents this reaction to evolution with various examples in his chapter. The fact that a sound scientific theory is so vehemently denied by Muslim scientists, let alone the layperson, on the basis of belief not logic is scary because it makes one wonder what else is being denied in the name of religion and played upon by people who want to control others through ignorance and emotion. This position alienates the world of Islam from thinkers and deprives the individual Muslim of the full use of his mind. In addition, it gives a terrible representation of Islam to non-Muslims, leading them to believe that Islam is a religion that denies freedom of thinking when that is the exact opposite of the truth. Islam calls for thinking, contemplating, and using logic to reach the truth: "Behold! In the creation of the heavens and the earth, and the alternation of night and day, there are indeed Signs for men of understanding" (Qur'an 3:190). In Islam, there

is no limit to your questioning unless you question the existence of a God and that has nothing to do with evolution.

Even though evolution as a theory has different facets, and there are Darwinians and non-Darwinians, as Guessoum presents in his book, the fundamental issue is that the layperson denies and rejects the whole theory on the premise that it challenges the concept of a creator without really understanding what evolution is. This issue is very important and becomes more so when one tries to analyze why Muslims have taken this position toward evolution. Guessoum does go into analyzing why, although he does not list the reasons. He presents examples of reactions of various Muslim scientists and scholars toward evolution from the time Darwin published his theory up until today.

From my perspective, there are many reasons for the position that Muslims have taken against evolution:

(1) *Ignorance:* In the past three centuries education has waned in the Muslim world primarily as a result of Western colonialism, cultural imperialism, the corruption of the Ottoman Empire in the late nineteenth century, and a lack of focus on education in the Arab-Muslim world.

(2) *Lack of scholars:* Another effect of colonialism and the resultant lack of political freedom was the loss of autonomy for the general public. The lack of freedom of thought and opinion resulted in less freedom in terms of thinking about and pursuing, scientific projects. From another perspective, the turning away from Islam as it was originally practiced reduced the practice of education as a form of enlightenment, which is primary in Islam. Inevitably, science suffered because of this.

Indeed, in Islam evolutionary, theory is not a problem. As Guessoum has stated, a number of scholars in early Islamic civilization had proposed variations of the theory of evolution and were not considered a threat to religion. The problem was created when Islamic scholars out of ignorance adopted the stance of certain Christian churches against evolution, which was necessarily a response to the particular atheistic understanding of evolution common in Europe and the United States. For some people in the West, if you believe in evolution, you are an atheist, and if you don't, you are a believer. That is not the case in Islam. I believe the contradiction arose with the church and its claims of the age of the Earth and the creation theory.

(3) *Language:* Darwin was not translated into Arabic until 1964. Usage of different definitions confused people. Creationism in Islam is seen in a different context than it is in the West. For

Muslims, "Creationism" means that there is a creator who is responsible for making the universe and all that is in it. That does not deny evolution and the presence of natural selection. The only clash would be with atheists who believe that there is no divine being that started it all. But this issue is not the point of discussion in the argument. The whole argument is about whether all creatures were created instantaneously from a human perspective or through a long process controlled by laws. Guessoum alluded to this.

(4) *Misinterpretation of the religious texts:* We are in need of Arabic-language experts to revisit interpretation of religious texts in the light of advances in science because of the multilayered meaning that Guessoum alluded to in his book. An interesting example is the interpretation of the word "*Ahsan* أحسن."

The verses that from my perspective support evolution use the word "*Ahsan* أحسن":

(i) Al-Sajdeh verse 7: "He Who has made everything which He has created (*Ahsan*) *most good*: He began the creation of man with (nothing more than) clay" (Quran 32:7)
(ii) Al-Teen verse 4: "We have indeed created man in the (*Ahsan*) *best* of moulds" (Quran 95:4)

In these two verses, Allah states that he created all creatures and man in the (*Ahsan* أحسن) way. He uses the word *Ahsan*, meaning "most fit," not the word (*Afdal* أفضل), which means "the best." Although, as can be seen from the translation, the word (*Ahsan* أحسن) has been translated as "most good" in the first verse and as "the best" in the second verse. Both translations hold a totally different meaning in this context. In the *Sajdeh* verse, Allah states that he created all organisms to be the best fit and even man was created from mud, which is the origin of all creatures. In the verse in *Al teen*, Allah states that man was created to be fit for his environment. To me, this supports evolution and is an example of misinterpretation of the meaning of words in religious texts for lack of the scientific knowledge on the issue by the interpreters.

(5) *Philosophy is not taught in the Arab Muslim world as a subject in schools or universities, as Guessoum observed in his book:* One must not be confused with the new trend in the West, which proposes that the reason the Muslim world is not developed is because Islam hinders scientific progress. This faulty proposition is the result of a misunderstanding of Islam on the part of the West. The advancements that occurred during the Golden Age of

Islamic civilization are clear indictors of how such a proposition is false. As such, Islam in itself does not hinder scientific progress, whereas the misuse of Islam, as a result of ignorance, made way for Muslims to hinder scientific progress. Ultimately, such misuse is a product of ignorance of religion.

How is this Book's Presentation of Evolution Specifically Different?

Guessoum presents the theory of evolution and then proceeds to list the evidence that supports it from the point of view of fossil evidence, comparative anatomy, and the universality of biochemical organization as well as genetic evidence. His presentation of such evidence is simple and gives sufficient context in case the reader is unfamiliar with the concept, ultimately making way for a lucid argument for how evolution is logically valid, following which he discusses microevolution and Darwinian evolution.

The book is unprecedented in that it dedicates a chapter to explaining the scientific logic of evolution, from a Muslim perspective—a perspective that has usually dedicated many more chapters to disproving or castigating evolution. The author also presents the different schools of evolutionary theory from neo-Darwinism to non-Darwinism, as well as the arguments of various Muslim scholars against evolution. In addition, he presents historical evidence that suggests a theory similar to evolution was proposed as an explanation for the variety of species in the history of Islamic civilization. This suggestion is new, as its historical narration has not been mentioned before in modern scientific or religious discourse, whether in the West or in Islamic countries. In this context, I would like to mention Iyad A. Hijazi and Sylvia J. Nemmers, who have developed new interpretations of Qur'anic verses in support of human evolution, going as far as to suggest that the Qur'an itself supports the proposition the humans are still evolving.

I might also add that we may find an evolutionary process in terms of the brain's comprehension of the concept of evolution. You cannot, for example, spring upon a child the concept of calculus without first taking the child step by step through the fundamentals of arithmetic. Similarly, Guessoum and Jean Staune talk about how Newton's theories could explain some but not all natural phenomena until Einstein came along, who suggested a more comprehensive approach. Similarly, in the case of Darwin, the theory of evolution provides an explanation for most phenomena, but there are some phenomena that don't exactly fit the theory of evolution. These anomalies require a novel, progressive scientific development, not unlike Einstein's intervention in physics. The various theories of evolution seek to explain various facets of the process of evolution, but there is not yet one that fully grasps or explains the whole truth. This is not the fault

of human cognition. Human cognition needs to evolve so to speak to be able to grasp the concepts of evolution as they develop.

The author thus encourages the offering of new approaches, new interpretations, an Einstein intervention in the theory of evolution. In doing so, he points to Staune's (2007) chapter, "Seeking Biology's Einstein—Urgent!" in his book *Does Our Existence Have a Meaning? A Scientific and Philosophical Investigation.*

In this context, I would like to respond to Guessoum's book with a new way of looking at evolution. The issue of time, I argue, is the most prominent obstacle for the acceptance of evolution from religious perspectives. This is so because of an ostensible inability to reconcile two things: the belief that God is the creator as stated in the religious text—such as: "Verily, when He intends a thing, His Command is, 'be,' and it is!" Qur'an (36:82)—and that Darwinian evolution postulates that there is one origin for all living creatures and that their evolution took millions of years. One must note here that Darwin never discussed or questioned the origin of life. He only discussed how different species evolved from one origin. Darwin stated in the last paragraph of the *Origin of the Species:*

> There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.

This also speaks to a misunderstanding in the Muslim context. Muslims are led to believe that Darwin denied the presence of a God because he attributed the development of species to natural selection. Guessoum alludes to this, relating how Asa Gray, a Harvard professor teaching in 1857, saw in Darwin's theory "a beautiful description of how God brought about creatures in the world" (295). In this context, one must also mention that the nonscientist Muslims in the Arab world, for the most part, are not avid readers. They hear the proclamations of a religious scholar and take it without verification. Nearly all those who deny evolution and claim that Darwin is a heretic have never read his book, as reported in *Science* by Hamid (2008).

Science states that the creation of the universe took billions of years. Muslim scholars do not claim that such a fact contradicts the Qur'an. However, when science shows that human life and all creatures took millions of year to evolve, Muslim scholars object. They misinterpret the term *khalaq*—meaning "creation"—in the Qur'an to mean instantaneous creation. My interpretation is that time does not exist for God: the term *khalaq* has no temporal context. Therefore, if we believe that the universe took time to evolve, why don't we believe that life took time to evolve? God exists outside of dimensions. He is not limited by them. In this context,

let us focus specifically on the dimension of time. We exist in a world that is limited by time. We cannot reverse time, because we are limited by our comprehension as a direct result of our biology. We can only think in terms of time. We cannot comprehend that there is no yesterday, today, and tomorrow for God, while for God it is all one.

We are limited in our biology and thinking. We cannot, for example, comprehend the presence of a fifth dimension because of the limitation in our biology. Carl Sagan (1985), in his book *Cosmos*, gave a telling example for the comprehension of a fifth dimension. Sagan asks us to imagine being an ant: ants can only comprehend two dimensions. They crawl around, and if they encounter a vertical wall, they just keep crawling and fall off because of gravity. However, they keep trying because they do not realize they are going into another dimension. Sagan goes on asking us to imagine that ants live in a town of circles. The ant goes into its home, which is a flat circle; no one else is in the ant's house. Now imagine a sphere (a three-dimensional object) bouncing into the ant's circle. What does the ant see? It suddenly sees a circle appearing in its home and growing at an alarming rate and then decreasing in size and finally disappearing. To the ant, such an occurrence seems impossible! For the ant, the natural rules it follows cannot explain it. As humans, we are also limited by our biology and thus cannot reconcile the religious beliefs with reality. As science advances, our comprehension increases, and so our interpretation of the texts must change. However, we must always remind ourselves that we are limited by our biology, just like ants. This leads to the conclusion that any phenomenon we observe has a scientific explanation, including miracles. We simply may not have uncovered the science or our biology limits our ability to comprehend.

Conclusion

Finally, as Mehdi Golshani (2003) said, "The belief in an evolutionary mechanism for the emergence of species does not negate the idea of Divine creation" (5). As Guessoum concludes:

> Finally, evolution is highly important in the science-religion/Islam debates, for it is there that one sees the clear difference between those who adopt a simplistic, literalistic reading of the scriptures (in all areas of life and thought) and those who accept the application of hermeneutics and the principle of multiple, multilayered reading of the Texts. (324)

I instruct my students when I teach evolution that they don't have to agree with what I say but to at least use their brain and intelligence to examine the data, to analyze, and whatever they come up with is fine for themselves. I encourage them to trust their intuition and not to accept anything that does not make sense, even though it may seem to contradict their beliefs. I tell them not to be scared, for, if they are sincere in seeking

the truth, they will find it. It will either reemphasize what they already know, or open new doors for exploration.

Islam is a spiritual guide to life. It teaches us how to live in harmony with ourselves, fellow humans, and the world. Islam asks us to use our intelligence to explore the world around us. Islam calls for using scientific methodology and logic in our approach to understanding the world. The Qur'an contains verses that describe worldly phenomenon. These verses are presented as evidence of the elegance and simplicity of creation. The Qur'an is not a book of scientific facts. If there happens to be an apparent contradiction between a verse in the Qur'an and a scientific fact, one is advised to either revise one's scientific conclusion (which is never absolute) or to revise the interpretation of the Qur'anic verse. It is humans who interpret verses, and we are limited by the scientific knowledge of our era. I believe, therefore, that our encounter with an ostensible conflict between Islam and science is an opportunity for harmony.

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