SCIENTIFIC EXEGESIS OF THE QUR'ĀN— A VIABLE PROJECT?

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A number of modern Muslim writers see the Qur'ān as containing information or knowledge of a scientific nature. They have, accordingly, argued for the viability of what is called *tafsīr ʿilmī*, or scientific exegesis of the Qur'ān. This paper presents and analyzes the case for and the case against *tafsīr ʿilmī*. The principal conclusion reached is that, while the case for such *tafsīr* is, at present, rather weak, a credible *tafsīr ʿilmī* may come into existence if it is authentically anchored in the larger Islamic tradition.

***Keywords*:** Scientific exegesis of the Qur'ān; *tafsīr*; history of scientific *tafāsīr*; al-Ghazālī, al-Suyuṭī, al-Rāzī; science and religion; revelation.

Introduction

Historically, several approaches in the field of *tafsīr* can be said to be well established. *Tafsīr riwā'ī* takes transmitted report (*riwāyah*) as its staple; *tafsīr kalāmī* focuses on theological issues; *tafsīr fiqhī* deals with legal matters; *tafsīr naḥwī* discusses issues of grammar; and *tafsīr adabī* treats matters of language and style. But while certain trends in the classical Islamic tradition can be termed scientific or *ʿilmī*, and while certain prominent Muslim scholars—like Abū Ḥāmid al-Ghazālī (d. 1111), Fakhr al-Dīn al-Rāzī (d. 1209), and Jalāl al-Dīn al-Suyūṭī (d. 1505)—may be cited as supporting the idea of scientific exegesis of the Qur'ān, *tafsīr ʿilmī* is obviously not a historically well established area; only in modern times has a relatively sustained attempt been made to establish it as an independent discipline, on a par with other types of *tafsīr*. A spate of works in several languages has appeared, and continues to appear, attempting to prove that the Qur'ān contains

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information or knowledge of a scientific nature—"scientific" in the sense in which the word is used primarily in the domain of natural sciences. These works range from general statements of the nature and scope of *tafsīr ʿilmī* to treatments of individual scientific subjects in light of the Qurʾān.[1]

The Case for Scientific Exegesis of the Qurʾān

The historical absence of a well-defined field of *tafsīr ʿilmī* would seem to cast suspicion on the project that such *tafsīr* represents, for such *tafsīr*, one is tempted to think, lacks the sanction of tradition. A four-fold response may address such suspicion.

1. As noted above, *tafsīr ʿilmī* is not completely unattested in the classical period of Islam.
2. Knowledge develops in response to real and concrete needs. *Tafsīr kalāmī*, for example, arose to meet the need to come to grips with serious theological issues. Today, the dominance of science and the scientific worldview would seem to encourage, even necessitate, the cultivation of *tafsīr ʿilmī*.
3. The Qurʾān calls itself a book of guidance (*hudā*), and it is safe to assert that the phrase "Qurʾan-as-*hudā*" aptly describes the essential character of the Islamic scripture. To limit the range of Qurʾānic *hudā* to certain types of guidance would be arbitrary, a more reasonable view being that the Qurʾān contains *hudā* of all types, not excluding scientific *hudā*. Arguably, taking the Qurʾān as a source of, for example, legal knowledge represents only one

1. Some of these works are: Ḥasan Ḥāmid ʿAṭiyyah, *Khalaqa s-Samāwāti wa-l-Arḍa fi Sittati Ayyāmin fi l-ʿIlmi wa-l-Qurʾān* (Tunis: Nashr wa-Tawziʿ Muʾassasat ʿAbd al-Karīm b. ʿAbdallāh, 1992); Mohammed Gamal El Din El-Fandy, *Why I am a Believer*, trans. from the Arabic by Taha Omar and revised by M. G. El-Fandy (Cairo: The Supreme Council for Islamic Affairs, n.d.); Muḥammad Manṣūr Ḥasab an-Nabī, *Al-Qurʾān al-Karīm wa-l-ʿIlm al-Ḥadīth* (Cairo[?]: Al-Hayʾah al-Miṣriyyah al-ʿĀmmah li-l-Kitāb, 1991); Mūsā al-Khaṭīb, *Min Dalāʾil al-Iʿjāz al-ʿIlmī fi l-Qurʾān wa-s-Sunnah an-Nabawiyyah* (Cairo: Muʾassasat al-Khalīj al-ʿArabī li-ṭ-Ṭibāʿah wa-n-Nashr, 1415/1994); ʿAbd ar-Razzāq Nawfal, *Mina l-Āyāt al-ʿIlmiyyah* (Cairo and Beirut: Dār ash-Shurūq, 1409/1989); and Afzalur Rahman, *Qurʾanic Sciences* (London: The Muslim Schools Trust, 1981); Siddiqui, Raziuddin, *Qurʾan awr Sians* (Aligarh: Anjuman-i Taraqqi-i Urdū Hind, 1946).

of the several possible understandings of the Qurʾān, and scientific exegesis could represent another possible and equally valid understanding.[2]

4. In a number of verses, the Qurʾān draws attention to a variety of natural phenomena. It refers to the order, balance, and system that characterize the universe, to the harmonious relationship among the various sectors of nature, and to the general predictability of the world's physical phenomena (*al-Furqān*: 2; *al-Raḥmān*: 5-7; *al-Mulk*: 3). At times, it offers specific detail, as when it refers to the various stages through which the fetus passes (*al-Ḥajj*: 5; *al-Muʾminūn*: 12-14; *al-Ghāfir*: 67). Similarly, the Qurʾānic concept of *zawjān* (*Yā Sīn*: 36 and elsewhere) refers to the principle of the complementarity of opposites that appears to characterize much of existence. The many instances in the Qurʾān involving, in reference to our subject, both detail and general statement, suggest that the Qurʾān leaves wide open the possibility of scientific exegesis.

Reasons like these make the case for scientific exegesis of the Qurʾān a plausible one. What al-Ghazālī and others in the classical period attempted on a small scale has been undertaken on a larger scale in modern times. For example, the Egyptian scholar Ṭanṭāwī Jawharī (d. 1940), in his multivolume commentary on the Qurʾān[3], argues that all scientific discoveries can be shown to have been mentioned in the Islamic scripture. More recently, the French surgeon Maurice Bucaille, a convert to Islam, has achieved notoriety with his best-selling book *The Bible, the Qur'an and Science*,[4] maintaining that, unlike the Bible, the Qurʾān contains scientifically impeccable knowledge. Not only individual scholars, but also large organizations, even governments, have evinced interest in the study of the Qurʾān as a book containing scientific information and insight.

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2. Cf. Mehdi Golshani: "All sciences, whether theological or physical, are means for obtaining proximity to God, and, as long as they play this role, they are sacred." Mehdi Golshani, *The Holy Qurʾan and the Sciences of Nature* (Binghamton: Institute of Global Cultural Studies, Binghamton University, 1999), p. 5.
3. Ṭanṭāwī Jawharī, *al-Jawāhir fi Tafsīr al-Qurʾān al-Karīm al-Mushtamil ʿalā al-ʿAjāʾb*, 26 vols. (Cairo: Muṣtafā al-Bābī al-Hālabī, n.d.).
4. Maurice Bucaille, *The Bible, the Qur'an and Science* (Indianapolis: North American Trust Publications, 1978).

Thus, in several Muslim countries, special conferences and seminars on the Qurʾān and science have been held at which papers dealing with various aspects of the subject have been read. The principal conclusion reached at these meetings, as also in the Muslim literature on the subject, is that there is complete harmony between science and the Qurʾān.

The Case Against Scientific Exegesis

A common argument against *tafsīr ʿilmī* is that the Qurʾān was not meant to be a book of science. Drawing on Abū Isḥāq ash-Shāṭibī's (d. 1388) critique of *tafsīr ʿilmī*, Muḥammad Ḥusayn adh-Dhahabī remarks that the Qurʾān was sent down to serve not as a compendium of medicine, astronomy, geometry, chemistry, or necromancy, but as a book of guidance that would lead humanity out of darkness and into light.[5] A Qurʾānic dictum frequently cited in support of *tafsīr ʿilmī* is *al-Anʿām*: 38: *mā farraṭnā fi l-kitābi min shayʾin*, *We have missed nothing in the Book*. The word *farraṭa* in the verse literally means "to neglect, to overlook, to leave out of calculation." But Dhahabī says that the verse should not be interpreted to mean that the Qurʾān contains details of all types of knowledge (*annahū ḥawā kulla l-ʿulūmi jumlatan wa-tafṣīlan*), but only that it contains general principles (*uṣūl ʿāmmah*) of all those matters that human beings must need to know and act by in order to reach physical and spiritual perfection. The verse, Dhahabī adds, leaves the door open for human beings to figure out and elucidate, to the extent possible in a given age, details of different disciplines of knowledge.[6] As for the Qurʾānic verses that deal with natural and existential phenomena, they are meant to train and hone human intellectual and perceptual abilities to derive useful moral lessons from those phenomena.[7]

The concept of *tafsīr ʿilmī* is also vulnerable on the ground that science is changeable, and that it is wrong to interpret the Qurʾān in light of science, since not only scientific discoveries, but scientific paradigms, too, become outdated. A review of the literature supporting *tafsīr ʿilmī* will show that it discreetly avoids citing scientific

5. Muḥammad Ḥusayn adh-Dhahabī, *Al-Ittijāhat al-Munḥarifah fī Tafsīr al-Qurʾān al-Karīm* (Cairo: Dār al-Iʿtiṣām, 1396/1976), pp. 86–7.
6. Ibid., p. 87.
7. *lā yurādu minhu illa riyāḍatu wijdānati n-nāsi wa-tawjīhu ʿāmmatihim wa-khāṣṣatihim ilā makāni l-ʿiẓati wa-l-ʿibrati wa-laftuhum ilā āyāti qudrati llāhi wa-dalāʾili waḥdāniyyatihī*, ibid., p. 87.

findings that, say, a hundred years ago, might have been cited in elucidation of certain verses but have today become obsolete, leaving one wondering whether the scientific findings of today would be cited in scientific exegesis of the Qurʾān a hundred years from now.

Nor does the actual commentary produced in the name of *tafsīr ʿilmī* inspire much confidence. In the first place, the claims made about the range of *tafsīr ʿilmī* are rather tall. A glance at the Table of Contents in Afzalur Rahman's *Qurʾanic Sciences* shows that, according to the author, the Qurʾān deals with all the major natural and social sciences that are included in today's typical university curriculum: astronomy, physics, chemistry, botany, zoology, geology, geography, anthropology, sociology, economics, psychology. Afzalur Rahman suggests, for example, that *āyāt* such as *al-Sharḥ*: 1-3 may have contributed to the foundation of "surgical medicine and the study of anatomy in the early phase of Islamic civilisation,"[8] and that a verse like *Qāf*: 22 "might have initiated research in the science of ophthalmology among Muslim scientists."[9]

In the second place, the interpretation of the so-called "scientific" verses leaves much to be desired. One of the most frequently cited verses in support of *tafsīr ʿilmī* is *al-Anbiyā*: 30: *a-wa-lam yara lladhīna kafarū anna s-samāwāti wa-l-arḍa kānatā ratqan fa-fataqnāhumā* (*Have the disbelievers not seen that the heavens and the earth were closed up and then We split them open?*). The verse is taken to prove that the Qurʾān already prefigured the Big Bang theory. The context of the verse, however, hardly admits of such interpretation. As Amīn Aḥsan Iṣlāḥī says in his commentary on the Qurʾān, this verse, in line with those preceding and following it, furnishes proof of monotheism and resurrection. According to Iṣlāḥī, the verse draws attention to the fact, commonly observed by the Arab addressees of the Qurʾān, that even as the skies and the earth are closed up—in the sense that no rain falls from the skies and no vegetation grows from the ground—one sees that, all of a sudden, the skies open up and send down torrential rains and the earth, dead until now, is revived through the agency of rainwater and yields its treasures of vegetation. The whole phenomenon constitutes strong evidence of the possibility of the hereafter: that which was dead until yesterday becomes alive today.

8. *Qurʾanic Sciences*, p. 327.
9. Ibid., p. 328.

Furthermore, the collaboration between the sky and the earth to produce life in the form of vegetation is proof that the same one God rules over the heavens and the earth. [10]

In the third place, one has to remember that the attempt to show compatibility between scripture and science has been made by scholars in other religions as well, especially in Christianity. Christian writers have produced a large number of works in which they try to show that modern science vindicates the Bible to the last detail. Not unexpectedly, Christian writers have criticized Muslim writers' attempts to prove the claimed compatibility of the Qurʾān with science. Thus, William Campbell, in his *The Qur'an and the Bible in the Light of History and Science*[11] interprets very differently the data presented by Maurice Bucaille and reaches conclusions that support the Bible and throw doubt on the veracity of the Qurʾān. It would be interesting to make a comparative study of the methods used by Christian and Muslim writers to press scientific data into the service of their religions. At the least, however, the possibility of such diverse interpretations of the same data raises questions about the validity of the exercise to harmonize scripture and science.

A striking fact about *tafsīr ʿilmī* is that many of its proponents lack proper credentials as scholars of the Qurʾān. In fact, they usually make no apology for this "lack," and seem to think that the two most important qualifications for producing such *tafsīr* are possession of some knowledge of scientific discoveries and the ability somehow to relate these discoveries to—or rather, to "derive" these discoveries from—some Qurʾānic text. Another notable fact about *tafsīr ʿilmī* is that it is often promoted under official patronage. Both these facts are brought into relief by the conferences and seminars sponsored by governments in the Muslim world. At these meetings, which are frequently presided over by heads of state or ministers of religious affairs, "scholarly" papers are presented by bureaucrats and officials who have otherwise lived a life completely untainted by scholarship. These events are like flash floods in the desert; they neither arise out of a solid tradition nor contribute to the building of one.

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10. Amīn Aḥsan Iṣlaḥī, *Tadabbur-i Qurʾān*. 9 vols. (Lahore: Fārān Foundation, 2000), vol. 4, pp. 278-9.
11. William F. Campbell, *The Qurʾan and the Bible in the Light of History and Science* (Upper Darby, Pennsylvania: Middle East Resources, 1986).

Analysis and Comment

The foregoing has indicated my ambivalence about the viability of scientific exegesis of the Qurʾān. Despite my reservations, however, I do not think that such exegesis is impossible in principle. I say this for three reasons.

As noted above, many Qurʾānic verses make reference to phenomena that seem to have potential for "scientific" interpretation. Just as a jurist reading the Qurʾān is likely to pay more attention to its legislative verses and draw out their implications, so a biologist reading the Qurʾān can be expected to show greater interest in and study more deeply the verses that speak of, for example, the growth of the fetus in the womb. The jurist's interest, in other words, is not privileged over the biologist's.

From a linguistic standpoint, it is quite possible for a word, phrase, or statement to have more than one layer of meaning, such that one layer would make sense to one audience in one age and another layer of meaning would, without negating the first, be meaningful to another audience in a subsequent age. An example is the word *sabḥ* ("to swim, to float") in a verse like *al-Anbiyāʾ*: 33: *wa huwa lladhī khalaqa l-layla wa-n-nahāra wa-sh-shamsa wa-l-qamara kullun fī falakin yasbaḥūna* (*And He is the One Who created the night and the day, and the sun and the moon—each swimming in an orbit*). The word *yasbaḥūn* in the verse made good sense to seventh-century Arabs observing natural phenomena with the naked eye; it is equally meaningful to us in light of today's scientific findings.

It is quite possible that the suspected inviability of *tafsīr ʿilmī* may be due not so much to the project's inherent limitations but to the fact that no credible scientific exegesis of the Qurʾān has so far been produced, there being no reason why such exegesis cannot be produced in the future. After all, it took several centuries for Sufism to become integrated into the so-called mainstream Islam. Like Sufism, *tafsīr ʿilmī* may have to wait for its Ghazālī; it may eventually establish itself as a reality on the ground and those who are trying to prove its inviability may find themselves in the same position as the physician in Voltaire's story *Zadig*, who was unable to cure the abscess in the hero's eye, but who wrote a book to argue that the abscess, which subsequently healed of itself, should not have so healed.

I would like to make a few observations by way of conclusion.

1. Two motives seem to underlie the advocacy of *tafsīr ʿilmī*. The first, negative in character, can be described as the wish to demonstrate that there is no conflict between the Qurʾān and scientific findings. The second motive, positive in character, can be described as the wish to prove what is termed the Qurʾan's *iʿjāz ilmī* ("scientific inimitability")—that is, the wish to prove that the presence of verifiable scientific information in the Qurʾān will establish the Qurʾān as the Word of God, since such a book could have emanated only from a Divine source. In the end, of course, the two motives are like two sides of the same coin. I would like to say a word about each.

The project of establishing compatibility (*muwāfaqah*) between the Divine Word and scientific findings is, by definition, defensive in character. Muslim thinkers first engaged in a similar exercise in *muwāfaqah* during the Abbasid period, when they felt constrained to reconcile Greek thought with Islamic religion. The arena of discussion at that time was theology; today, it is science, but the nature of the exercise is essentially the same. The challenge that modern science initially posed to Christianity has now been posed to all religions—to the very idea of religion itself. Muslims naturally feel the force of the challenge, whether or not they understand its exact nature, and some of them think that it would be an adequate defense of Islam to demonstrate that there is no conflict between the Qurʾān and science or, going a step further, that the Qurān prefigures modern science.

As for *iʿjāz ʿilmī*, I am afraid I regard the attempts to establish it as mistaken in principle. The theme of Qurʾānic *iʿjāz* has fascinated generations of Muslim scholars and has led to the production of many works, but I suspect that the Qurʾānic challenge that those who doubt the Divine origin of the Book should produce the like of it was aimed at the Qurʾān's first, disbelieving *Arab* audience, and the failure of that audience to produce the like of the Qurʾān closed the chapter of *iʿjāz* for good, there being no need to reopen it in every subsequent age. The view that advances made in knowledge over time will bear out the Qurʾān is not contravened by the position taken in this paper—namely, that the Qurʾān cannot be held hostage to a changing science.

2. It is a curious fact that, in the early centuries which witnessed intense Muslim scientific activity, the major Qurʾān commentaries are, generally, free of references to science, whereas today, when Muslim scientific activity has declined, many Muslims have supposedly found in science an ally and a defender of the faith of Islam. Today, the

mainstay of *tafsīr ʿilmī* is modern science, which, regardless of its lineage and of the history of its development, is a product of Western civilization.[12] The question, whether science is value-free or value-laden is an important one. There are strong reasons to believe that, both in its conception and in its prosecution, a scientific culture is inextricably tied to the matrix of the civilization that produces it. Science is not an abstract or faceless phenomenon; it is based on a set of presuppositions derived from a social and cultural framework, and it has a character, a temper, and an identity.[13] In its present form, *tafsīr ʿilmī*, I suspect, seeks to baptize Western science in the name of Islam. In other words, it lacks authenticity of origin. In our context, *authenticity of origin* may be defined as indigenousness of impetus, perspective, and structure. Much of the "scientific" exegesis of the Qurʾān would fail to measure up to this definition.

3. Any view of the so-called scientific data in the Qurʾān must be consistent with one's view of the rest of the Qurʾānic data—the historical data, for example. Chapter 30 of the Qurʾān, entitled *al-Rūm* (*The Romans*), makes a well-known prediction that came true—namely, that the Romans, who had been defeated by the Iranians, would soon turn the tables on the latter. But the fact that the Qurʾān made a specific prediction which turned out to be true does not necessarily imply that the Qurʾān contains information about all future events. No one would claim that the Qurʾān makes reference to Ṭāriq ibn Ziyād's invasion of Spain in 711, to Ṣalāhuddīn's victory over the Crusaders at Ḥattīn in 1187, or to the Iranian Revolution of 1979. After all, if the Qurʾān contains—to use a popular phrase—*ʿilm*

12. As Ziauddin Sardar puts it: "[M]odern science is distinctively Western. All over the globe all significant science is Western in style and method, whatever the pigmentation or language of the scientist." Ziauddin Sardar, *Explorations in Islamic Science* (London and New York: Mansell, 1989), p. 6.

13. In *Explorations in Science*, pp. 95-7, Ziauddin Sardar summarizes, in table form, the major differences between Western science and Islamic science. A Muslim scientist, quoted by Sardar, says: "Science is intricately linked with ideology in its emphasis, scale of priorities, control and direction of research, to such an extent that scientists have now become ideologues" (ibid., p. 2). See also J. R. Ravets, "Science and Values" in Ziauddin Sardar (ed.), *The Touch of Midas: Science, Values and Environment in Islam and the West* (Petaling Jaya, Malaysia: Pelanduk Publications, 1988), pp. 43-53.

al-awwalīn wa-l-ākhirīn ("knowledge of the first and the last generations")—then this should be true of history no less than of science. If the Qurān cannot be claimed to be a repository of all the events that would ever happen in historical time, it cannot be claimed to be a repository of all the scientific inventions and discoveries that would ever be made.

4. Following the above-stated principle—namely, that our view of the so-called scientific verses in the Qurān should be consonant with our view of its non-scientific verses—one can legitimately argue that the Qurʾān encourages scientific study of nature. The Qurʾān, though not a book of history as such, can yet be said to have encouraged study of history—and one can make a similar argument for law and other subjects. The Qurʾān not only lays down the law or narrates historical anecdotes, but also inspires. It inspired the earlier generations of Islam with a vision and a drive, which led Muslims to establish a distinctive intellectual tradition. In founding that tradition, Muslims were also stimulated by their environment, which included the then dominant currents of thoughts and movements of ideas. I see no harm in Muslims receiving, today, a similar stimulus from the modern intellectual environment, of which science forms such an important component. The Qurʾānic exhortation to reflect on the ubiquitous signs of God (*al-Baqarah*: 164; *Yūnus*: 6, 101; *al-ʿAnkabūt*: 20; *al-Jāthiah*: 3-5; and passim) has not lost its force. That Muslims need to respond to the Qurʾānic call for a reflective study of nature must be admitted. But they must ensure that they are adequately prepared to make such a response. The preparation includes becoming well-versed in the longstanding and rich Muslim tradition of knowledge, learning to respect that tradition, and working from within that tradition to open up fresh horizons of learning and scholarship.[14] The project of *tafsīr ʿilmī*, unless it can give evidence of authenticity of origin, will never be truly viable in Islam.

14. Cf. Yūsuf al-Qaraḍāwīʾs guarded acceptance of the notion of *iʿjāz ʿilmī*, Yūsuf al-Qaraḍāwī, *Al-ʿAql wa-l-ʿIlm fi-l-Qurʾān al-Karīm* (Cairo: Maktabat Wahbah, 1416/1996. Mina t-Tafsīr al-Mawḍūʿī li-l-Qurān al-Karīm), pp. 292-6.