

The Qur'ān and Science

with Majid Daneshgar, “*The Qur'ān and Science, Part I: The Premodern Era*”; Majid Daneshgar, “*The Qur'ān and Science, Part II: Scientific Interpretations from North Africa to China, Bengal, and the Malay-Indonesian World*”; and Majid Daneshgar “*The Qur'ān and Science, Part III: Makers of the Scientific Miraculousness.*”

THE QUR'ĀN AND SCIENCE, PART III: MAKERS OF THE SCIENTIFIC MIRACULOUSNESS

by Majid Daneshgar

Abstract. The last article of this three-part series on the Qur'ān and science discusses the creation and development of the scientific miraculousness of the Qur'ān, which claims that the Qur'ān contains scientific findings and has particular scientific features, such as harmonious numerical analogies and formulae, that confirm the divine origin of the text. It became a political-theological tool used by Muslim preachers and activists across the globe. Unlike scientific interpreters of the Qur'ān, advocates of scientific miraculousness were concerned with not only uniting Muslims and proving God's authority over the universe but also promoting the Qur'ān as a mine of modern science, archaeology, and history, the authenticity of which is unchallengeable.

Keywords: Bī-Āzār Shīrāzī; Bucaille; El-Naggar; David I. Macht; Moore; Qur'ānic scientific miraculousness; Shī'ī scientific miraculousness of the Qur'ān; Harun Yahya

EARLY MODERN ALLUSIONS TO THE SCIENTIFIC MIRACULOUSNESS OF THE QUR'ĀN

Many ordinary Muslims in the late nineteenth century CE asked whether the Qur'ān had anything to say about European scientific and technological discoveries. Ṭaṇṭāwī Jawharī, an Egyptian leading scientific interpreter of the Qur'ān, was asked such questions by his readers. He answered that Qur'ānic miracles were explored by modern science and being revived during the end of time (Jawharī 1899/1901, 206). According to Jawharī, the Qur'ān does not offer full answers to modern questions, but it does include the most obvious allusions for Muslims to discover modern science.

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He draws attention to Qur'ān 16:8 (“And (He has created) horses, mules, and donkeys, for you to ride and use for show; and He has created (other) things of which ye have no knowledge”) to explain what is going to happen in the future by means of steam, electricity, military ships, planes and the telegraph (Jawharī 1899/1901, 207). Jawharī also produced a series of essays about scientific discoveries designed to give Muslims a sense of pride. After the importance of Albert Einstein’s theory of relativity was recognized, Jawharī published an essay in Persian in the 1930s stating that what Einstein discovered was not new; rather, parts of it were alluded to in the Qur’ān (see Daneshgar 2018). Although contemporaries of Jawharī discussed the miraculous aspects of the Qur’ān in a scientific context, he rarely raised the topic in other monographs or lectures. Later, he dedicated parts of his commentary to general discussions around literal and rhetorical miraculousness (Jawharī 1923–1935, xxiii:111). However, his works were first and foremost designed to interpret the Qur’ān with the help of scientific reports and discoveries.

After Jawharī, many individuals contributed to discussion about the scientific miraculousness of the Qur’ān as the topic was taken up by both academic and popular authors in Muslim countries and subsequently used as a missionary tool in the West and other non-Muslim regions.

Looking at hundreds of texts in different languages, I found Islamic sources referring to “scientific miraculousness” as a “fact” beginning in the 1940s, by which time scientific interpretation of the Qur’ān had already penetrated every corner of the Muslim world. However, exploring religious scriptures as a source for modern science was not limited to Muslims; non-Muslims were also quite active in this area.

RETURNING TO THEISM AND PROOFS OF PROPHECY

Biblical Scientific Miraculousness and Translation

Extracting modern scientific discoveries (e.g., in botany, cosmology, and medicine) from religious scriptures was not uncommon in the twentieth century CE, nor was it limited to Muslims. After World War I, both Jews and Christians felt the need to reread the Bible. Academic journals dedicated pages to scientific readings of the Bible, and the impact of science on religious and theological doctrines was re-examined. The ideas around God’s existence, miracles, and the mission of the Prophet were all important parts of the ongoing European debates (Martin 1953, 42). Religious figures and scientists shared the same concerns and questions, inviting others to see how religion and science should move forward together.

In the late 1930s, Dr. Charles Weiss, director of clinical and research laboratories at the Mount Zion Hospital in San Francisco, traced medicine in the Bible. He then published the article “Medicine in the

Bible,” in which he wrote “to those who are interested in preventive medicine and hygiene, it [the Bible] affords entertaining reading. As we browse through its pages, we are struck by the fact that the one person who must be regarded as the founder of this science is none other than Moses” (Weiss 1940, 266). Through Weiss’s work, inspired by the Hebrew Bible, Moses became the symbol of eternal knowledge who prescribed instructions about personal and public hygiene (Weiss 1940, 268). In Weiss’s opinion, Moses probably did not have “any knowledge of bacteria or parasites” but “must have arrived, intuitively or empirically, at the mode of spread of contagious diseases” (Weiss 1940, 268).

At the same time, Jewish scientists were producing an extensive body of literature on Judaism and modern science, through which Old Testament and Talmudic literature were introduced as sources of modern scientific knowledge. The Johns Hopkins University’s *Bulletin of the History of Medicine* published “A Biblical Adventure in Anatomy” by David Israel Macht (1882–1961) in 1944.¹ Macht was a prolific pharmacologist and graduate of Yeshiva College of New York, where he studied Hebrew literature. He also wrote *The Heart and Blood in the Bible* and inspired a large number of American and Iranian Jews, medical doctors, and graduates of Yeshiva College to promote the discourse of religion and science. His ideas are still circulated through social media and in Jewish missionary communities.² Macht was a pioneer critic of Bible translators and thought that translations should make sense in the light of modern science. For example, Macht draws attention to four passages from the second book of Samuel (2 Samuel 2:23, 3:27, 4:7 and 20:10) in which the Hebrew term רֵבֶשׁ (*hōmeš*) is found. According to him, this term has been literally translated as “the fifth rib.” He then compares the translations of these passages into Latin (*inguis*), Greek ($\psi\acute{o}\alpha\varsigma$), Spanish (*quinta costilla*), Dutch (*de vijfde rib*), Polish (*piąte żebro*), Hungarian (*oldalcsontról*), and English (as “venter,” “grain” or “belly” and “abdomen”), among others (Macht 1944, 169–71). He then discusses “intercostal space,” concluding that the Bible reveals “scientific facts” (Macht 1944, 174).

Along with Jews, Christian scientists and medical doctors were keen to promote the miraculous aspect of biblical literature. Some, like the Canadian doctor H. Murphy, demonstrated that physical diseases are clearly found in the Bible: “In Deuteronomy XXVIII, 22, we have reference to fevers, probably of malarial origin, and to “consumption,” which some have identified as modern pulmonary phthisis [...] The woman bound by the spirit of her infirmity (St. Luke XIII, 11–17), was a case of senile kyphosis; while Lazarus (St. Luke XVI, 20), was the typical beggar outcast from society, who can be seen at any of our city dispensaries suffering from varicose ulceration” (Murphy 1930, 262).

Civil engineer Henry M. Morris authored *The Bible and Modern Science* in 1951 with the aim of promoting the scientific aspect of the Bible. He later cofounded the Creation Research Society, which still exists and has a mission to develop and support “original research verifying the creation model of origins as a means to reveal the Creator.”³

Leonard W. Clarke, a senior narrator from the London Planetarium, produced several works rejecting the global misreading of the Greeks as a source of science. His 1962 article “Science in the Bible,” published in the well-known journal *Nature*, suggested that the Bible is a source of science, engineering, and scientific methods: “[...] the first part of Job xxviii gives an unmistakable description of the shafts and galleries of a mine. Mineralogy is one of the technologies in which the early Jews were obviously considerably practised [...] The experience gained in sinking mines no doubt helped in the only major engineering accomplishment mentioned in the Bible—the Siloam Tunnel, the conduit constructed in the reign of Hezekiah for bringing water into the city [II Kings xx:20]” (Clarke 1962, 11–12).

Also in 1962, Robert Laird Harris published “The Bible and Cosmology” in the Bulletin of the *Evangelical Theological Society*.

By that time, the topic of religion and science was being discussed in both scientific and theological journals. An edited collection in America had a significant impact on Muslims, prompting their scientists to become more interested in dialogues between Islam, the Qur’ān, and science. In 1958, John Clover Monsma (d. 1970), a Christian minister, edited *The Evidence of God in an Expanding Universe: Forty American Scientists Declare Their Affirmative Views on Religion*. It was popular at the time and reprinted by several different publishers. Monsma’s work, which includes essays by non-Muslim scientists, contained obvious references to the concept of the scientific miraculousness of religious scriptures.⁴ In collaboration with the American publisher Franklin, this work was soon translated into an Arabic version, based on which a Persian translation was made in Iran in the early 1960s. The Arabic version included an appendix about scientific miraculousness and signs in the Qur’ān by an Arab scientist, Muḥammad Jamāl al-Dīn al-Findī, which was translated into Persian by ‘Alī Akbar Ṣabā for the Persian version of the book (Figure 1).

Thus, a global movement was emerging that gave a fresh voice to theism and prophecy by finding a link between holy texts and modern science. An obvious shift had occurred in the Muslim discourse regarding the Qur’ān and science. The agendas of pan-Islamism and pan-Arabism, combined with the desire to demonstrate harmony between Islam and rationality displayed in Qur’ānic scientific interpretations (*tafsīr ‘ilmī*), were now giving way to attempts to scientifically prove the divine origin of the Qur’ān and Muḥammad’s prophethood.

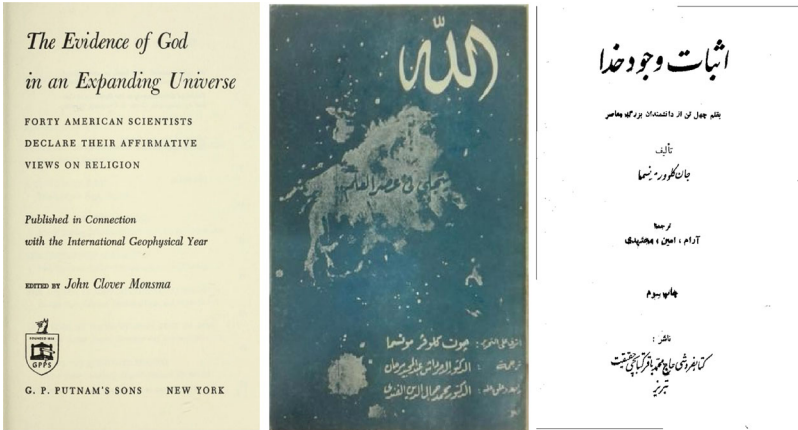


Figure 1. *The evidence of God in an expanding universe: Forty American scientists declare their affirmative views on religion and its Arabic (middle) and Persian (right) translations.*

QUR'ĀNIC SCIENTIFIC MIRACULOUSNESS: A SYSTEMATIC APPROACH

In Egyptian circles, the influence of Shaykh Ṭaṇṭāwī Jawharī (d. 1940), a leading scientific interpreter of the Qur'ān (along with the scholar Farīd Wajdī), was quite tangible. Ḥanafī Aḥmad (a scientist who graduated from Durham (and al-Ghamrāwī (a chemist and physician) both wrote popular works about scientific miracles in the Qur'ān. Aḥmad authored a work on scientific and miraculous aspects of the Qur'ān that was widely circulated throughout the Muslim world.⁵ Al-Ghamrāwī's works were less well known at the time, but his treatises were later developed, compiled, and reproduced in 1973.⁶ His writings about the Qur'ān and science are divided into six main categories: “(1) an introduction to the Qur'ān and science; (2) cosmological verses in the Qur'ān; (3) mountains in the Qur'ān; (4) heavens in the Qur'ān; (5) meteorology in the Qur'ān; (6) modern discoveries and the Qur'ān” (al-Ghamrāwī 1973, 221–388).

Another Egyptian advocate of the scientific miraculousness of the Qur'ān was 'Abd al-Razzāq Nawfal, widely known for his book on numerical miracles in the Qur'ān (*al-i'jāz al-'adady*). Although Nawfal did not specifically state that the Qur'ān contains mathematical equations, his book was a representation of mathematical harmony in the Qur'ān. It has been translated into many languages and has had a strong influence on Muslim communities, especially Turks and Malaysians, to the extent that various conferences on the numerical aspects of Qur'ānic content have been organized in Malaysia and different copies of the Qur'ān aiming to show numerical harmony have been printed in Turkey. Nawfal's mathematical method and analysis have become popular among Muslims

in Europe as a means of proving the divine origin of the Qur'ān to non-Muslims (M91da 2018). To demonstrate the mathematical harmony of the Qur'ān, Nawfal noted that “the term ‘al-Dunyā’ (The World) is repeated 115 times in the Holy Qur'ān [...] and the term ‘al- Ākhira’ (The Hereafter) is repeated 115 times” (Nawfal 1987, 7).

Similar analogies are noted for other themes like “summer and warmth,” “winter and coolness,” and “badness and goodness” (Nawfal 1987, 252–53). Nawfal describes the ultimate message of the “numerical miracle of the Qur'ān” as: “And this is the Numerical Miracle of the Holy Qur'ān [...] It is indeed an allusion to the truthfulness of the revealed one [...] the revealed message to him [Muḥammad]” (Nawfal 1987, 253).

Further studies on the numerical miracles of the Qur'ān were conducted by the Egyptian scientist Rashad Khalifa (d. 1990).⁷ One of his works, *The Computer Speaks: God's Message to the World*, is a detailed analysis of the Qur'ān. For instance, he shows that the opening statement of the Qur'ān consists of 19 letters; the first chapter (Qur'ān 96) consists of 19 words; the last chapter (Qur'ān 110) consists of 19 words; and “the Quran consists of 114 chapters, and 114 is a multiple of 19 ($114 = 19 \times 6$)” (Khalifa 1981, 6–9). In introducing his book, Khalifa says: “This book will put in your hands physical, touchable, verifiable, and utterly indisputable proof for: (1) the Existence of God; (2) a Message from God to you; and (3) the exact year when this world will end” (Khalifa 1981, 1).

In Iran, the physicians ‘Abd al-Karīm Faqīhī-Shīrāzī and Yadollāh Niāzmand have published a number of articles about the scientific miraculousness of the Qur'ān in *Akhgar* magazine.⁸ Their articles deal with the inclusion of modern discoveries in areas such as health, medicine, menstruation, and physics in the Qur'ān.⁹ In 1953, Mīrkhalīl Seyed Naqavī, an Iranian Shī'ī scholar, wrote *Khodā-shenāsī az nazār-e 'ilm-e emrūz, yā Āyāt-e Elābiyyah dar Ṭabī'at* (*Theism from the Perspective of Modern Science, or Divine Signs in Nature*). In this work, he explains the term *zawj*, “pair and/or kind” in the Qur'ān (e.g., Qur'ān 26:7), as a reference to modern botanical physiology. Seyed Naqavī describes the anatomy of flowers, animals, and humans. Between 1969 and 1970, he published a series of articles on the theme of *Mu'jizāt-e 'ilmi-e Qur'ān* (*Scientific Miracles of the Qur'ān*), which concluded: “Do not these scientific miracles demonstrate a clear proof for [Muḥammad's] prophecy, and his relationship with another sphere?!” (Seyed Naqavī 1964, 4).

Another influential scientist who discussed the relationship between the Qur'ān and science with the aim of proving the divine nature of the Qur'ān was Mehdi Bāzargān (d. 1995), a scientist, political activist, and the first prime minister of post-revolutionary Iran. He wrote on Islam and science in the 1940s, proclaiming the harmony between modern science and Shī'ī Islam. For Bāzargān, Islam (particularly Shī'ism) is the source of all knowledge and therefore compatible with modern teachings. His

Purifications in Islam (مطهرات در اسلام) demonstrate how modern health sciences and natural biology relate to Islamic teachings: “Reading this book may clarify [...] that Islamic purification is superior to other ethical recommendations among nations [...] and has been made based on a number of accurate natural laws and precise scientific issues, which signify its comprehensive vision on natural and creational mysteries” (Bāzargān 1964, 21).¹⁰

Bāzargān also shows that references to natural cycles and food cycles in modern geology and nutrition, respectively, were already indicated in Qurʾān 3:27 (“[...] Thou bringest the Living out of the dead, and Thou bringest the dead out of the Living [...]”) (Bāzargān 1964, 31). He further developed his approach to discussing science in the Qurʾān through another work entitled *Wind and Rain in the Qurʾān* (باد و باران در قرآن) in the mid-1960s.

Besides scientists, Iranian religious figures have also been developing their authority in the area of scientific miraculousness. One of the most prolific Iranian scholars is a cleric named ‘Abd al-Karīm Bī-Āzār Shīrāzī. Since his youth, Bī-Āzār Shīrāzī has written and translated works for the Iranian public on topics such as the Qurʾān, revelation, the mission of the Prophet, science, and culture. He began a series on *The Qurʾān and Nature* (قرآن و طبیعت) in 1970. The second volume of this series, *The Past and Future World* (جهان گذشته و آینده), sold out quickly and was disseminated widely throughout Iran. It is the most celebrated volume in the series and presents novel ideas not discussed comprehensively before. Other volumes include *Mystery of Mountains* (راز کوه ها), *Wonders of the Cosmos* (شگفتیهای کیهان), *Travel to Space* (مسافرت به فضا), *The Honeybee* (زنبور عسل), and *The World of the Embryo* (جهان جنین).

Bī-Āzār Shīrāzī begins *The Qurʾān and Nature* with a statement about the importance of believing in the “other world” in order to support human psychic, moral, and social needs; otherwise, human life ends up in “nihilism”:

[From a psychological perspective] when a human does not have hope in this world, and does not have belief in origin and the other world, they would always experience turmoil and deadlock [...] In this vein, those who do not believe in a Just, All-Wise, and Omnipotent God as well as the Judgement Day will remain wandering, displaced and disappointed; [from a moral perspective] those who deny the Day of Judgment and assume that they will be nothing and destroyed after death, and all his worldly good affairs will be gone, it is no surprise that they would not oblige themselves to eagerly do good and learn perfections, and not refuse to commit crime and offenses. On the other hand, those who believe in the glorious Hereafter and its reckoning, their belief prevents them from committing sin and all forms of tyranny and oppression (hidden/private and obvious/public) and encourages them to practice good. [From a sociological perspective] [...] neither money’s power, nor the leverage of weapon and force and culture and civilization can stop the outburst of human instinct. But it is only the

spiritual power of religion, viz., believe in the origin [of the world] and Resurrection and the Day of Judgement, that is able to restrain the disobedient and rebellious nature of humans and push them to do good [...] Nonetheless, who knows where and how this world [viz., the other one] is made up and that we will come back to life once more after death, and will be judged based on our worldly affairs. This very book is responsible for demonstrating this important and essential question [...] It begins its discussion with the origin of the Universe and beings and then after having a quick look at the current world, we will move towards the future of the world. (Bī-Āzār Shīrāzī 1970, 11–13)

In line with scholars from other religious backgrounds, Bī-Āzār Shīrāzī wants to bring back belief in “theism” and the “hereafter.” To do so, he uses modern science and scientific photography to show how the Qur’ān expresses these beliefs. His sources include scientific works by Iranian and European scientists,¹¹ Shī’ī traditions and philosophy,¹² Arab literature,¹³ supplications, and prayers.¹⁴ Chapter four of *The Qur’ān and Nature*, “The Wondrous World of the Embryo,” in which he states that God’s references to the stages of human creation (e.g., Qur’ān 86:6–10, 90:4) are scientifically accurate and prove the existence of life after life, is marked by great innovation.

In interpreting Qur’ān 90:4 (“Verily We have created man into toil and struggle”), Bī-Āzār Shīrāzī presents the Qur’ān as a mine of scientific information compatible with the findings of modern embryology: “The small, rounded mass to the left side of the embryo is its source of nutrition. This mass which floats in the blood absorbs food, water and oxygen extracts, which are in blood by means of the gastrointestinal and respiratory tract and pass on to the embryo by means of the umbilical cord” (Bī-Āzār Shīrāzī 1970, 64).

To support his claim, Bī-Āzār Shīrāzī relies on the Shī’ī tradition of Imām Ṣādiq that God has “shared the embryo with the mother for eating, drinking, and breathing” (Bī-Āzār Shīrāzī 1970, 64) before presenting a section on the “threefold veils of darkness” from Qur’ān 39:6. This is a celebrated verse in Islamic embryological essays. Although this concept was explained by al-Iskandarānī and Jawharī, Bī-Āzār Shīrāzī’s presentation is accompanied by scientific pictures and empirical data: “Once we look at them carefully under the microscope, we would see, as mentioned in the Qur’ān, that they are divided into three layers of 1. amniotic sac, 2. chorion shell, 3. allantois sac” (Bī-Āzār Shīrāzī 1970, 64).

Reza Pak-nejad (d. 1981) was another physician and pioneer who believed in the presentation of modern sciences in the Qur’ān and Shī’ī traditions. His voluminous set on Islam and science covers microbiology in Islam, animal biology in Islam, embryology in Islam, urban and public health in Islam, nutrition in Islam, foods in the Qur’ān, body health and cleanliness in the Qur’ān and traditions, sport and sleep in Islam, dress

codes, health, and Islam, and so on. Given the importance of his works, further studies will be dedicated to his reading of the Qur'ān and science in the future.

During the 1970s, the discourse on the Qur'ān and science intensified and accelerated. It was being used not only as a means of linking Muslims together or proving prophecy and Islamic eschatology but also as a way of promoting the Qur'ān as a scientific source to be used against anti-Islamic materials or the scriptures of other religions. Muslims were encouraged to believe that discourse on the Qur'ān and science could shape another Muslim Renaissance. By then, a huge number of works were being produced in the Muslim world, but none was as reputable as that of the French physician Maurice Bucaille (d. 1998), who opened the way for other non-Muslim scientists to comment on the Qur'ān from the perspective of science.

BUCAILLE

There is an ongoing scholarly debate regarding whether the French physician and surgeon Maurice Bucaille should be considered an advocate of the scientific interpretation of the Qur'ān or an advocate of its scientific miraculousness. He is widely known for his work *La Bible, le Coran et la Science: les Écritures saintes examinées à la lumière des connaissances modernes* (*The Bible, the Qur'ān and Science: The Holy Scriptures Examined in the Light of Modern Knowledge*), which was finished in 1975 and published in May 1976.

Bucaille authored this book after achieving some competency in Arabic and then engaging with the study of history and hieroglyphics; his interactions with Muslim patients were instrumental in his subsequent reading of the Qur'ān. *La Bible, le Coran et la Science* was controversial and thus competed with other bestsellers and controversial works from the same era. It was quickly translated into many different languages. In the Balkan regions and Turkey, Bucaille's book was placed alongside those of Abū Bakr Sirāj ad-Dīn (previously known as Martin Lings), Seyyed Hossein Nasr, Muḥammad Asad, and Ziauddin Sardar (see *Nashr-e Dānesh* 1986, 74). In France, his name was listed alongside Roger Garaudy and Marcel André Boisard, who "acted like Muslims" and "contributed to an apology for Islam" (De La Veronne 1980, 164). The book was particularly welcomed by Muslim publishers in North America such as Tahrike Tarsile Qur'ān in Elmhurst, New York, a publisher that, to this day, uses Bucaille's work to introduce the religion of Islam and confirm the miraculous nature of the Qur'ān. In Asia, Islamic publishers like Millat Book Center became fierce promoters of Bucaille's book. In Pakistan, Darussalam promoted an Urdu version of the book.

In writing *La Bible, le Coran et la science*, Bucaille was inspired by global interreligious movements, having witnessed “the reception of the Grand Ulemas of Saudi Arabia by Pope Paul VI at the Vatican in 1974” and thinking that there was a need for a dialogue between world religions (Bucaille 2003, preface). However, his work led to disputation more than dialogue, a situation that lasted for decades.

Having read his book several times, it is clear to me that Bucaille presents himself as not only a Muslim apologetic figure but also a combination of a scientific interpreter and an advocate of scientific miraculousness. Bucaille, like Jawharī and many others, explains Qur’ānic verses using (premodern and modern) scientific discoveries. Nonetheless, he occasionally integrates into his interpretations general statements that not only suggest the miraculous nature of the Qur’ān but are also key points in literature on the scientific miraculousness of the Qur’ān, such as: “The twentieth century reader of the Qur’an will be surprised about the facts that verses refer to” (Bucaille 1976, 141); “Such statements in the Qur’an concerning the creation, which appeared nearly fourteen centuries ago, obviously do not lend themselves to a human explanation” (Bucaille 1976, 150); and “A new concept therefore existed in the Qur’an that was not to be explained until centuries later” (Bucaille 1976, 159).

Bucaille’s scientific interpretation confirms his view on the Qur’ān’s inclusion of scientific content. In the section on “the water cycle and the seas,” Bucaille states that:

The first clear formulation of the water cycle must be attributed to Bernard Palissy in 1580: he claimed that underground water came from rainwater infiltrating into the soil. This theory was confirmed by E. Mariotte and P. Perrault in the seventeenth century. In the following passages from the Qur’an [e.g., Qur’ān 23:18–19, 50:9–11], there is no trace of the mistaken ideas that were current at the time of Muhammad: [...]: “We sent down water from the sky in measure and lodged it in the ground. And We certainly are able to withdraw it. Therewith for you We gave rise to gardens of palm trees and vineyards where for you are abundant fruits and of them you eat” ([Qur’ān] 23:18-19). (Bucaille 1976, 173–74)

Bucaille also draws an analogy between what the Qur’ān says about rainwater and subsequent scientific discoveries, also described in essays by other non-Muslim advocates of the scientific miraculousness of the Qur’ān:

In his entry on hydrology (hydrologie) in the *Universalis Encyclopedia (Encyclopedia Universalis)*, M. R. Remenieras, a teacher at the French National School of Agronomy (Ecole nationale du Genie rural, des Eaux et Forêts), describes the main stages of hydrology and refers to the magnificent irrigation works of the ancients, particularly in the Middle East [...] He continues as follows: “It was not until the Renaissance (between circa 1400 and 1600) that purely philosophical concepts gave way to research based

on the objective observation of hydrologic phenomena. Leonardo da Vinci (1452–1519) rebelled against Aristotle's statements. Bernard Palissy, in his wonderful discourse on the nature of waters and fountains both natural and artificial (*Discours admirable de la nature des eaux et fontaines tant naturelles qu'artificielles* (Paris, 1570)) gives a correct interpretation of the water cycle and especially of the way springs are fed by rainwater." This last statement is surely exactly what is mentioned in verse 21, Surah 39^[15] describing the way rainwater is conducted into sources in the ground. (Bucaille 1976, 176–77)

Reminiscent of how Macht critiqued translators of the Bible based on his physiological expertise, Bucaille also emerged as a critic of former translators of the Qur'ān like Blachère and Hamidullah, asking readers not to rely on their inaccurate and nonscientific renditions. Regarding Qur'ān 96:2, Bucaille claims that all translations of that verse that use "clot" as a translation of the Arabic *'alaq* to show the initial form of a human embryo are inaccurate, since "the original sense of 'something which clings' corresponds exactly to today's firmly established reality" (Bucaille 1976, 201–2).

Moreover, Bucaille challenges Christian theological discourse by effectively minimizing the Bible and elevating the Qur'ān in relation to empirical science. He highlights "biblical mistakes," stating that:

there is nothing new about the existence of scientific errors in the Bible. What is perhaps new is the fact that they have been comprehensively described and explained according to the ideas taken from the works of Christian biblical exegetes. As far as the Qur'ān is concerned, scriptures and modern knowledge are in harmony—not disagreement—and this agreement may not be explained in human terms. It appears to have been entirely overlooked by Western Islamologists. Admittedly, however, a knowledge of many different scientific disciplines is needed to study this question in detail, which Islamologists with their literary background do not generally possess. (Bucaille 2003, preface)

Bucaille's work undermined both Christianity and many Western scholars of Islam, suggesting that only scientists with competence in Arabic literature can show the true correlation between the Qur'ān and science.

La Bible, le Coran et la Science remains popular as a reliable source among those who seek to prove the divine origin of the Qur'ān in non-Muslim circles (see Kuiper 2021) and Muslim preachers (e.g., Yusuf Estes (see Sheikh 2014)).¹⁶ Blogs, webpages, news agencies, Muslim associations, and mosques in the West have all used Bucaille's ideas to promote Islam. The website Quran and Science, run by the chemist Gamal Abdel-Nasser al-Ganainy, has been significantly influenced by Bucaille's work. This website was also instrumental in propagating an old rumor that Bucaille was a Muslim—hearsay that was reproduced by Arabnews in 2013. Within a few years of his book's publication, Bucaille

was interviewed by Muslim journals (e.g., *al-Azhar* in 1978 and *Maktab-e Islām* in 1983). Many readers wondered whether he had accepted Islam, a question he always refused to categorically answer. However, he confirmed that the “Qur’ān is a revelation and Muḥammad is the messenger of God” (Pīshvā’ī 1983, 57).

Although Bucaille played various roles in religious discourse, he came to be seen as an advocate of scientific miraculousness, paving the way for others (both Muslim and non-Muslim) to do the same. His claim that the mummy of the pharaoh whose story is outlined in the Qur’ān had been discovered (Bucaille 1991) has been repeatedly cited and addressed in scientific miraculousness discourses.¹⁷

AFTER BUCAILLE

Saudi Arabia: The Pole of Scientific Miraculousness

Following the publication of Bucaille’s book in the Muslim world, scholars, preachers, and other thinkers expressed interest in his study. As a result, conferences and seminars about his book (or based on its content) were organized. One of the most significant of these was Bucaille’s lecture at the Islamic Foundation of Illinois in the 1990s, where he began with the following statement: “There is no human word prior to modern time that contains statements which were equally in advance of the state of knowledge at the time they appeared and which might be compared to the Qur’ān” (Khan n.d.).

This was one of the longest known lectures given by Bucaille in North America after the publication of his book. Although his book was still gaining a reputation in the 1970s, Muslims were already gathering to discuss Islamizing their educational system, even establishing universities and institutes to educate and equip Muslim scientists to be proficient in both Muslim thought and modern science.¹⁸ Advocates promoted a process of indigenization “integrating Euroamerican science with Islamic values” (Furlow 2020, 153). The Islamization of knowledge has become the subject of many works in North America, Europe, the Middle East and Southeast Asia since then. From these various conferences and seminars, scientific miraculousness has emerged as the most extreme perspective.

Beginning in 1979, a series of conferences were held in Saudi Arabia (particularly in Jeddah and Dammam) that had a quite significant impact on the discourse surrounding the scientific miraculousness of the Qur’ān. These conferences were attended by a number of European scientists, most with backgrounds in geology or biology, who were interviewed and pressed to confirm that Qur’ānic verses are in accordance with modern scientific theories. One of these scientists was Professor Alfred Kröner (d. 2019; see Hoffmann, Rojas-Agramonte, and Suhr 2020). As a young professor of

geology at the Johannes Gutenberg-Universität Mainz, he was invited to a conference in Arabia in 1979. The video of his interview and speech has since gone viral (Truth0will0prevail 2009), and many people have repeated his explanations of geology in the Qur'ān in succeeding decades. Certain parts of his statements have circulated continuously and were later used by the Yemeni scholar Shaykh 'Abdul Majīd al-Zindāni, former professor of Islamic studies at King 'Abdul Azīz University of Jeddah and the founder of al-Imān University in Yemen. Al-Zindāni was also one of the key founders of the Commission on Scientific Signs of Qur'ān and Sunnah in Saudi Arabia in 1983 (Union of International Associations n.d.). The commission's aim was to "present, verify, and publish scientific signs of the Qur'ān and Sunnah," an agenda directed by the Muslim World League and World Supreme Council for Mosques (Union of International Associations n.d.).

Al-Zindāni's Arabic commentary on Kröner's video (*Die0Wahrheit Otut0weh* 2013) has been translated into various languages (e.g., English and German) and used to promote Islam in non-Islamic contexts. The German website *Way to Allah*,¹⁹ dedicated to public Da'wah (mission) and scientific miraculousness, considers Kröner's statement proof of the miraculousness of the Qur'ān.

In 2016, I had a chance to communicate with Kröner. His response to my question about the video provides further information about his interview:

I have answered literally hundreds of e-mails over the years concerning this issue. In 1979, I attended a geological conference in Jeddah, Saudi Arabia, and there was a television interview with five Western geologists organized by the then Minister of Religious Affairs, who had a PhD in geology. The issue was whether the Qur'ān was compatible with modern views on the evolution of the Earth. As you can imagine, there are always aspects in religious writing that are compatible with nature, and the Qur'ān is no exception. The citations that you now find on these religious sites are taken out of context, I cannot even remember details of the interview. In any case, whatever you find on these sites I surely never said as it is quoted now. There is little I can do about this, I asked several friends in the Islamic world for advice, and they all said just to leave it and live with it. (Alfred Kröner, Personal communication, August 28, 2016)

A series of interviews with scientists was later transcribed into a booklet titled *Wunder des Quran* (Qur'ānic Miracle[s]) to explain die besondere Bedeutung des Quran (particular meanings of the Qur'ān).

Egypt's role as the main supporter of the scientific interpretation of the Qur'ān in the early twentieth century CE was taken over by Saudi Arabia in the 1970s and 1980s. It was in Saudi Arabia that the idea of the Qur'ān as a scientific miracle found new life as a political, missiological, and educational tool. It quickly became part of the syllabus in Muslim

educational institutions as well as a regular feature in academic journals and conferences. Several departments dedicated to the Qurʾān and science have been founded within the last few decades, including Pusat Studi Islam dan Sains in Indonesia, the Center of Qurʾānic Research in Malaysia, and Shahid Beheshti University’s Interdisciplinary Qurʾānic Studies Research Institute in Iran. Increasingly, Muslim universities have developed courses that place the Qurʾān and science alongside other themes of Islamization. A huge body of literature on the topic has been produced in different languages.

Moore’s Embryology and His Legacy

Other Western scientists joined al-Zindānī’s mission to prove the scientific miraculousness of the Qurʾān, occasionally co-authoring works (see Daneshgar 2018; Guénon 2019). A particularly controversial figure was Canadian embryologist Dr. Keith L. Moore, who died in 2019 (despite my best efforts, I was never able to get in touch with him). Moore spent time living in Saudi Arabia and pursued his research on modern embryology, as well as relevant prophetic traditions about human creation, at King ‘Abdul Azīz University Hospital in 1985. One of the results of his research was “A Scientist’s Interpretation of References to Embryology in the Qurʾān” in the *Journal of the Islamic Medical Association of North America* in 1986.²⁰

After providing a chronological analysis of the development of a human fetus and analyzing a number of Qurʾānic verses (Qurʾān 22:5, 23:13–14, 32:9, 39), Moore concludes: “The interpretation of the verses in the Qurʾān referring to human development would not have been possible in the seventh century AD, or even a hundred years ago. We can interpret them now because the science of modern embryology affords us new understanding. Undoubtedly there are other verses in the Qurʾān related to human development that will be understood in the future as our knowledge increases” (Moore 1986, 16)²¹.

This bold sentence was cited in multiple theological, scientific, and historical studies in different languages. The use of historical-terminological analysis of the Qurʾān regarding modern embryology gave Muslims a sense of confidence that the Qurʾān contains information about modern medicine. Moore’s article inspired more physicians to follow in his steps. One example can be found in the lectures of Dr Fevzi Cebe (GC Media 2016), which are popular in a German-Turkish context and have also been translated into English. Cebe, who studied medicine in Köln and at Harvard University, and who is fully familiar with the Qurʾān, has been warmly received by Muslim communities in Europe, where he has demonstrated the medical miracle of the Qurʾān.

THE FLOURISHING STAGE

The notion of the scientific miraculousness of the Qur'ān flourished during the 1990s due to various scholarly works (by both Muslims and non-Muslims). This decade is primarily known, however, for the works of the Egyptian geologist Zaghoul El-Naggar (b. 1933), head of the Egyptian Committee on Scientific Facts in the Glorious Qur'ān, who has shared his ideas through television programs, books, and articles. He is best known for his 1991 work *The Geological Concept of Mountains in the Qur'ān*, as well as the following statement he reported from American astronomers: “We have found a belt/strap of changeable rocks splitting the moon from surface to the core to the other surface” (Learn about Islam 2010). According to El-Naggar, this modern discovery reflected the statement in Qur'ān 54:1 (“the Hour (of Judgment) is nigh, and the moon is cleft asunder”) (El-Naggar 2010, 69–73; Bigliardi 2020).

El-Naggar begins *The Geological Concept of Mountains in the Qur'ān* with several definitions of the term “mountain” based on popular scientific sources like the *Dictionary of Geological Terms* and the *Dictionary of the Natural Environment*. He then compares these definitions with what the Qur'ān says about mountains: “The Qur'ān consistently describes mountains as stabilizers for the Earth's surface which hold it firmly lest it should shake with us, and as pickets (or pegs) for the Earth that hold its surface (i.e., the Earth's lithosphere) down as a means of fixation [...] such knowledge was revealed more than twelve centuries before man started to wonder whether or not mountains could have roots below its outcropping parts” (El-Naggar 1991, 3–4).

El-Naggar's use of the concept of scientific miraculousness to define both Qur'ānic Arabic terms and general theological concepts is also worthy of note. To El-Naggar, Qur'ān 25:53 (“It is He Who has let free the two bodies of flowing water: One palatable and sweet, and the other salt and bitter; yet has He made a barrier between them, a partition that is forbidden to be passed”) describes what modern geology and hydrology have now discovered happens when two different types of water meet each other. But El-Naggar also believes that this verse has deeper meaning: that such barriers separating fresh water from saline water represent the distinction between truth and falsehood and, more specifically, “true religion vs. false religion” (Ullal 2021). For El-Naggar, scientific miraculousness has a dual role. It both proves the Qur'ān's divine origin and interprets the meaning of the Qur'ān (Ullal 2021).

In the same way that El-Naggar's ideas were warmly received across the Middle East, the works of Dr. Zakir Naik, an Indian physician with Saudi Arabian citizenship, significantly influenced South Asian communities. Naik is frequently commended by Muslim leaders for his defense of Islamic rules using the Qur'ān and science. The most obvious difference

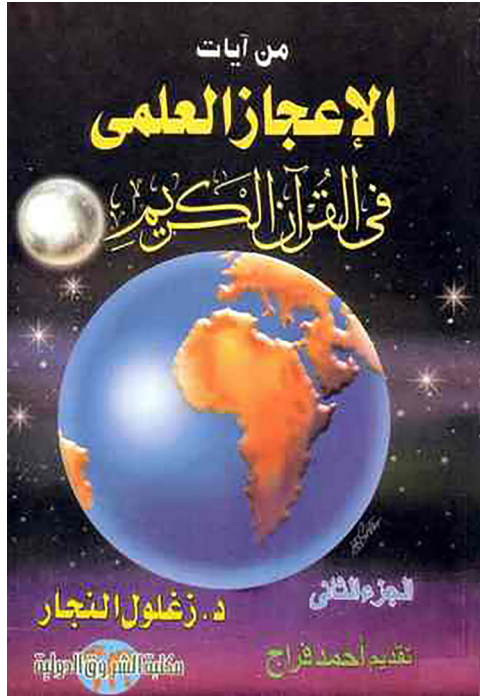


Figure 2. Zaghoul El-Naggar’s book on scientific miraculousness of the Qur’a’n.

between Naik and former advocates of Islam is his preaching role, as depicted in tele-Da’wah programs (see Gardner, Mayes, and Hameed 2018). Just as Christian televangelists have broadcast Christian teachings on television, so too Naik has emerged as a tele-imām, preaching Islam as the true religion and using the language of the Qur’a’n and science. Echoing El-Naggar, Naik delivered a speech at the Oxford Union in 2011 in which he addressed the scientific miraculousness of the Qur’a’n (Figure 2).

Naik’s *The Quran and Science: Compatible or Incompatible?* (2000), the subject of my graduate research, has been widely circulated around the world and in Islamic Da’wah centers. Each section of the volume is about one of the so-called Qur’ānic miracles (whether in astronomy, physics, hydrology, oceanography, medicine, or embryology). Like El-Naggar, Naik uses science to demonstrate that “the scientific evidences of the Qur’a’n clearly prove its Divine origin” (Naik 2000).

Today, many Muslim communities throughout the world have their own theorists who preach on the scientific miraculousness of the Qur’a’n. Iranian scholars have also been part of this movement. One of the pioneer figures is a prolific Shi’ī cleric in Qum, Iran named Moḥammad ‘Alī Reḍā’ī Iṣfahānī (b. 1962), who has been active in the field for

several decades. He is the founder of the Iranian *Qur'ān and Science Quarterly*, which is produced in several languages and distributed to African and South Asian communities. His works, including *The Critical Study of the Quran's Scientific Miraculousness*, were quite popular during the 2000s and considered a main source of Iranian (and, more generally, Shī'ī) discourse on the Qur'ān and science. According to Reḍā'ī Iṣfahānī, it is important to distinguish between the notions of scientific interpretation and scientific miraculousness (Reḍā'ī Iṣfahānī 2001, 25–29). It is clear from reading his work that Reḍā'ī Iṣfahānī's approach combines elements of Fakhr al-Dīn al-Rāzī's belief with aspects of al-Ghazālī's doctrine. On the one hand, Reḍā'ī Iṣfahānī accepts the Ghazalian perspective about the comprehensiveness of the Qur'ān, confirming the authority of God over the universe; on the other, he agrees with Rāzī that detailed scientific disciplines do not exist in the Qur'ān (Reḍā'ī Iṣfahānī 2001, 43). This sounds contradictory, but he tries to affirm both views, showing himself to be an advocate of scientific miraculousness while also rejecting any attempts to ascribe uncertain theories to the Qur'ān:

Some scientific allusions in the Qur'ān prove the Qur'ānic scientific miraculousness. These Qur'ānic allusions—that are compatible with approved and certain scientific facts (not the shaky theories)—remind us that the Qur'ān has not taken these [scientific] issues from its social context; as the Qur'ān was revealed in the uncivilized Arabian Peninsula, and that even other civilizations of its time—Persia and Romans—had no such scientific progress to instill Qur'ānic scientific theories to the Prophet (PBUH). Thus, Qur'ān was revealed from the Wise and Omniscient God. (Reḍā'ī Iṣfahānī 2001, 43–44)

Like Bucaille (Figure 3), El-Naggar, and Naik, Reḍā'ī Iṣfahānī has written a number of books dealing with thematic scientific miraculousness (e.g., cosmology and geology) that have been translated into Arabic, Urdu, Turkish, and African languages and distributed around the world, largely in Shī'ī communities.²² In most of his works, the scientific miraculousness of the Qur'ān functions as a missionary tool to promote Islam.

The works of the Turkish television host Adnan Oktar (pen name Harun Yahya) are particularly popular in the Balkan region. Yahya's approach to Islamic science is connected to his understanding of Bediüzzaman Said Nursi (d. 1960), a celebrated Muslim thinker and reformer from Turkey, whom he has called “the greatest renovator of the religion” (Bigliardi 2014, 50). Yahya frequently combines Nursi's ideas with his own populist readings of science. Yahya has also authored works through which he has tried to prove, using scientific fact, that the Qur'ān is the word of God. His works and ideas have spread across the world, distributed by both Islamic publishers and his followers and business partners.²³

To my knowledge, most materials on the topic available in Africa are distributed by Islamic missionary centers and publishers. The Zimbabwe



Figure 3. Turkish copies of Maurice Bucaille's *La Bible, le Coran et la Science: les Écritures saintes examinées à la lumière des connaissances modernes* (left) and Zakir Naik's *The Qur'ān & Modern Science: Compatible or Incompatible?* (right).

Muslims Community Da'wah has been active in informing local Muslim communities about the ideas of Bucaille and Naik regarding the scientific miraculousness of the Qur'ān.²⁴ One of the main distributors of literature on Qur'ānic scientific miraculousness in Africa is Darussalam, with branches in Durban and Capetown, South Africa, which publishes Naik's works as well as translations of Bucaille's book. Ahmed Deedat's role as a public preacher and debater can be compared with that played by Zakir Naik in India. Indeed, they were very good friends for several years. Deedat welcomed all sorts of questions about the comparative study of religions, a subject through which he attempted to discuss the uniqueness of the Qur'ān and invalidate other religious traditions. Among his lectures were several about the miraculousness of the Qur'ān. When asked, "Can you scientifically show some texts from the Qur'ān that it is a Revelation from God?" he pointed out that the origin of the universe, particularly the Big Bang, was clearly outlined in Qur'ān 21:30 centuries ago (AngelicHuman7 2013): "Do not the Unbelievers see that the heavens and the earth were joined together (as one unit of creation), before we clove them asunder? We made from water every living thing. Will they not then believe?"

Having become famous throughout the global Muslim community, he travelled the world in the 1980s, using the scientific miraculousness of the Qur'ān as a means of proving the divine nature of Islam.

PUBLIC TREATMENTS

The two trends being considered here, the scientific interpretation of the Qur'ān and the scientific miraculousness of the Qur'ān, are ongoing. However, scientific miraculousness is more familiar to the public, while the idea of scientific interpretation is rarely raised in the public sphere. The reasons for this are unclear. Perhaps it is because the distinction between the two is subtle, making it more difficult to grasp. Although there may be a few religious centers with copies of Qur'ānic commentaries by Muḥammad 'Abduh or Jawhārī, most exegetical works these days are found inside Muslim institutions (universities, madrasas, *hawzahs*, and *pondoks*),²⁵ whereas mosques and Da'wah centers mainly contain copies of the miraculous accounts of Bucaille, Moore, El-Naggar, Naik, and Yahya, among others.

Over the last decade, however, the discourse, while increasing in popularity, has become less centered on books. The post-9/11 period has made Muslim apologetic figures determined to keep their distance from radicals. Such figures use social media to present their theological messages, all the while commenting on the Qur'ān from a scientific perspective. Following recent academic discourse on the Qur'ān and science, some public figures have changed their opinions, from strong advocates of the scientific miraculousness of the Qur'ān to a more moderate position of shedding light on interpretation rather than inimitability. In this regard, the trend of the scientific miraculousness of the Qur'ān has had an interesting journey. Some like Hamza Andreas Tzortzis, a British preacher and public figure, have shifted their ideas. Tzortzis's point of view first came to my attention through his theological arguments and publications. He, along with Adnan Rashid, another public figure, presented the Qur'ān as the source of modern science and attempted to elevate its validity in comparison to other scriptures in streets and religious and academic centers. Tzortzis also published "Embryology in the Qur'ān: A Scientific-Linguistic Analysis of Chapter 23 with Responses to Historical, Scientific and Popular Contentions" in 2012. One of the main aspects of his study was representing the ideas of Keith L. Moore and other embryologists in response to the "biblical" and "Orientalist" tradition that Muḥammad "did not plagiarize" ancient Greek embryology (Tzortzis 2012). Recently, Tzortzis has been trying to move more cautiously, accepting alternative interpretations of scientific allusions in the Qur'ān. He is influenced by the ideas of Mustansir Mir and Nidhal Guessoum. Mir suggests readers consider "different layers of meanings" as "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” (Mir 2004, 39). The latter promotes a “multiple, multi-level” approach (see Guessoum 2011), giving flexibility to readers to find possible connections between the Qur’ān and science: “Find meanings within the verse to correlate with the scientific conclusion. If no words can match the scientific conclusion, then science is to be improved. Find a nonscientific meaning. The verse itself may be pertaining to nonphysical things, such as the unseen, spiritual or existential realities” (Tzortzis 2019).

Meanwhile, Adnan Rashid has continued his commitment to the notion of scientific miraculousness. He occasionally employs historical analysis and mathematical formulae (“codings”) to demonstrate the miraculous nature of the revelation of the Qur’ān to the unlettered Prophet during the seventh century CE. During his interview with Paul Williams on his popular YouTube channel Blogging Theology, Rashid addressed the topic of why the Qur’ān is remarkable (Rashid 2021). According to Rashid, Qur’ān 10:90 (“We took the Children of Israel across the sea: Pharaoh and his hosts followed them in insolence and spite. At length, when overwhelmed with the flood [...]”) has the following internal meaning: “God announces to Pharaoh that ‘your body will be preserved,’ through which people will learn a lesson (Blogging Theology 2021). This interpretation, Rashid says, refers to the mummification of Egyptian kings “only discovered in the nineteenth century” (Blogging Theology 2021). Nevertheless, Rashid does not give evidence for his interpretation that the verse refers to the preservation of pharaoh’s body. Moreover, he does not distinguish between his claim about the mummification of pharaoh and that of Bucaille. Rashid may be called a “historical *i’jazist*,” or one who believes that the Qur’ān contains novel information about ancient communities.²⁶

FINAL REMARKS

Almost every single step taken by Europeans regarding the scientific interpretation of the Bible and biblical scientific miracles was followed by Muslims, beginning in the early nineteenth century CE. European empirical science achieved an important (although not necessarily positive) status in Qur’ānic commentaries. Muslim physicians, followed by religious thinkers and activists, were greatly interested in Western scientific and social developments. Scientific interpretation of the Qur’ān rose quickly in prominence, making inroads into many corners of the world. Muslims translated a large number of early Arabic and Urdu scientific works, using them as exemplars for writing indigenous materials. This type of Qur’ānic interpretation emerged as a social and political instrument, encouraging Muslims to be thoughtful about the Qur’ān’s compatibility with science and unite in competition against Europeans in science and industry.

In the meantime, a new trend called the scientific miraculousness of the Qur'ān emerged, which insisted that modern scientific findings were foretold in the Qur'ān and that it therefore contained scientific information. Through this movement, Muslims have authored a diversity of works, mainly during the twentieth century CE, that they have used to promote theism, prove Muḥammad's prophecy, affirm eschatology, and declare the miraculous nature of the Qur'ān.

Having examined these two trends in the interaction of the Qur'ān and science, it seems clear to me that contemporary Muslims are pursuing the same broad theological objectives that were pursued by the Muslims who sought to apply science during Islam's formative period: to prove the divine origin of the Qur'ān and to affirm the prophetic mission of Muḥammad. These two trends were used to declare the power and authority of God over the universe, a theistic idea that lasted for centuries. However, the most important output of these two trends has been the defense of Muḥammad and his religion, a recursive apologetic procedure.

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NOTES

1. His project was funded by the Keren Hatorah Foundation of America.
2. Due to Macht's efforts, some believers have agreed that "Vayikra 11 and Deuteronomy 14 are both scientifically accurate and sound medical advice" (Messianic Torah Truth Seeker n.d.).
3. <https://www.creationresearch.org/general-information>.
4. For example, the physicist George Earl David wrote "Scientific Revelations Point to a God" and the mathematician and astronomer Peter W. Stoner wrote "Genesis I in the Light of Modern Astronomy."

5. Some records shows that the title of his book *al-Tafsīr al-'ilmī li-l-Āyāt al-Kawmīyyat fī l-Qur'ān* (*Scientific Interpretation of Cosmological Verses in the Qur'an*) was initially *Mu'jizāt al-Qur'ān fī Wasf al-Kā'ināt* (*Qur'anic Miracles Describing the Cosmos*).

6. Some of al-Ghamrāwī's works were produced in the late 1930s and early 1940s.

7. Thanks to Nidhal Guessoum for his initial advice to elaborate on this issue.

8. Additionally, various Arabic works on the miraculous nature of the Qur'an, like those of Mustafā Šādiq al-Rāfi'ī (d. 1937), were translated into Persian in the 1940s. See Khorramshāhi (1997, i:255).

9. Niāz-mand also published a book entitled *I'jāz-e Qur'ān az Manzar-e 'ulūm-e emrūzi* (*The Miracle of the Qur'an from the Perspective of Modern Science*) in Tehran ca. 1947.

10. Bāzargān published several works on Islam and science, including scientific miracles, that can be found in the Bāzargān Foundation collection. After Bāzargān, more Iranian scientists were inspired to interpret Islam using French and English scientific theories, which they had studied in Europe or learned through reading European literature. An example of this trend is Zabīhollāh Dabīr, the Persian translator of the French physician and surgeon Maurice Bucaille's book. Dabīr published his essays and articles on Islam (and science) in Iranian Islamic magazines like *Darsahā'-ī az maktab-e Islām* between 1960 and 1974.

11. For example, *The Natural Sciences* by M. 'A. Daftari, M. Shāhin, M. Behzād, et al. and *Man, The Unknown* by Alexis Carrel.

12. *Nahj al-Balāgha*, *al-Kāfi*, *Biḥār al-Anwār*, and Mullā Šadrā's philosophical teachings.

13. Farīd Wajdi (on the Spirit), Sayyid Quṭb (on theological arguments).

14. Kumayl prayer.

15. Qur'an 39:21 ("Seest thou not that Allah sends down rain from the sky, and leads it through springs in the earth? Then He causes to grow, therewith, produce of various colours: then it withers; thou wilt see it grow yellow; then He makes it dry up and crumble away. Truly, in this, is a Message of remembrance to men of understanding").

16. Bucaille published several other works with themes related to Islam and science. For more about his publications and his critics, see Daneshgar (2019).

17. Thanks to Stefano Bigliardi for his helpful advice.

18. Most of these gatherings were held in Saudi Arabia, such as the Islamic Solidarity Conference in Science and Technology in Riyadh in 1976 and the 1977 First World Conference on Muslim Education and Its Possible Implications for British Muslims at the King Abdul Aziz University in Jeddah. For more see, Chodkiewicz (1976) and Iqbal (1978).

19. http://www.way-to-allah.com/wunder_des_islam_texte/wissenschaftler/kroner.html.

20. Moore notes that "the translations of the verses from the Qur'an which are interpreted in this article were provided by Sheikh Abdul Majid Zandani" (Moore 1986, 15). For further joint projects conducted by Moore and al-Zindāni, see Guénon (2019).

21. Moore coauthored a reference book, *Developing Human: Clinically Oriented Embryology*, that briefly addresses Qur'anic allusions to human embryology and anatomy. One of the book's coauthors, T. V. N. (Vid) Persaud (Department of Anatomy, University of Manitoba, Canada), later delivered a lecture at a number of gatherings of Canadian Muslim associations in 1988, as well as at the Cairo conference on Qur'anic inimitability around 1989, where he approved the inclusion of modern embryology in Qur'anic exegesis.

22. The number of Iranian scholars interested in such topics has increased. Their works are, however, divided into different themes, like astronomy, physics, mathematics, medicine, biology, health, evolution, and chemistry, among others. I reviewed one of these thematic works, *Health in the Qur'an* by Mohammad Nouri, for an elective essay during one of my bachelor courses, which was later delivered in national seminars from 2005 to 2011 and finally published only in English (not in Persian) in 2012/2013 (see Daneshgar and Shah 2013).

23. There are a number of hair salons in Germany, like Memo's Hairclub, that promote Yahya's ideas.

24. See their Telegram channel at <https://t.me/ZimMuslimsCODawah>.

25. Shi'i Islamic seminaries are usually called *hawzah*, whereas *pondok* generally refers to Islamic boarding schools in the Malay-Indonesian world (Malaysia, Indonesia, and southern Thailand).

26. In line with the second reviewer of this article, I agree that non-Muslim YouTube debates on religion and science, like those of Daniel Dennet, have had a significant impact on Muslim literature. For example, see "Daniel Dennett—Do Science and Religion Conflict?" (Closer to Truth 2022).

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