



The Role of Al-Kawniyyat Verses in The Glorious Qur'an On Contemplation and Scientific Discoveries: The Neglected Treasures

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Abstract: Despite the fact that the Qur'an, 16:89 has described the Qur'an as a book which clarifies everything, available evidence suggests that most Muslims have neglected the most important treasures of *al-kawniyyat* verses (verses related to creation) as tools for both contemplation and scientific discoveries. This study has adopted a qualitative systematic review design to analyze these treasures. The relevant data were collected from the Qur'an, published reports and articles, and analyzed by thematic approach. The results show that the Qur'an contains many *kawniyyat* verses that in addition to laying-down the foundation for contemplation of the wonders and majesty of Allah (S.W.T) in His creation, they also direct us how to understand and applying them for scientific and technological discoveries. This is through the *kawniyyat* verses that direct or invite us to make observations on different creations, contemplating and drawing lessons from them, that narrate to us about science and technological advancements of the previous nations and inviting us to contemplate and draw lessons from them, that have used physical, chemical and biological similitudes to describe or allude to different creations and inviting us to contemplate and draw lessons from them, that describe or allude to various mechanisms of creation and invite us to contemplate and draw lessons from them, that indicate the source of iron (and other heavy metals), exposing many benefits of using them and directing us to use them, that promise that Allah (S.W.T) will continue to show us his signs in the universe and within ourselves and inviting us to contemplate and draw lessons from them. This study is offered as a modest attempt to stimulate our psychological motivation with a view to enhancing and enriching our understanding on how to deal with *kawniyyat* verses.

Keyword: *Kawniyyat* verses, scientific discovery, contemplation, scientific research, universe, muslim golden age

1. Introduction

The phrase *al-ayat al-kawniyyat* is made up by two Arabic words: *al-ayat* and *al-kawn*. The word *ayat* has many meanings. Among others, they include sign, token, mark, miracle, indication, wonder, lesson, warning, marvel, model, exemplar, paragon, masterpiece, Qur'anic verses, passage, saying and utterance (see the Hans Wehr and Al-Mawrid dictionaries; Mu'jam Al-Lughah Al- 'Arabiyyat Al-Mu'asarat, Kaherah, page 1974). The word *al-kawn* (plural: *al-akwaan*) comes from the word *kana* which means to be, existent, reality, to happen, occurrence, incident, the cosmos and the universe. However, the most popular meaning is that of the cosmos and universe (see Hans Wehr dictionary). The word *al-kawniyyat* is a modifier to *al-kawn*; which stands as an adjective to *al-ayat* (Mukhtar, 2008 in Hilmi *et al.*, 2016).

On the other hand, *al-kawn* refers to all kinds of creation that exist. These include the ones in the deepest or lowest heaven such as stars, planets, moons and the ones on and in the planet earth such as mountains, clouds, oceans, rivers, valleys, animals, plants, humans, oil, minerals, rocks, underground waters, fishes, parasites, algae, microbes and so on. With regard to our subject matter, the phrase *al-ayat al-kawniyyat*; simply *kawniyyat* verses, means the verses of the Qur'an, which mention or are related to the cosmos/universe, or creation. According to Halmi, 2016, the phrase *al-ayat al-kawniyyat* means the verses of the Qur'an, which tell us about the creation or about the universe whether directly or indirectly.

When we read the verses of the Qur'an, we encounter many verses that either 'mention' or 'allude to' or 'expose' or 'describe' various creations that exist. These verses are scattered throughout the Qur'an. In my humble understanding so far, I have not been able to identify even a single *kawniyyat* verse in only two chapters of the Qur'an [namely, Al-Bayyina & Al-Ma'un]. This has very far-reaching implications. With this regard, the specific focus of the present study is to analyze thematically the role or position played by these *kawniyyat* verses in the Qur'an.

It is hoped that this study may rekindle the interest of Muslim scholars in enhancing and enriching their understanding on how to deal with *kawniyyat verses*; and ultimately provide us with the opportunity to contemplate about the wonders and majesty of Allah (S.W.T) in His creation.

2. Statement and Justification of the Study

For centuries after the fall of ancient Rome, scientific development in Western Europe slowed down almost to a standstill. In the Muslim world, however, a Golden Age of scientific discoveries flourished from 7-17th century (Ahmad, 2006). The exact period of that Golden Age varies, while others say it was from 9-15th (Bakari, 2008), some say it ranged from 7-16th century (Al-Hassani, 2012). However, it is widely agreed that, the early Muslim scholars had the intellectual leadership from 8th/9th to 13th century (Diogo *et al.*, 2016). This flourishing traversed from theories, inventions, devices, processes, ideas first conceived, to the discoveries adopted, developed and spread (Al-Hassani, 2012). According to Al-Hassani (2012) and Turner (1995), it was the knowledge from the Qur'an and ahadith/sunnah that spurred early Muslim scholars to devoted their time and energies in collecting, translating and improving different branches of knowledge, namely, natural and social sciences, from other civilizations such as Romans, Greeks, India, China, Persia, ancient Mesopotamia and ancient Egypt.

This is quite obvious, because various verses of the Qur'an; particularly Surat An-Nahl, 16:89, makes clear the fact that the glorious Qur'an is an exposition of everything; including the invitation to the scientific discoveries that are among the important drivers of both social and economic development (Anaeto *et al.*, 2016). That is why, as reported above, the scientific discoveries of the early Muslim scholars - such as educators, geographers, historians, artists, artisans, sociologists, economists, engineers, architects, physicians, chemists, astronomers, biologists, and mathematicians - contributed to the social and economic development of their societies. Their inventions in almost all spheres of life; such as home, schools, hospitals, market, towns, world and universe, shaped the way we live today (Al-Hassani, 2012; Fix, 2008). Hence, it is self-evident that, the *kawniyyat* verses in the Qur'an are the treasures that stimulated the early Muslim scholars to mount scientific research, which ultimately led to their social and economic development.

It is quite distressing to note that today, we as Muslims who read the same Qur'an and ahadith/sunnah, are trailing far behind in the quest for knowledge and scientific discoveries compared to the non-Muslims of the West. The available evidence shows that, 46 Muslim countries of Organization of Islamic Cooperation (OIC); a proxy of the Islamic world, contribute 1.17% to the world science publications compared to 1.66% of India and 1.48% of Spain. OIC countries have 8.5 scientists, engineers, and technicians per 1,000 populations as compared to 40.7 of the world average and 139.3 for OECD countries. Twenty Muslim countries contribute about 0.55% as compared to 0.89% of Israel alone (Anwar & Abu Bakar, 1997). The most recent data shows that, scientific investment, and productivity across the OIC; as measured by Research and Development Expenditure (R&D expenditure) and numbers of publications/patents, is lower than might be expected in relation to its population size. The OIC has nearly a quarter of the world's population, 2.4% of its R&D expenditure, 1.6% of its patents and 6% of its publications. This little contribution is among the main contributing factors for the lagging behind of the Islamic world in-terms of scientific discoveries, which in-turn puts them behind in social and economic development.

This observation indicates that our crisis in learning and research is primarily driven by our failure to adopt a proper methodology in reading *ayat al-kawniyyat* and the inevitable corollary of poor psychological motivation to do meaningful research. It is quite obvious that even the richest Muslim countries are also lagging behind in R&D. The present study makes a thematic analysis of how the Qur'an directs people to use appropriate methodology in understanding *kawniyyat* verses and putting them into practice.

3. Methodology

This study has used a qualitative systematic review study design. The translations of the *kawniyyat* verses were collected from the leading commentators of the Qur'an, namely, Tafsir Al-Qur'an Al-'Adhwim of Al-Imam Ibn Kathir, Al-Jaamiul Ahkaamil Qur'an of Al-Imam Al-Qurtubi, Tafsir Jalalyn of Jalal Ad-Din Al-Mahali and Jalal Ad-Din As-

Suyut, and The Message of the Qur'an of Muhammad Asad. Translations of key words and phrases were collected from Al-Mawrid and Hans Wehr dictionaries. Data concerning the status of Muslim ummah in scientific research were collected from reports and published articles screened from different online databases. Keywords used were *kawniyyat* verses, scientific discovery, contemplation, scientific research, universe, and Muslim Golden Age. The collected data were then analyzed by using the thematic approach to show how the Qur'an directs its readers to the relevant methodology of reading *kawniyyat* verses and putting them into practice through contemplation and scientific research.

4. Results and Discussion

4.1 Number of *Kawniyyat* Verses in the Qur'an

Different researchers have come up with different figures as far as the number of *kawniyyat* verses in the Qur'an are concerned. Some say there are aver 900 *kawniyyat* verses in the glorious Qur'an (Muslim, 1996), others put the figure at more than 1000 (Naik, 2000). Some scholars claim that there are almost 1000 that are stated directly and many more that are stated indirectly (Al-Najjar, 2007). The findings in the present paper show that there are more than 1844 *kawniyyat* verses in the Qur'an, that corresponds to more than 30% of the total verses of the Qur'an. However, it should be noted that these figures are but tentative. It should be understood that the knowledge revealed in the Qur'anic verses is vast and far more diverse. In the Surat Al-Kahf, 18:109 and Surat Luqman, 31:27 Allah (S.W.T) reveal that [the interpretation] of His words cannot be exhausted.

In the Surat 'Imran, 3:7 Allah (S.W.T) has classified His ayat into two main categories: *muhkamat* [that are entirely clear] which are the very foundation of the Qur'an and *mutashabihat* [the allegorical] which are not entirely clear for many readers of the Qur'an. So, other *kawniyyat* verses may fall under the category of *mutashabihat*. Even then, Allah (S.W.T) has promised in Surat Fussilat, 41:53 and Surat An-Naml, 27:93 that He will be showing us His signs as time goes on. So, with each passing generation more and more *kawniyyat* verses will be identified. In addition to that, Ibn 'Abbas (R.A) has been quoted by Gohar, 2016 to have said that, in this book of Allah (S.W.T) there are signs that will be understood as time passes by.

4.2 The Role of *Kawniyyat* Verses

The findings show that *kawniyyat* verses in the Qur'an have come in different forms or categories that direct us how to understand and put them into practice. Here below are some of these forms or categories:

1. The verses in which Allah (S.W.T) has used the phrase وَمِنْ آيَاتِهِ [and among His signs] to show us His *kawniyyat* signs found in the universe and our planet Earth. In this category, there are about 11 verses: Qur'an, 30:20-25, 46, 41:37, 39, 42:29, 32. This is an indirect instruction given to us to observe and research them empirically. On the other hand, the use of this phrase in this perspective reveals the fact that there are two main categories of verses: the verses that have been written down in the book, i.e., the Qur'an itself, and the verses that we can see, hear, taste, smell and sense by our sense organs.
2. The verses that narrate about the scientific and technological achievements that Allah (S.W.T) gave to previous prophets and previous generations in the span of human history. About two verses have been included in this category, Qur'an, 18:93-96 and 34:10-11. In the Qur'an, 18-93-96, Allah (S.W.T) has narrated the story of Dhur-Qarnain. When he reached between the two mountain-cliff she built a barrier of wall between the two mountain-cliffs. In building this wall, he used pieces of iron and poured on it melted copper. In the Qur'an, 34:10-11 Allah (S.W.T) has narrated to us about Histwo prophets [Dawud and Sulayman (R.A)] to whom He gave the ability to melt and use iron and copper. There are no redundant words in the Qur'an. Every verse bears an important message to us. The above verses constitute an indirect invitation to us to explore different aspects of sciences and technologies such as engineering, architecture, mining, factories, industries etc. for the benefit of mankind, here on earth and hereafter.
3. The verses that have used physical, chemical and biological similitudes to indicate the *kawniyyat* signs or signs from other field of studies. In this category, Allah (S.W.T) has used every kind of similitude to teach His messages to people, see for example, Surat Zumar, 39:27. The use of similitude is an encouragement to us to make careful observations on these similitudes in relation to the message delivered in the Qur'an.
4. The verses that describe various mechanisms of creation such as the water cycle (Qur'an, 39:21, 23:18 & 30:24), stages of human creation in the uterus (Qur'an, 23:12-14, 22:5 & 40:67) formation of milk in cattle (Qur'an, 16:66) etc. Description of the various mechanisms implies that we are required to understand them. However, since we cannot understand them without carefully planned observations and research, the aspect of scientific observations and researches is clearly alluded to in these verses.
5. The verses that promise that Allah (S.W.T) will continue to show us His signs in the universe and within ourselves. In this category, there are two verses: Qur'an, 41:53 & 27:93. Since human beings cannot see what is in the universe and what is within ourselves without having tools and equipment for observations, this implies that we are being prodded to devise tools and equipment for making such observations with the conviction that Allah (S.W.T) will reveal those signs to us. That is why the Qur'an 29:69 and 53:39 have cautioned us against entertaining false hopes of success without any efforts on our part.

6. The verses that invite or remind us to look [to see] at different creations. In this category, there are about 27 verses. These verses are Qur'an, 6:99, 10:101, 50:6, 45:4, 51:20-21, 30:8, 67:3-4, 88:17, 16:66, 23:21, 80:24, 56:58-71, 86:5, 34:9, 41:53, 27:93, 3:191 and 29:20. Some of these verses; like Qur'an, 56:59, 63-71, have come in the interrogative form. To look or to see at *al-kawn* implies to observe by using the sense of perceptions, and often such observations may involve the use of sophisticated tools or equipment.
7. A verse which addresses the source of iron (and other heavy metals) and their mighty powers. In this category, there is one verse, Qur'an, 57:25. In this verse, Allah (S.W.T) has pointed out the source of iron (and other heavy metals) [explosions of massive stars, supernova explosions] and its various uses. In view of the interpretational credo that the Qur'an does not contain any superfluities, this single verse has very wide-ranging implications. For example, it places upon us the burden of conducting space observations to uncover the mechanism behind the source of iron (and other heavy metals) and researching its (their) sources in our planet Earth for our uses in science and technology. There is also a clear allusion that superior military power is a necessary condition for establishing justice on earth. Iron and other mineral resources are crucial in this regard.
8. Imperative verses that directly command us to travel on planet earth so that we can observe how Allah (S.W.T) originated the creation and how He destroyed the previous communities. In this category, there are about 8 verses. These verses are Qur'an, 3:137, 6:11, 27:69, 30:42, 40:21, 40:82 and 47:10. Again this is a direct invitation to us to carry out empirical research as a life-long endeavor.
9. A verse which praises people who contemplate the creation of the universe and our planet Earth while standing, sitting, and lying down. These people have been given a special name that reflects the qualities of their intellects, *ulul albaab* [men of understanding]. This signifies the importance of contemplating and researching on the *kawniyyat* signs.
10. The verses that either allude to or describe the *kawniyyat* signs and at the end they use special phrases which invite thinking readers to engage in scientific studies. Some of these phrases are; there are indeed signs for men of understanding (Qur'an, 3:190), verily, therein is indeed a sign for a people who have wisdom (Qur'an, 16:66); for those who see (Qur'an, 24:44); for those who have faith with certainty (Qur'an, 45:4) etc. See **Fig. 1**.

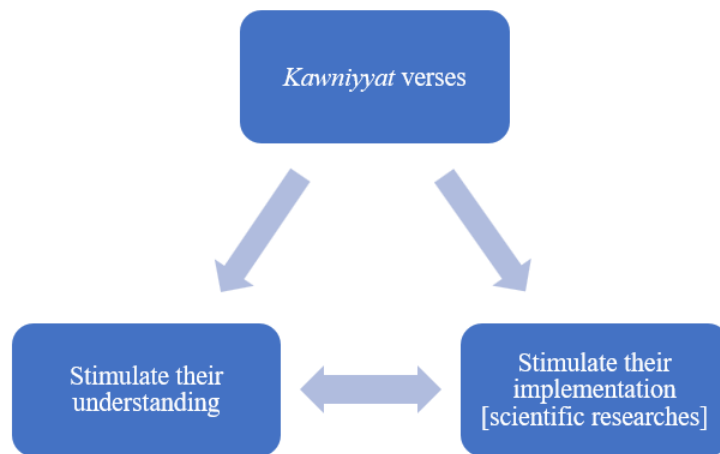


Fig. 1 - The role played by *kawniyyat* verses in the glorious Qur'an, which is to stimulate understanding and implementing them in-terms of scientific research

Therefore, from the foregoing we can draw the following methodologies in dealing with these verses:

1. Reading the Qur'an with reflection between the lines, with special consideration to words and phrases used in those verses, with reference to the world around us or within ourselves.
2. Going out there to observe what we have read in the Qur'an, with or even without the aid of tools and equipment. See **Fig. 2**.

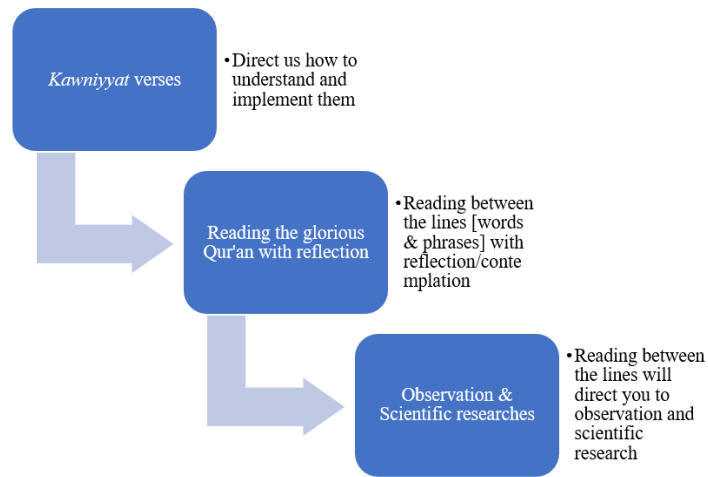


Fig. 2 - Appropriate methodologies of reading the *kawaniyyat* verses

Based on these methodologies deduced from the above *kawaniyyat* verses, it is obvious that, the Qur'an has directed its readers to engage in scientific observations in order to enhance and enrich our understanding of *kawaniyyat* verses and in turn provide us with a glimpse of the wonders of the Qur'an and the majesty of Allah (S.W.T). It is through this process that we make tremendous strides in scientific discoveries that may contribute to our social and economic development.

5. Conclusion and Recommendations

The data presented on this paper highlight the fact that *kawaniyyat* verses are unique treasures for both contemplation and scientific discoveries but from which we rarely benefit. It has been shown that Allah (S.W.T) has given human beings open access to these treasures. This open access has been given through the *kawaniyyat* verses that direct or invite us to make observations on different creations, contemplating and drawing lessons from them, that narrate to us about science and technological advancements of the previous nations and inviting us to contemplate and draw lessons from them, that have used physical, chemical and biological similitudes to describe or allude to different creations and inviting us to contemplate and draw lessons from them, that describe or allude to various mechanisms of creation and invite us to contemplate and draw lessons from them, that indicate the source of iron (and other heavy metals), exposing many benefits of using them and directing us to use them, that promise that Allah (S.W.T) will continue to show us his signs in the universe and within ourselves and inviting us to contemplate and draw lessons from them. Therefore, the door is open, every human being; whether Muslim or non-Muslim, has been invited or encouraged to read them thoughtfully and to engage in self or group observations of nature in order to uncover its miracles and contribute to scientific discoveries.

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