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Introducing an Original Method in Evaluating the Scientific Miracle of the Qur'an

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ABSTRACT:

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Proving the miraculous nature of the Qur'an as one of the methods to believe in the Qur'an as a divine text has always attracted the attention of the researchers of the Qur'an; nevertheless, the published efforts on this subject are facing numerous methodological challenges. This research attempts to introduce a new and original method exempt from the challenges of the present methods by utilizing some of the techniques in mathematical sciences, logic and statistics. This scientific case-based method rates the effective parameters in the recognition of scientific miracle for one case. Accordingly, it will calculate the certainty of each case and proceeds to combine the ratings of various cases of scientific miracle to calculate the degree of certainty of the divine nature of the book based on those results. In combining the ratings, a threshold will be determined based on human belief behavior. An advantage of this method is that it is extra-religious, data driven, quantitative, applicable to all texts, and generalizable to the entire content.

KEYWORDS: scientific miracle of the Qur'an; methodology of the miraculous nature of the Qur'an; science and religion; interdisciplinary studies of the Qur'an; evaluation method; digital humanities.

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1. Introduction

According to the beliefs of Muslims with an intra-religious approach, the Qur'an has divine origins and it is based on divine revelation, similar to other holy books and scriptures, and it presents the guidance plan for humans and goes beyond other holy books and scriptures. It also displays the truthfulness of its messenger and in theological terms, its miracle, i.e., inimitability. On the other hand, with an extra-religious approach, the Qur'an, being of divine nature, is an issue that can be explained and proved with different methods. One of these methods is to prove the miraculous nature of the Qur'an through the inability of humans to bring about a similar text. There have been many endeavors to prove the uniqueness of the Qur'an in its various attributes. One of the miraculous aspects of the Qur'an which has drawn conflicting ideas of many contemporary thinkers today is the scientific aspect in which a great deal has been spoken and written by both supporters and opponents of this notion. Some argue that the language and purpose of the Qur'an and science are different and, therefore, the scientific interpretation of the Qur'an is not possible; Others, however, have argued about the compatibility of science and the Qur'an, relying on the clear expression of the Qur'an and its precise choice of words (Rūḥānī, 2020). Not considering those who, based on their principles of understanding the Qur'an, basically do not permit discussing the scientific miracle of the Qur'an (Bustami, 2018), the various disputes in this regard goes back to analyzing the examples of the scientific miracles of the Qur'an. Adopting a tolerant approach, some consider all statements of the Qur'an and explain natural phenomena as examples of scientific miracles and some others, based on the conditions and criterion validity, question the certainty of all claims of the scientific miraculous nature of the Qur'an. This research refrains from tolerance towards accepting claims of scientific miracles and, in light of the numerous probable examples for the scientific miraculous nature of the Qur'an, attempts to propose a method to evaluate quantitatively the scientific miracle and, therefore, prove the miraculous nature of the Qur'an.

2. Conceptology of the Scientific Miraculous Nature of the Qur'an

According to theological definitions, a miracle is an extraordinary event inexplicable by natural causes alone (McGraw, 2019; Rūḥānī, 2021 according to which one who claims prophethood carries it out by challenging others, and no one else can perform anything similar (Suyūṭī, 1422/2001, 2:228), and it is therefore a sign of the truthfulness of the Prophet's claim (Khu'ī, 1326 AHS/1947, 37-38). Narrations of the Qur'an also refer to miracles as

extraordinary events (the Qur'an 7:107, 3:49, 5:110, 10:77, 27:13, 46:7; Gril, 2003, 393-396) that Prophets performed by God's permission when faced with denial from the people of their time (the Qur'an 26:154, 7:106, 26:23-30). No other human being could perform such extraordinary events, not even those who had special supernatural or priesthood powers (the Qur'an 7:107-126; Rūḥānī, 1400/2022). Nevertheless, non-believers called prophets sorcerers and magicians (the Qur'an 40:24), whereas believers viewed the extraordinary events as signs of the prophet's truthfulness (the Qur'an 40:28).

According to Qur'anic verses, even though the miracles of previous prophets were physical, supernatural and extraordinary natural events, the Prophet Muhammad (saw) and the Seal of the greatest miracle of the prophet was the Book, i.e., the Qur'an (Rūḥānī, 1394 AHS/2016); since in response to calls for natural miracles, God refers non-believers to the Qur'an (the Qur'an 29:50-51) and views the Qur'an as sufficient to warn mankind and as the last word (Bāqillānī, 1421/2001, 10-14). Further, God has challenged disbelievers in several verses to bring a chapter similar to the chapters of the Qur'an and reiterates that their inability and failure is a sign of the divine origin of the Book (the Qur'an 52:33-34; 11:13; 10:38; 2:23-24; 17:88; 28:49). This is why various thinkers view the verses that challenge disbelievers as the main Qur'anic reasons that the Book is a miracle (Bāqillānī, 1421/2001, 15-16; Suyūṭī, 1422/2001, 2:228; Ṭabāṭabā'ī, 1423/2002, 7; Mahdāvīrād and Shahīdī, 1393 AHS/2015); although there are differences of opinion in the similarities and challenging aspects in their views (Suyūṭī, 1422/2001, 2:231). The importance of the challenging aspect is clear when the Qur'an is compared to other man-made texts. One of the aspects that has attracted attention in recent centuries is the scientific aspect of the Qur'an's contents or the scientific miracle of the Qur'an. Some scientific propositions exist in the Book that are far beyond the scientific era at the time of the revelation of the Qur'an and today with scientific progress its rightfulness has become clear (Mu'addib, 2000, 195). These scientific propositions are presented as a sign of the divine origin of the Book or the scientific miracle aspect of the Qur'an.

It should be noted that the following verse (the Qur'an 41:53) can point to the scientific miraculous nature of the Qur'an:

سَنُرِيهِمْ آيَاتِنَا فِي الْأَفَاقِ وَ فِي أَنفُسِهِمْ حَتَّىٰ يَتَّبِعَنَّهُ لَمْ يَكُنْ لَهُمُ الْخَبْرُ أَوْ لَمْ يَكُنْ بِرَبِّكَ أَنَّهُ عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ

We will show them Our signs in the horizons and within themselves until it becomes clear to them that it is the truth. But is it not sufficient concerning your Lord that He is, over all things, a Witness? (Sahih International)

This verse notifies that the Qur'an's rightfulness in the future will become clear with mankind's scientific progress in natural horizons and their inner beings (Muḥammad Najjār, 1423/2002, 14).

The scientific miracle of the Qur'an can occur under three circumstances: first, the verse is explicit in the intended meaning (Riḍā'ī Iṣfahānī, 2002, 53); second, the scientific truth is valid and precise (Riḍā'ī Iṣfahānī, 2002, 50); third, this scientific truth was not discovered by mankind or human civilization at the time of the revelation and it would be completely unknown for the people of that time (Mu'addib, 1379AHS/2000, 195; Muḥammad Najjār, 1423/2002, 36; Riḍā'ī Iṣfahānī, 1381AHS/2002, 85).

3. *Background of the Methods of Assessing the Miraculous Nature of the Qur'an*

Structured and scientific discussion about the miraculous nature of the Qur'an began from the late second/eighth or early third/ninth century (al-Ḥumṣī, 1400/1979, 50); formerly only litterateurs, poets, eloquent orators, authors and elites could feel the miraculous nature of the Qur'an with all their soul and considered it a clear and evident matter (Mahdāvīrād and Shahīdī, 1393 AHS, 170; 'Abd al-Raḥmān, 1404/1983, 1:39). 'The Miraculous Nature of the Qur'an idea' was developed by Muslim scientists from the third/ninth century and reached its peak in the fourth/tenth century (Mahdāvīrād and Shahīdī, 1393 AHS/2015, 190). The early theories on the miracle aspect of the Qur'an presented by Muslim thinkers at the end of the third/ninth century were related to the three aspects of *ṣarfah*, i.e., the arrangement and design of the Qur'an and informing of the unseen¹ (Karīmīniyā, 1392 AHS/2014, 138). Accordingly, some scientists and scholars strove to expand these aspects to the extent that Suyūṭī counts 35 aspects of miracles (Suyūṭī, 1422/2001, 2:231) and Riḍā'ī Iṣfahānī has collected 80 aspects (Riḍā'ī Iṣfahānī, 1392 AHS/2014, p 198 – 204); these efforts can be studied and analyzed in terms of their method of evaluation. One of the methods that Qur'an researchers have adopted is using intra-religious reasoning. In this method, reasoning and arguments are only limited to the verses of the Qur'an and Hadith. For example, the absence of discrepancies in the Qur'an's content and the fact that all books written by mankind have discrepancies in their contents is considered as one of the aspects of Qur'an's miracle (al-Qāḍī al-Asadābādī, 1965, 387). One of the major challenges with this approach is the circularity of the

1. Divine prevention of the competent from taking up the challenge of producing the like of the Qur'an (Ed).

argument whereby the miraculous nature of the Qur'an is used as a premise for the claim that Qur'an is irrefutable, which is itself proven based on the infallibility of the verse stating that there are no discrepancies in the Qur'an. In the beginning of the third/ninth century another aspect of the miraculous nature of the Qur'an, i.e., *ṣarfah*, was mentioned by Nazzām (Mahdaviṛād and Shahīdī, 1393 AHS). This method, which ushered in various interpretations in all instances to prove the miraculous nature of the Qur'an, points and refers to other sources besides the essence of the Qur'an (Qāḍīzādah, 1374 AHS/1995). This argument holds that it is God himself that prevents a text resembling the Qur'an in its qualities from coming to existence to challenge the complexity and elegance of the Qur'an itself. Another approach to prove the miraculous nature of the Qur'an is the style central method, in that the Qur'an contains special styles and order unattested other writings ('Abd al-Raḥmān, 1404/1983, 1:239; Qāsimpūr, 1389 AHS/1990, 62). Furthermore, in addition to the eloquent characteristics, content features concerning the Qur'an's style, for instance, the existence of fundamental and basic verses and allegorical verses and the abrogating (*nāsikh*) and abrogated (*mansūkh*) verses, the existence of depth and secrets and the semantic layers of the Qur'an can be viewed in this approach. One of the challenges of the style-oriented method is that even if it is proven that the Qur'an has a special style, this is not enough to prove the miraculous nature, i.e., the inimitability of the Qur'an.

It was in the fourth/tenth century that some books were authored for the first time on the miraculous nature of the Qur'an in which the inimitability of the Qur'an in terms of eloquence, literature and literary value by mentioning some of the eloquent verses and statements referred to as the miraculous aspect and element of the Qur'an ('Abd al-Raḥmān, 1404/1983, 1:100; Riḍā'ī Iṣfahānī, 1392 AHS/2014, 81). This aspect of the miracle of the Qur'an, which can be viewed as a literary example-oriented method, was deliberated by other thinkers in various ways in the following centuries. Not having enough elements to prove the miracle of the Qur'an from the verse in question and also the inability to generalize the example to the whole text of the Qur'an are some of the challenges of this method. Qur'an's news of the past and predictions future form an aspect of the miracle of the Qur'an which led to another subject raised by researchers of the Qur'an from the beginning of the miracle discourse ('Abd al-Raḥmān, 1404/1983, 1:92). According to this method, by relying on verses that point to events in the future, attempts have been made to prove the miracle of the Qur'an (Mu'addib, 1379 AHS/2000, 173-176); this approach may be termed 'news from the unseen.' Pointing to the victory of the Romans following the defeat of the Persians in the time span

of several years and also the prediction of the conquest of Mecca can be seen as examples of utilizing this method. Not being able to verify some of the examples, doubting the supernatural aspect of other examples as well as the manner of application of the example to the whole text are some of the challenges of this method.

Another method to prove the miraculous nature of the Qur'an, is the historical method; in this method by relying on historical narrations contemporaneous with the revelation of the Qur'an, the litterateurs writing in Arabic were at the peak of eloquence, but failed to respond to the challenge of the Qur'an in writing a similar text; therefore, they concluded that future generations who would be less eloquent in producing literary works would be unable to do likewise (Abd al-Raḥmān 1404/1983, 1:78). Even though this reasoning is fairly convincing, but temporal and spatial limiting of the challenge and miracle and also the uncertainty in historical propositions are its weak points. In the sixth/tenth century, Sakkākī introduced the idea of the visionary aspect of the miracle of the Qur'an (Ma'rifat, 1388 AHS/2009, 53-54). Proponents of this argument state that even though the miracle of the Qur'an can be felt and understood, it is inexplicable and indescribable. This method of proving the miracle of the Qur'an used by others in other aspects of the miracle of the Qur'an can be called visionary and the important problem and issue with it is its personal and unverifiable nature. Until the fourth/tenth century, the stated aspects did not result in new methods of proving the miraculous nature of the Qur'an. Iskandarānī in the fourth/tenth century was the pioneer of the idea of the scientific miracle of the Qur'an (Qāsimpūr, 1389 AHS/1990, 154-155). This aspect of the miracle also appealed to some later thinkers. In this approach, examples are analyzed and Qur'anic propositions are compared with new scientific findings and discoveries; this is why this method is termed the scientific case-based method. The challenges lie in the manner of its application to the whole text. The last method pointed out here is to focus and consider the special mathematical order in the Qur'an. Rashad Khalifa for the first time obtained mathematical and numerical relations from the Qur'an and contributed to this aspect of the miracle of Qur'an (Riḍā'ī Iṣfahānī, 1392 AHS/2014, 172-173). In this method, generalization is logical, rather than evident, random, and impossible to imitate or repeat by mankind and they thus form the necessary conditions for the miraculous and inimitable nature of the Qur'an and the absence of any of these characteristics is considered a challenge in this method.

Table 1. *Methods of proving the Scientific Nature of the Qur'an and their challenges*

Method	Description	Challenges
Intra-Religious	Based only on the religious text for reasoning	The existence of circular reasoning or logic
<i>Ṣarfah</i>	Citing external sources to prove the miracle of the Qur'an	Not proving the miraculous nature of the Qur'an
Style-Oriented	Proving a special style in the Qur'an	Insufficient to substantiate the argument
Literary Case-Based	Qualitatively studying the literary, eloquent statements of the Qur'an	Unverifiable even for the example itself and unclear manner of its application to the whole text of the Qur'an
News of the Unseen	Citing verses that predict future events	Unverifiable, doubting the supernatural aspect of other examples and also the manner of application of the example to the whole text
Historical	Reasoning towards priority according to a historical proposition	Arabs at the time of revelation not being a priority, uncertainty of historical propositions
Visionary	Visionary and indescribable understanding	Being personal unverifiable
Scientific Case-Based	Comparing Qur'anic propositions with new scientific findings and discoveries	The degree of attention to the method of comparing the verses of the Qur'an with scientific findings and also the manner of its application to the whole text
Special Mathematical Order	Extracting mathematical and numerical relations from the Qur'an	Generalizability, logicity, unclarity, systematicity and inimitability

4. *The Proposed Method*

In view of the above and the inadequacies of the existing methods of proving the miraculous nature of the Qur'an, a new method to verify the proposed scientific miracles needs to include the following features:

1. It should be applied to all texts;
2. It should be quantitative and calculate the degree of divine certainty of the book;
3. It should reduce the subjectivity;
4. It should be extra-religious, which means that it does not rely on religious presuppositions;
5. The proposition of the scientific miracle of the Qur'an should not be refuted or disproved with the slightest skepticism in the vital variables of the miracle (understanding the concept, the accuracy of the scientific matter, the authenticity of the matter, and the precedence of the expression over the others);
6. A low score should seriously deteriorate the effect of proposed cases;
7. Belief in the claimed miracles should increment by aggregating miracle cases and adding them up in time;
8. Its flexibility should allow the substitution of hypotheses where there are discrepancies in any of the numerical assumptions.

The steps of this method are shown in Figure 1:

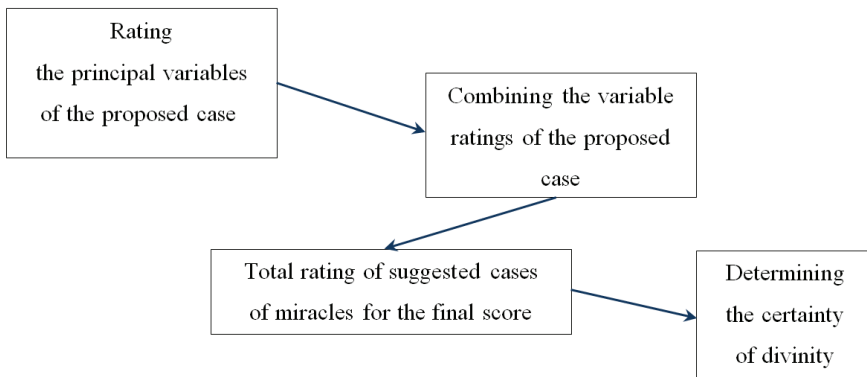


Figure 1. *General stages of the proposed method*

In this model, to begin with, a score between zero to one is given for the parameters of explicitness, validity, accuracy, precedence and authenticity. The definition of these variables is provided in the following example:

And We have sent the winds, and We have sent down water from the sky.
(the Qur'an 15:22)

The two propositions p and q (the meaning we derive from the verse and what we infer from the translation to reach the scientific content) are expressed as follows:

And We sent the winds to conceive, and We sent down water from the sky (p)
It is possible to cause precipitation by seeding the clouds (q).

Now the relevant parameters can be defined for all texts including the Qur'an as follows:

1. Explicitness: The degree of confidence in the correctness of p ;
2. Validity: The degree of confidence in inferring q from p ;
3. Accuracy: the degree of confidence in the credibility of the scientific portion (q);
4. Precedence: the degree of certainty that the statement(q) was not present in the scientific era of the speaker or author's time and could not have reached them from the natural path of the progress of science;
5. Authenticity: The degree of certainty that the statement was given at the time it is claimed to be made and it belongs to the specified speaker.

It must be noted that when a scientific proposition (Accuracy) is beyond the state of the art of a given time-frame (Precedence) and is conceived (Validity) from a clear, explicit (Explicitness) and authentic (Authenticity) proposition, it can be concluded that the probability of this proposition originating from the human mind, decreases.

By referring to three experts in this domain, these values are obtained by averaging their ratings:

Explicitness: 0.8 Validity: 0.8 Accuracy: 1 Precedence: 0.95 Authenticity: 1

In the following step, we must combine these parameters and reach a single score for an item. In order to combine these variables, the following key points should be considered for suggested operators:

1. Each of these parameters must be higher than the threshold (tr_1) specified by the experts, otherwise the score of the combined parameter will be close to the lowest value of the parameters;
2. The resulting number is still between zero and one, so operators such as the sum of these combinations are certainly not appropriate;
3. Expert intuitions can be used in rating and the closest operator to these intuitions will be used.

Based on this method, nine hypothetical claims of miracles with different ratings can be seen in Table 2, which on the one hand have been combined with various techniques based on the above I to III points, and on the other hand, the average intuition of three experts is calculated to be able to choose the best combination method.

Table 2. *Nine hypothetical cases with the values of explicitness, validity, accuracy, precedence and authenticity variables along with the average assessment of experts for the final score of each case*

Expert's Assessment	Explicitness	Validity	Accuracy	Precedence	Authenticity
0.7	0.9	0.8	0.91	0.7	1
0	0.2	0.5	1	1	1
0	0.8	1	0.9	0.7	0.3
0.1	0.5	0.6	1	0.5	0.6
0.85	0.8	1	0.9	0.9	1
0.2	1	1	1	1	0.4
0.75	1	1	1	0.7	0.9
0.8	0.9	0.9	1	0.7	1
0.51	1	1	1	1	0.51

According to the fundamental points mentioned, in order to calculate the final score of each item, several methods and operators can be suggested. In this regard, in Table 3, six operators are proposed, which are depicted in the following points:

1. Multiplication: Since all parameters are less than or equal to one, their multiplication will undoubtedly be less than or equal to one as well. This product of multiplication will at most be equal to the minimum value of the claimed variables. Obviously, in this operator, the degree of weakening in most cases, will be very high.
2. Harmonic mean: Each of the arithmetic, geometric and harmonic means for numbers less than one will be less than one as well, but the harmonic mean has the property that it is closer to a smaller number than the other two means (Xu, 2009) and therefore it is more suitable in this case.

3. Using the threshold (tr_i): If any of the parameters is lower than the specified threshold (tr_i) (for example 0.7) the operator's value will become zero otherwise the harmonic mean is selected.
4. Minimum: Minimum parameters will increase or decrease by 10 percent, in proportion to how far the parameters are from the minimum.
5. Multiplication and harmonic: The multiplication of parameters is placed below the threshold (tr_i) in order for further attenuation, and its harmonic average is placed above the threshold (tr_i).
6. Multiplication and minimum: If each of the parameters is lower than the threshold (tr_i), for further attenuation but not to become zero, the parameters are multiplied as in the previous operator and for other cases it is used like a minimum operator.

Table 3 shows the results of the execution of the above six operators for the combination of the five parameters. Based on the experts' assessment column, it is clear that the "multiplication and minimum operator" is more appropriate than the others.

Table 3. *The output of the suggested operators on ten hypothetical cases*

Multiplication	Harmonic Mean	Threshold (tr_i)	Minimum	Multiplication and Harmonic	Multiplication and Minimum	Expert's Assessment
0.45	0.84	0.84	0.72	0.84	0.72	0.7
0.1	0.5	0	0.21	0.1	0.1	0
0.15	0.61	0	0.31	0.15	0.15	0
0.09	0.6	0	0.48	0.09	0.09	0.1
0.64	0.91	0.91	0.84	0.91	0.84	0.85
0.4	0.76	0	0.44	0.4	0.4	0.2
0.63	0.9	0.9	0.75	0.9	0.75	0.75
0.56	0.88	0.88	0.74	0.88	0.74	0.8
0.51	0.83	0	0.56	0.51	0.51	0.51

The equation of the selected operator is given below:

$$S_k = \begin{cases} \left(\frac{M_3 - M_2}{1 - M_2} \times 0.4 = 0.2\right) \times M_2 + M_2 & \text{for } M_2 < tr_1 \\ T_k \times C_k \times D_k \times V_k \times H_k & \text{for } M_2 < tr_1 \end{cases} \quad (1)$$

Where there is the score of kth case.

$$M_1 = \text{mean}(T_k, C_k, D_k, V_k, H_k) \quad \text{Average of five variables}$$

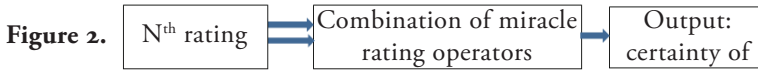
$$M_2 = \text{min}(T_k, C_k, D_k, V_k, H_k) \quad \text{Minimum of five variables}$$

$$M_3 = \frac{5M_1 - M_2}{4} \quad \text{Mean of the four variables except the minimum}$$

$$tr_1 = 0.69 \quad \text{Threshold of weakening}$$

5. The Aggregation of Cases' Score

The manner in which the various claimed miracle cases are combined in order to achieve the degree of divine certainty of the text is shown in Figure 2.



As it was stated before, the principles of aggregation to attain the degree of divine certainty are as follows:

1. The effect of each item on increasing the degree of divine certainty and decreasing the certainty of being of worldly nature;
2. Being between zero and one due to the degree of certainty;
3. Corresponding to this feature of belief that the slope of increasing belief was high, but declines by increasing the cases.

According to these principles, the function of the degree of certainty can be proposed as follows:

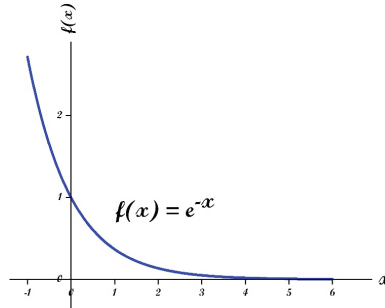


Figure 3. Exponential function with the desired properties for the degree of certainty function (Gumbel, 1958; Ross, 2004)

According to Figure 3, the function starts from one, in the range of zero to infinity and moves with a high slope first and then it is reduced to a low slope moving towards zero. This is exactly the desired behavior to be used as a function of human degree of certainty. Therefore, the degree of certainty can be generally written as follows:

$$P_{h_1}(S) = e^{-r \sum_{k=1}^n S_k} \quad (2)$$

$$P_{h_2}(S) = e^{-r \sum_{k=1}^n S_k^2} \quad (3)$$

Equations 2 and 3 calculate the degree of divine certainty in which $P_{h_1}(S)$ and $P_{h_2}(S)$ are the text's degree of certainty in being of worldly nature, n is the number of rated miracle claims, and S_k is the score of a miracle claim noted in Equation 1. The two formulas differ in the degree to which they diffuse the value of low-confidence scores.

By increasing $\sum_{k=1}^n S_k$ (or $\sum_{k=1}^n S_k^2$), the certainty degree of divine nature of the text, increases to an extent that it equals to the certainty degree of it being of worldly nature. This value of $\sum_{k=1}^n S_k$ (or $\sum_{k=1}^n S_k^2$) is used to calculate r , thus, all the desired range for $\sum_{k=1}^n S_k$ (or $\sum_{k=1}^n S_k^2$) can be considered. For instance, a range of value of $\sum_{k=1}^n S_k$ (or $\sum_{k=1}^n S_k^2$) is assumed that starts with at least five claims with full score (one out of one), and continues with twenty cases with the same score. In other words, r is calculated in proportion to the required threshold (tr_2), based on human belief behavior, to exceed 50% certainty. This threshold (tr_2) in practice is the value that tilts the scale towards the case being a miracle when the sum of claimed cases' ratings reach that value.

In Table 4, the value of r is given in terms of threshold (tr_2) values of 5, 10, 15, and 20 certain miracle cases to reach the degree of 50% certainty.

Table 4. *The values of r are proportional to tr_2*

tr_2	5	10	15	20
r	0.14	0.07	0.047	0.035

In order to calculate the r value of the degree of certainty in Equations 2 and 3 has to be set equal to 0.5. Therefore:

Table 4

$$r = \frac{\ln(2)}{\sum S_k^2}$$

In this case, assuming ten hypothetical claimed miracle cases of Table 1, the degree of certainty of the cases being divine or of worldly nature can be seen in Table 4 using each of the two mentioned equations.

Table 5. *Degree of certainty that the hypothetical cases are of worldly nature using the dual equations*

tr_2	5	10	15	20
The certainty of being of worldly nature using Equation 2	0.54	0.74	0.81	0.86
The degree of certainty of being of worldly nature using Equation 3	0.67	0.82	0.87	0.9

It is clear that by using this method, any book with any number of astounding scientific cases can be evaluated and the degree of certainty of it, being of worldly or divine nature, can be calculated.

6. Summary and Prospective Studies

Having defined the miracle of the Qur'an and examined the challenges faced by using different methods of providing proof for the miraculous nature of the Qur'an, it is essential to provide a new method without the deficiencies of the previous ones.

The result of this research is to present an extra-religious, data-driven, quantitative method that is applicable to all texts, generalizable to the entire content. Finally, by defining the main variables involved in rating the miraculous nature of a content and the method of combining it, a model was presented corresponding to the belief behavior, which by

accumulating each new case, the degree of certainty in the content being of worldly nature would diminish with the increase in the ratings received. It is important to analyze the behavior of the brain in accepting and believing a predicate. This behavior of the brain depends on:

1. The quantity of certain or uncertain cases it takes for a human to believe a specific content;
2. The manner of behavior of the rating combination slope in the beginning, middle and end of the curve.

Table 6 displays the number of miracle examples similar to the mentioned verse, so that the degree of certainty in the worldly nature of the content would reduce to zero.

Table 6. *The number of items required for each of the two equations for calculating the degree of certainty with different belief thresholds*

Equation	Certainty Regarding the Divine Nature of the Text (%)	$tr_2 = 5$	$tr_2 = 10$	$tr_2 = 15$	$tr_2 = 20$
2	50%	6	12	18	24
3		7	14	21	29
2	95%	25	51	77	103
3		31	62	93	124

Table 6 shows that at least 25 and at most 124 predicates in the Qur'an similar to *و ارسلنا الرياح لواقح* are required to reach 95% certainty in believing the divine nature of the Qur'an by adding new cases; this belief will be reinforced. moreover, by regarding other aspects of miracles, this degree of certainty may approach 100%.

The following points are made regarding future efforts:

1. Reaching a more precise rating system by analyzing the concepts of explicitness, validity, accuracy, precedence and authenticity;
2. Examining the viewpoints of more experts to determine intuitive ratings;
3. Utilizing the future developments of cognitive science in discovering more precise characteristics of the evidence-based behavior in order to determine the value of tr_2 .

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Scientific Explanation of Hail Based on Verse 43 of *Surah al-Nūr* from the Noble Qur'an

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ABSTRACT:

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Hail is an atmospheric rainfall with a complex mechanism. The Greeks were among the pioneers of knowledge in ancient times and they termed "hail" as "frozen rain" (Anaximander) and "instant freezing of water and moisture" (Aristotle, n.d.). These two meanings are inconsistent with current scientific facts. The Noble Qur'an is the most authentic text to encourage Muslim believers to think about creation and strengthen their faith in the eternal power of the Creator. For instance, the mechanism of hail falling has been expressed in the verse (Q.24:43) with specific and gradual indications.

In this research, first, by library method, different explanations of this verse were obtained from valid interpretive sources and then, the scientific findings of meteorologists and climatologists on hail were extracted from reference scientific texts on atmospheric sciences. In the third stage and based on comparative method, the scientific rules were placed next to interpretations to test the novelty and degree of the allusions of this verse.

We found that the stages of hail falling included: "invisible water vapor rises from the sea," "water vapor ascends into the atmosphere," "reaching the condensation stage," "cloud formation," "convergence of ascending currents," "formation of cumulonimbus cloud," "growth of hailstones during successive ascents and descents by adsorption and freezing of ice needles," and finally "their fall down over ground" respectively. Meanwhile, the steps in the Noble Qur'an are mentioned in verse (Q.24:43) in the

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following order: “clouds movement slowly,” “clouds convergence,” “clouds accumulation,” “the formation of mountain-like clouds,” and “hail falling from the clouds.” The results also showed that likening cumulonimbus cloud in the verse (Q.24:43) to “mountain” have four respects that were beyond the comprehension of the people at the time of the revelation of the Qur’an. Nowadays, these features are known to stationary and satellite meteorological instruments. These four characteristics are “cloud layer temperature,” “their constituent phase,” “troughs and ridges inside the cloud” and “cloud height up to the tropopause.” Based on these four characteristics, the Noble Qur’an considered the cloud of cumulonimbus as similar as “mountains.” Meteorologists divide any cumulonimbus cloud into three floors, including cold at the bottom, super-cold at the top and intermediate in the middle. We find these three floors in the same way in the high mountains. These floors are the current rivers (liquid phase), snow and ice reserves (solid phase) and in the middle region a combination of two liquid and solid phases, namely water and ice. Images from the cumulonimbus from above the atmosphere show dark and deep valleys and light and raised ridges. The fourth feature is to be said, none of the surface phenomena are as high as the mountains. Finally, meteorological findings show that it is the only cumulonimbus that rises from the ground to a height of 12,000 meters and more.

KEYWORDS: The Qur’an, Scientific Miracle, Atmospheric Sciences, Hail falling Mechanism.

I. Introduction

Atmospheric phenomena have a special place in the Qur’an where they are mentioned in many verses. A study entitled “Extraction and Classification of Climatic References to the Holy Quran” found that the Qur’an has mentioned or spoken about atmospheric phenomena more than 150 times (Ghyasi, 2016, 42). Among the various atmospheric phenomena, rainfall is the main source of water for various uses such as drinking, agriculture and industry. Rain has more abundance (Khodabakhsh, 2009, 103) and is very useful (Emadzadeh, 1983, 367). Hail, meanwhile, is a generally rare and harmful phenomenon. Nowadays, one of the challenges of atmospheric science is to figure out how atmospheric precipitation occurs, among which hail shows a more complex mechanism. Among the damaging atmospheric and even terrestrial phenomena, hail is comparable to earthquakes (Yuan et al, 2011, 3). China Meteorological Agency, for example, estimated hail damage in 2012 at \$4.55 billion. The damage is much more than tropical storms in this country

(Khaza'ei, 2019). In another example, it is said that after the hail on September 11, 2010 in the city of Gorgan, Iran, the insurance companies had to pay 4,850 million Rials to cover the damages incurred in the poor neighborhoods of the city (Khoshhal et al., 2016, 22). In this research, an attempt has been made to test and explain the novelty of the references of the Noble Qur'an to the mechanism of hail falling in the verse (Q.24:43) by a comparative method and by scientific logic.

2. Background Research

Researches about hail may fall into two categories. The first category includes mainly historical sources written by non-Muslims. They were reviewed in the present study for short, long, direct and sometimes indirect references. The second category include the studies conducted by Muslim scholars to explain the scientific references of the Qur'an to the subject of atmospheric sciences.

From the first category, perhaps the earliest sources come from Greece where Greek scholars were relatively more concerned about atmospheric phenomena. These include the definition of wind as "the movement of air" by Anaximander (Horstemier, 2005) and the Greek idea of the existence of multiple gods to blow and create winds in different directions (Garber, 2008). Related to the term meteorology, Fallah (2011, 293) believes that the Greeks, who in ancient times were among the pioneers of atmospheric science, said, "Everything that is seen in the sky is a meteor or air" whether it is a meteorite or a hailstone. Since then, it has taken many years for scientists to distinguish between sky projectiles such as meteors and atmospheric projectiles such as hail. Aristotle (n.d.) is introduced as the founder of meteorology by writing a book to the subject. He attributes rain to cooling of the air in a place where the amount of water vapor increased over time. Aristotle is said to have spoken of the formation of large raindrops, the effect of the droplets joining together. In a treatise attributed to him, the forced entry of moisture into the upper part of the cloud and its freezing is mentioned as the reason and origin of hail. Some of the Greek conceptions of world phenomena are remarkable.

These include the notion of many suns and their rising and setting each day from east to west (Nazari, 1995) and the inversion of humans if they go to the southern hemisphere (Barati, 2007). It was generally believed that in each hemisphere, there were three climates: warm at the equator, cold at the poles and temperate at mid-latitudes.

Therefore, the lack of proper understanding of the mechanism of hail in this period is not surprising. Of course, in later periods and during the heyday of Islamic civilization, these views evolved from their simple and sometimes unrealistic form. During this period, Islamic scholars such as Muḥammad al-Maqdisī (Nazari, 1995, 36) divided the world into fourteen climatic regions in the 4th/10th century.

Now, the purpose of this article is to extract the exact references of the Noble Qur'an about hail and provide scientific explanations for them. These references can indicate the trans-temporal and super-human nature of the text of the Qur'an. From the second category, some scholars acknowledge that the Noble Qur'an is not a book of natural sciences, though some atmospheric phenomena such as winds ('Ali, 2012, 91), rain (Rahmdel, 2005, 14; Hajikhani & Jalilian, 2017, 25) and clouds (Alavimehr & Sadeghi, 2014, 13) have been explained in the Noble Qur'an. In the case of hail, less independent research was obtained. In some of these researches (Ghyasi, 2016, 42), the researcher has reached verse (Q.24:43) to translate it and explain the summary and stages of this event based on today's knowledge.

Meanwhile, Rostami and Shahinpur (2015, 25) in a study, by regularly presenting the views of Qur'an translators, have discussed the slips of translators in translating two verses of the Noble Qur'an, including verse (Q.24:43). In this study, accurate references are made to hail-specific clouds, including the super-cold cloud. In another study, Najafi (2015, 1), examining a quote from Kamil Najjar, claims: "mountains of hail in the sky are not acceptable." In the current research and consistent with new scientific findings, the wonders of the Noble Qur'an will be discussed.

3. *Data and Method*

The method of this study is library type, the findings are presented in three sections: historical, Qur'anic and scientific. We have expanded these stages including to "search and classify of ancient believes," "search and classify of different annotations," and "present and accommodating of new results in atmospheric sciences." These three stages were essential because of the following notes:

- The necessity of the first stage was to determine what the level of knowledge of the people was at the time of the descent of the Qur'an. For example, how does the interpretation of the phrase *yuzjī saḥāban*' in 24:43, meaning "driving clouds slowly," fit into the Greek view on the origin of winds?

- In the second stage, what was the commentators' explanation of the words and phrases of the verse for the audience? For example, what justification have the commentators provided for likening the cloud to a mountain in the phrase *min al-samā' min jibāl*?¹
- In the third stage, to what extent do the explanations of the expressions of this verse, given by the commentators, correspond to the indisputable findings of meteorologists and climatologists?
- How can the commentators' statements be based on the indisputable findings of meteorologists and climatologists from the collection of references in this verse? For example, the commentators' explanation of the phrase *min jibāl* as "the collapse of a mountain of hail on the ground" was presented to today's findings to make it clear that the meaning of "mountain" here is "the volume of hail" or "structural features of the cloud." Basically, what are the scientific characteristics of mountains that the Noble Qur'an has preferred to liken clouds to mountains?

In the course of this research and after all the three stages, the miracles of the Noble Qur'an in this verse need to be extracted according to the following criteria:

1. The scientific aspect presented in the verse should be explicit and obvious.
2. The novelty of the interpretation of the Qur'an should not be compromised by the scientific findings of the time of revelation.
3. The scientific interpretation presented in the verse is compatible with today's scientific findings.

4. Results and Discussion

Prior to the revelation of the Holy Qur'an, human findings about the mechanism of hail formation were limited. The advances in meteorology instruments during World War I and World War II revealed more facts about atmosphere, including the type of hail-clouds and their mechanism. "The movement of clouds by wind," "the convergence of clouds," "their condensation and accumulation," "the likeness of these clouds to mountains," and "Hail falls from the cloud" are five facts that the Qur'an (Q.24:43) refers to as the signs of divine omnipotence. It seems that the first three were visible for people from earliest times but the last two facts were revealed by modern science. The Arabic word *barad* "hail" is mentioned only once in the Qur'an (Q.24:43).

.I .مِنَ السَّمَاءِ مِنْ جِبَالٍ

أَلَمْ تَرَ أَنَّ اللَّهَ يُرْزِقُ سَحَابًا ثُمَّ يُؤَلِّفُ بَيْنَهُ ثُمَّ يَجْعَلُهُ رُكَّامًا فَتَسرى الْوَدَقَ يُخْرِجُ مِنْ خِلَالِهِ وَ يُنَزِّلُ
 مِنَ السَّمَاءِ مِنْ جِبَالٍ فِيهَا مِنْ بَرَدٍ فَيُصِيبُ بِهِ مَنْ يَشَاءُ وَ يَصْرِفُهُ عَنِ مَنْ يَشَاءُ يَكَادُ سَنَا بَرْقِهِ يَذْهَبُ
 بِالْأَبْصَارِ (النور/43)

Have you not regarded that Allah drives the clouds, then He composes them, then He piles them up, whereat you see the rain issuing from its midst? And He sends down from the sky hail, out of the mountains that are in it and He strikes with it whomever He wishes and turns it away from whomever He wishes. The brilliance of its lightening almost takes away the sight.

Based on meteorological science, hail formation stages begin with the ascent warm and humid air during an unstable day. After ascending, the humid air reaches the stage of water vapor condensation and it appears as a cumulus cloud, a set of thin droplets. Convergent winds grow cumulus clouds and as it pushes them together, it turns them into cumulus congestus. The result of the cumulus congestus clouds merging and their climbing is cumulonimbus cloud that is a hail cloud (Fig.1).

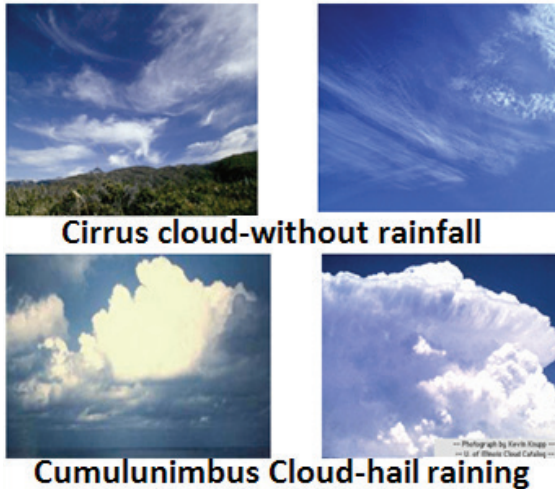


Fig.1 Difference between cumulus and stratus clouds (Strahler & Strahler:1992)

The base or lower part of the cumulonimbus cloud is very watery and close to the ground surface. Although, Najafi (2015, 1) has called the hail-cloud extremely cold and icy, but the base of the cloud has a temperature above 0°C. In fact, this is the lowest floor of the cloud. In the upper layer of the cloud, the second floor, the temperature is between zero and -40°C (Fig.4).

There is a combination of liquid droplets and ice needles in this floor. All these droplets and needles are floating. These are constantly screwed up and down by air currents. This cloud rises to a height of 12 to 13 thousand meters. In this floor, which is the third floor, the temperature is -40°C . Only icy needles are seen here. The droplets of the lower floor, even if they are distilled, that is, free of any dust and impurities, cannot keep themselves freezing in this floor.

In this class, icy droplets and icy needles undergo two processes. One of these processes is rimming and it means sticking together and the other process is amalgamation, i.e., to become mass. Thus, the primitive nuclei of hails form. Sometimes, ice needles join together and they form groups. They fall down into second or even the first floor, crush due to surface melting and come in the form of seeds. If these seeds return to the second and then third floors, they freeze, attract more ice needles, and grow further. These ups and downs can be repeated over and over again.

These movements are performed among the three classes of cumulonimbus by high-speed and powerful air currents. The speed of the currents may reach up to 175 km/h (Bal et al, 2014). Every time that the hailstones go up and attract ice needles, one ice and transparent layer takes over and every time that it goes down, it melts slightly from the outer surface and takes an opaque layer on it and they look like onions. By splitting large hailstones, its alternating transparent and opaque layers look like onions (Fig. 2).

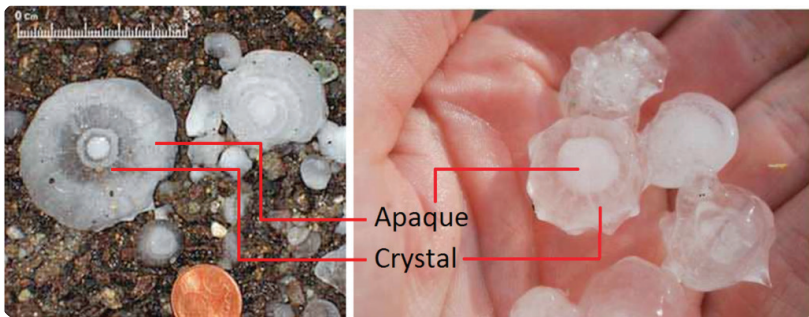


Fig.2 *The morphology of hailstone (Media-bom, 2018)*

4.1. *Qur'anic Explanation*

The words and phrases considered in interpretive sources in terms of position and meaning are presented in Table 1. The most important of them which related to hail include: the slow movement of clouds (*yuzjī saḥāban*), their

convergence (*thumma yu' allifu baynahu*), accumulation and density of clouds (*thumma yaj'alūhu rukāman*), the height of this uplift (*min al-samā'*), the likeness of a cloud to a mountain (*min jibāl*) and falling hail (*min barad*).

Table.1 The terminology and semantics of the verse

Word	Root	Meaning and source
يُزْجِي <i>yuzjī</i>	z-j-w	Drive and push something slowly (al-Farāhīdī, 1991, 165; al-Rāghib, 1993, 378; Ibn Manẓūr, 1995, 354)
سَحَابًا <i>saḥāban</i>	s-h-b	Clouds, whether rainy or rainless (al-Rāghib, 1993, 399)
رُكَّامًا <i>rukāman</i>	r-k-m	Accumulating parts of something on another parts (al-Farāhīdī, 1991, 369; al-Rāghib, 1993, 365; Ibn Manẓūr, 1995, 251)
يُؤَلِّفُ <i>yu'allifu</i>	'a-l-f	To bring together, to join (al-Rāghib, 1993, 81)
الْوَدَقِ <i>wadqa</i>	w-d-q	Rain, whether intense or mild (al-Farāhīdī, 1991, 198; al-Jawharī, 1990, 249; Ibn Manẓūr, 1995, 373)
السَّمَاءِ <i>al-samā'</i>	s-m-w	Height, Elevation (al-Farāhīdī, 1991, 318)
جِبَالٍ <i>jibāl</i>	j-b-l	Mountains, Accumulation of something along with height (al-Rāghib, 1993, 185)
بَرَدٍ <i>barad</i>	b-r-d	Cold, Frozen rain, hail (al-Farāhīdī, 1991, 28; al-Rāghib, 1993, 116)
سَنَا <i>sanā</i>	s-n-w	Light emission from a high place (al-Muṣṭafawī, 1989, 242)

The stages that we find about hail formation and its precipitation are presented in table 2.

Table.2 *The stages of hail formation and its precipitation in the Noble Qur'an from the viewpoint of the commentators*

Stage	Phrase	Meaning	Source
First stage	أَمْ لَمْ تَرَ... يُزْجِي سَحَابًا	Did you not know ... drive the clouds slowly	al-Ṭūsī, 2010, 466; al-Ṭabrisī:1993, 323; al-Farāhīdī, 1991, 165; al-Rāghib, 1993, 378; Ibn Manẓūr, 1995, 354
Second stage	يُؤَلِّفُ بَيْنَهُمْ	The bond between cloud fragments and the formation of large, single piece	al-Ṭūsī, 2010, 466; al-Ṭabrisī, 1993, 233
Third stage	ثُمَّ يَجْعَلُهُ رُكَّامًا	Compression of clouds on top of each other	al-Ṭabrisī, 1993, 233
Fourth & fifth stages	فَتَرَى الْوَدْقَ ... وَيُنزِلُ مِنَ السَّمَاءِ ...	Rain coming out of the clouds ... And hail falls ...	al-Ṭūsī, 2010, 466; al-Ṭabrisī, 1993, 233; al-Zamakhsharī, 1998, 246

In the following, what the commentators have said about this verse has been categorized (Table. 3). Their views are different and the difference alone is clear evidence that the meaning of the verse was beyond the level of knowledge of the people at the time of revelation.

Table.3 *The classification of interpretations of commentators about hail falling*

Class	Interpretation	Source
Early commentators	1. Falling hail mountains from sky 2. Hail falling on mountains from sky 3. Some hail-mountains in sky similar to craggy mountains 4. Hail falling as much as several mountains on ground 5. The mountain is an allusion to the density of hail 6. The mountain is an allusion to the multiplicity of clouds	al-Ṭabarī, 2004, 828; al-Ṭūsī, 2010, 447; al-Zamakhsharī, 1998, 246 last one:Rustami & Shahinpur, 2015 quoting Ibn 'Āshūr:73
	Clouds like mountains	al-Ṭabrisī, 1993, 232
Recent commentators	1. Clouds like high mountains 2. Filled with sleet (ice pellets) 3. Hail falling from mountains in sky	Ṭanṭāwī, 2004, 12-55; Sayyid Quṭb, 1993, 2523; Makarem, 1997, 505; Najafī quoting Kāmil Najjār, 2015, 153

The last phrase or stage about hail falling in the verse is about lightning and its ultra-violet rays (*yakādu sanā barqīhi yadhhabu bi-al-absār*).¹ This stage indicates the occurrence of lightning (electricity) in clouds containing hail. Because the commentators normally saw lightning in the clouds, they considered “sky” or “cloud” as the antecedent of the third person singular pronoun *-hi* in *barqīhi* interpreted it as follows: the intensity of the lightning in the sky is such that it may blind the eyes (al-Ṭabarī, 2004, 290; al-Ṭabrisī, 1993, 233; al-Ālūsī, 1994, 383; Ṭantāwī, 2004, 12-55; Sayyid Quṭb, 1991, 2523; Makarem, 1997, 505). However, according to the rule, the antecedent of the pronoun *-hi* in *sanā barqīhi* may be to the closest word, *barad*, so this phrase can mean lightning caused by hail.

4-2. Scientific Results

Based on principles of meteorology and climatology, we find the mechanism of hail falling in stages as below.

- Slow motion of the clouds in the eyes of the ground observer (*yuzjī*):
The Earth’s atmosphere with an approximate mass of 5.15×10^{15} is composed of various layers with distinct temperature characteristics (Allaby et al., 2006). Although the lowest layer of the troposphere is the most humid and the formation of a hail-cloud requires a lot of water vapor – in fact much more than the general condition. The huge water vapor of the lower atmosphere becomes warmer and warmer during sunny and unstable days in the lowest layer of troposphere. This instability shows itself in the form of invisible bubbles and a lot of small and scattered cumulus clouds appear around noontime.
- Joining the clouds (*yu’allifu*):
Cumulus clouds gradually change to cumulus congestus ones and they all converge to a point with low pressure at the center. The ground observer may not see the convergence due to the low horizon and limited visibility. The ground observer sees the movement of clouds in and out of each other and sometimes even against each other and at different speeds. Hence, the gradual movement of clouds can be witnessed in two ways. One is observation by one pointing down camera on one satellite located above the troposphere layer and the other is designing the cloud mosaic hour by hour (Fig. 3).

1. يَكَادُ سَنَا بَرَقِهِ يَذْهَبُ بِالْأَبْصَارِ

(The brilliance of its lightening almost takes away the sight).

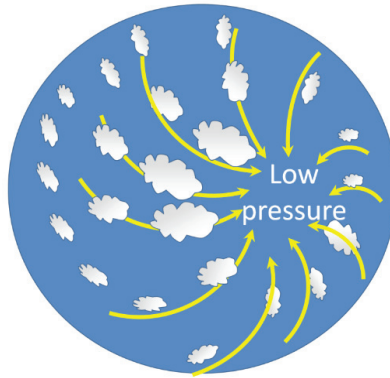


Fig.3 *Gradual movement of clouds on humid air currents with convergent model and their growth (observer from above)*

- Accumulation and density of clouds (*rukāman*):

Cloud formation is not enough for raining unless they join together and grow vertically. Clouds cannot grow vertically unless a factor elevates them from their below and another pulls them up from the atmosphere. The lifting agents of clouds on ground surface are air-masses and mountains. The lifting agent from above the atmosphere is divergence. However, growing clouds are condensing involuntarily. Next, the tiny droplets join to form larger ones. The process which may be compared to squeezing a wet cloth, extracts the water absorbed in the fabric.

According to Omidvar (2003, 48) and Akbari (2005, 16), one million tiny droplets in the cloud must join to form one rain droplet. Also, the collision among droplets is rare because the distance among droplets is about 500 times their diameters. According to Linacre and Greets (1997, 432), different processes cause the droplets to come together in the clouds and make them heavier to the point of falling.

- Formation of a massive cumulonimbus cloud (*min jibāl*):

The convergence and divergence conditions below and above the cloud cause cumulus congests to grow taller and change to cumulonimbus clouds. Kramer (1993) calls it a massive and tower-shape cloud and Houze (1993, 573) calls it hail maker. In these conditions, we find its height more than 10 thousand meters. Really, this is the height of tropopause. This huge pillar bears a structural resemblance above all to the high mountains and based on this structure, hailstones are formed inside the cloud.

In other words, as we find the reserves of “water,” “water and ice” and “ice” on the slopes of high mountains, respectively, from the foot of the mountain to the summit, the same is true of the cumulonimbus cloud. On the lowest floor, “water droplets,” on the middle floor, “water droplets and icy needles” and in the highest class, as Australler & Australler (1992, 592) point out; we find “ice needles” in the form of anvil (Fig. 4).

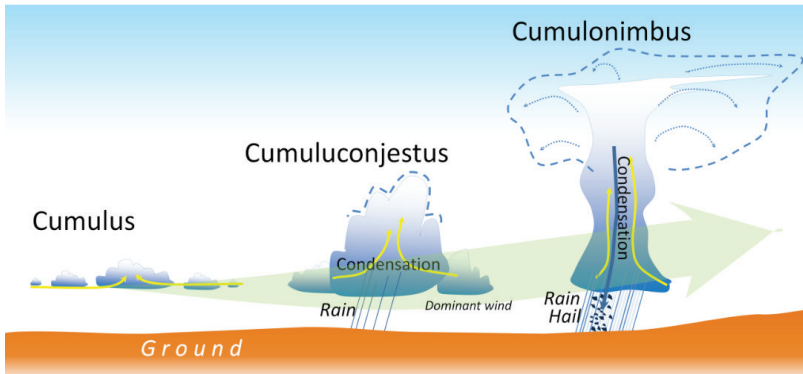


Fig.4 Gradual change of horizontal motion (*yu'allifu*) to vertical motion (in hail cloud) (Pidwirny et al, 2018; primitive sources: Dacre et al., 2012)

Atmospheric science findings indicate that among the various floors of cumulonimbus clouds, numerous air currents, both strong and weak and varying both in ascending and sometimes descending are blowing. Close-up images show one body resembling very large mountains with deep, dark valleys.

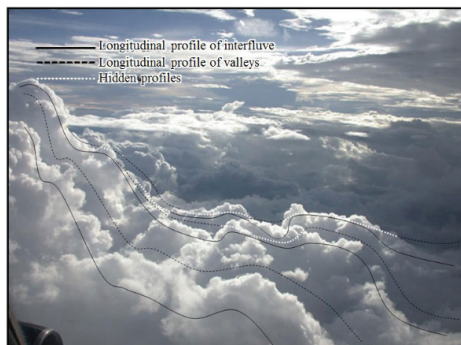


Fig.5 Amplitude of hail clouds from the observer's point of view above the atmosphere

- Hail falling (*fiḥā min barad*):

Atmospheric science findings show that every time a frozen drop of water travels from the lower floor to the middle or upper floor, many icy needles stick to the surface and thus the hailstone increases in volume.

When the rising current is unable to support the weight of the hail, the hail overcomes the fall and strikes according to the Qur'an. In many cases, just as a hailstone travels downhill, it enters a stronger ascending current in the middle floor and even the lower floor and returns to the top and it is possible to increase growth. This process may be repeated many times and even make a hailstone, the size of a baseball. In this case, even casualties can occur (Fig. 6).

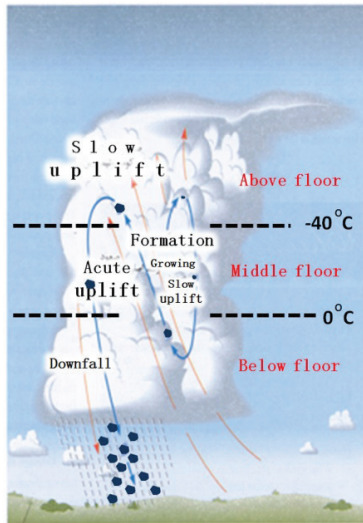


Fig.6 Hail grain growth within the cumulonimbus cloud

- Lightning and thunder (*sanā barqihī*):

Another feature of cumulonimbus clouds is the occurrence of terrible lightning and thunderstorms. Lightning is generally defined as the discharge of electrical charge in the atmosphere. William (1999, 21) suggests that the collision between falling particles and suspended particles, transfer positive charges to fine and light particles and negative charges to heavier particles and cause the lower part of the cloud to be negative and the upper part to be positive.

4-3. Comparison of Scientific and Qur'anic Findings

Scientific findings about the mechanism of hail formation and precipitation, based on Table 4, corresponds to the expression of the Noble Qur'an in the verse (Q.24:43). Regarding the disagreement of the commentators, it is not acceptable for mountains to rise in the sky and fall on people. Until now, the greatest celestial object landing, not on people but in a desert and not of ice, but of stone and not in the shape of a mountain, but in the shape of a comet has happened. What can be obtained from presenting these findings on the verse (Q.24:43) shows the miracle and modernity of the interpretation of the Qur'an from 1400 years ago.

Table.4 Correspondence of the references of the Noble Qur'an in (Q.24:43) with scientific findings

Stages of hail in science	Hail in the Qur'an	Important words
Gradual convergence of scattered cumulus clouds	أَمْ تَرَأَنَّ اللَّهَ يُزْجِي سَحَابًا Dispersal of scattered clouds	يُزْجِي Pushing and driving something
Establishing a link between them	ثُمَّ يُؤَلِّفُ بَيْنَهُمْ And the link between them	يُؤَلِّفُ Brings together, connects
Dominance of vertical upward movements over horizontal convergent movements and conversion of cumulus to cumulus congestus and finally cumulonimbus	ثُمَّ يَجْعَلُهُ رِجَامًا Cloud density	رِجَامًا Density and accumulation
Growth of droplets and their transformation into droplets by the process of convergence and apparent rainfall from the point of view of the ground observer	فَقَتَرَى الْوَدْقَ يَخْرُجُ مِنْ حِلَالِهِ Raining	الْوَدْقَ Rain
Formation and growth of hailstones in reciprocating motions among the below and up floors and into the long slopes of the massive cumulonimbus cloud and finally their downfall on the ground	وَيُنزِلُ مِنَ السَّمَاءِ مِنْ جِبَالٍ فِيهَا مِنْ بَرَدٍ Hail collapses from mountain-like clouds	بَرَدٍ Frozen rain (hail) جِبَالٍ Gathering of the mountain السَّمَاءِ Height
Lightning in the cloud for two reasons: 1. Induction of electric charge inside the cloud 2. Induction of electric charge on the surface of hail grain due to the coexistence of hail and ice crystals	يَكَادُ سَنَا بَرْقِهِ يَذْهَبُ بِالْأَبْصَارِ Electricity and electric field during hail	سَنَا propagation of the ray of light from a high place, taking into account the reference of the pronoun "hu" in sanā barqihī to al-samā, saḥāb or barad

5. Conclusion

It caused the commentators to fail to understand the meaning of the phrases in the verse and as a result, differences and sometimes confrontations arose between the interpretations. These findings can be divided into two categories. The first category is the findings that scientists had before the era of the revelation of the Qur'an about the mechanism of hail. An example of this is the expression "hail from the highest part of the cloud from Greece." The second category is the findings that Muslim scholars have had from the verse. "Ice mountains colliding in the sky and hail falling due to the crushing of part of these mountains," "large amounts of hail accumulate on the ground" and "hail falling on the mountains" are among these findings (Fig. 7)

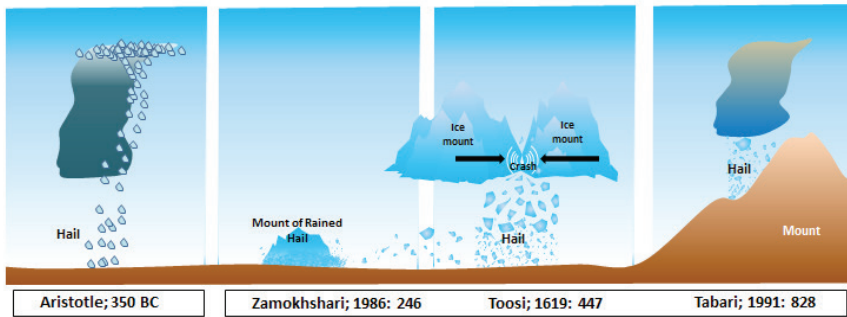


Fig.7 Approaches to how hail falls from ancient Greece and the early commentators of the Noble Qur'an

What is stated in (Q.24:43), about the mechanism of hail in the Noble Qur'an, it can be gradually explained by the findings of today's atmospheric sciences. These steps include "moving the clouds slowly," "clouds convergence," "their density," "mountain-cloud formation," and "raining hail from it." Researchers showed that the verse contains scientific hints unknown until the revelation of the Qur'an. Formation of a cloud body of three floors from the bottom of "liquid," "liquid and solid" and "solid," respectively and its similarity in the same order to the high mountains from the foot of the slope to the summit includes "flowing rivers," "flowing rivers and snow and ice masses" and "integrated masses of snow and ice" conform to the findings made possible by advances in geology, hydrology, geography and meteorology.

These findings could reveal the secret of comparing this cloud (*sahāban*) to a mountain (*jibāl*) (Fig.7). Matching the stages of hail with expressions in 24:43, hail can occur partially and rarely in atmospheric systems of

fronts, especially cold fronts, but in the same systems, the two stages of “slow movement of clouds” and “their convergence” respectively are *yuzjī* and *jibāl* and the process takes a few days. This movement and convergence in convective systems begin in the early hours of the morning, it peaks in the afternoon with the formation of the nimbostratus cloud.

Nowadays, on the one hand, with the help of technologies such as accurate imaging and sending satellites to higher levels of the atmosphere, simplicity and weakness of Greek historical explanations and the shortcomings and sometimes inaccuracies of Qur’anic interpretations related to the mechanism of hail are identified.

On the other hand, the accuracy of the Qur’anic expression in (Q.24:43) about the mechanism of hail is shown. This atmospheric process occurs in specific stages and in about two to four hours. In this process, water vapor accumulated in the lowest layer of the atmosphere manifests itself in the form of cumulus clouds. These clouds converge, then join together and then condense in a column like a mountain. This accumulation allows hailstones to form, float and grow within the three layers of the column of cumulonimbus cloud. The last stage is the dominance of hail weights over the strength of ascending currents and thus the beginning of hail falling. By reflecting on the formation of rain and hail and applying the Qur’anic studies related to the verse (Q.24:43), the cases of its scientific miracles are specified as follows:

1. In the first part of the verse, the stages of rain and hail formation include cloud drift, the link between clouds and lateral and stacking clouds is expressed. We find, given the following statements, no one has addressed it before:
 - If the word *sahāb* means cloud in singular, the verse refers to the bond and accumulation of the internal components and droplets of the cloud and the formation and precipitation of rain. Hence according to the scientific confirmation and the impossibility of seeing this phenomenon by individuals, the verse has a miracle.
 - If *sahāb* is the plural of the word *sahāba*, there are two possibilities regarding the meaning of the verse:
 - The verse describes the stages of rain and hail formation, which scientifically in this case, after the accumulation of cumulus clouds and the formation of cumulonimbus, rain and hail occur consecutively. The miracle of this statement is also evident. Scientifically, it does not always rain before hail. The verse refers to the separate formation and precipitation of rain and hail. In this case, the ascent of *wa yunazzilu min al-samā’* will be a turning

- point to *fatarā al-wadq*. Thus, the miracle of the verse is about the stages of formation in both phenomena. According to the theory of “permissibility of using the word in more than one meaning in the Qur’an” both cases can be correct. In other words, the Qur’an conveys both meanings in one word.
- The phrase *wa yunazzilu min al-samā’ min jibālin fihā min barad* refers directly to hail from mountains in the sky. This reference is consistent with the scientific explanation of the descent of hailstones from tower-shaped and mountain-like clouds called cumulonimbus. Also nowadays, the amplitude of the clouds with deep valleys and prominent ridges is notable. This fact has been revealed by flying above them and preparing satellite images. Hence, the scientific miracle of this noble verse is certain.

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Formation of the Universe from the Viewpoint of the Qur'an and Science

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ABSTRACT:

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In the matter of the formation of the universe, the holy Qur'an mentions various phenomena, each playing a special role in the evolution of the universe. In this article, we describe two celestial phenomena that have been discussed in verses (Q.21:30) and 41:11, and we assess the possibility of matching these two verses with new scientific findings.

Our approach in this study is that we first examine the plausible meanings of the verses through lexical, morphological, syntactic and interpretive analysis. Then we propose possible scientific phenomena compatible with achieved meanings of the verse and evaluate their conformity.

Results of this study show that the reference of the Qur'an to the two phenomena, i.e., "coalescence and separation of the skies and the earth," and "the formation of the sky from smoke," can be compatible with the scientific phenomena of the Big Bang, the formation of the solar system and the formation of the earth and its atmosphere.

KEYWORDS: Sky, Heaven, Creation, The Big Bang, Solar system, Atmosphere, Scientific interpretation of Qur'an.

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1. Introduction

Faith and science are two sources of knowledge. They both try to give an understanding of the truth by different languages and from diverse viewpoints that are not necessarily conflicting. Accordingly, efforts have been made to show the harmony of the Bible and the Qur'an with science on the issue of creation (Hartin, 1989; Hesseler, 1960; Matt, 1996, 'Arafāt, 2003; al-Fayyūmī, 2003; al-Jamīlī, 2000).

Many verses of the Holy Qur'an describe how the universe came into being in detail. In this article, we examine the possibility of conformity between two phenomena, among the various phenomena mentioned in the Qur'an, "*coalescence and separation of the skies and the earth*" (Q.21:30), and "*the formation of the sky from smoke*" (Q.41:11) with new scientific findings.

Several studies have been done on the scientific adaptation of these two verses with natural phenomena until now ('Arafāt, 2003, 32; al-Fayyūmī, 2003, 68; al-Jamīlī, 2000, 15). However, what makes this study different from the other is that we have a comprehensive look at the verses and their various semantic possibilities and we try to examine and to evaluate all possible scientific explanations regarding these verses. However, in similar studies, the verses have not been considered from this perspective and only a scientific phenomenon close to the meaning of the verse has been attributed to it.

Our method in investigating each phenomenon is as follows: first we discuss the main verse describing the phenomenon from the lexical, morphological, syntactic and interpretive point of view. Then, by considering the possible scientific explanations, we study the strengths and the weaknesses of each possibility. Because of the important role the word *samā'* (sky) has in both verses, before proceeding with the main discussion, we study briefly the applications of this word in the Holy Qur'an.

2. Applications of the Word *al-Samā'* (the sky) in the Qur'an

The word *samā'* is derived from the root *s-m-w* "height, altitude, sublimity" (al-Farāhīdī, 1988, 7:318; Ibn Fāris, 1979, 490; Ibn Manẓūr, 1993, 14:397; al-Zabīdī, n.d., 38:301). Al-Rāghib (1991, 427) ascribes that *samā'* of anything is the space above it. According to Ibn Fāris (1979, 490), the Arab uses the word *al-samā'* for anything high and preponderant. Hence, this word has a wide domain of meanings and it is frequently attested. Therefore, to determine its exact applicability in each verse, we need to regard the counterparts as well as the context. *Samā'* and its plural form,

samāwāt, have been used 310 times with and without the definite article in the Holy Qur'an.¹ Considering their different applications, one can deduce the following results:

1. Sometimes *samā'* is used with article and with an absolute meaning opposed to the word *arḍ* (the earth) and can mean all the skies (Q. 3:5; 14:38).
2. Sometimes it is used to mean celestial bodies (stars and planets) or their positions in the sky (Q. 25:61; 22:65; see Rezaei, 2009, 135; al-Šādiqī Tehrani, 1986, 20:167; al-Mughnīyah, 2003, 5:346; Mudarrisī, 1998, 8:113).
3. Sometimes it is used to mean the earth's atmosphere, clouds or rain. On this subject, one can mention the downfall of rain from the sky. It should be noticed that the word *samā'* has been used in singular form whenever the downfall of rain is concerned (Q. 30:48; 15:22; 71:11; see Makarem, 1995, 1:121; Jafari, 1997, 1:83; al-Ṭabrisī, 1993, 1:451, 4:428).
4. *Samā'* is sometimes used in the sense of immaterial heaven, and this is the case when it possesses the meaning of the location of immaterial phenomena (Q. 7:40; 67:16-17; see Tabataba'i, 1996, 16:248; Makarem, 1995, 6:170; Ibn 'Āshūr, 1999, 8:96, Qorashi, 1998, 408).

The word *samāwāt* is the plural form of *samā'* which is often used with definite article versus *al-arḍ*, and points to all the skies. As we know, using the definite article preceding a plural form indicates generality.

3. Coalescence and Separation of the Skies and the Earth

In the verse (Q. 21:30), God refers to the fact that the heavens and the earth were first connected and united, and then God separated them:

أَوْ لَمْ يَرَ الَّذِينَ كَفَرُوا أَنَّ السَّمَاوَاتِ وَالْأَرْضَ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا وَ جَعَلْنَا مِنَ الْمَاءِ كُلَّ شَيْءٍ حَيًّا أَ فَلَا يُؤْمِنُونَ (الانبیاء/30)

Did those who disbelieved not see that the skies/space and the earth, they were joined, so We split them?

In this verse, God Almighty says that the skies and the earth were joined and unified in the beginning, and then God Almighty split them. The word *ratq*, opposite of *fatq*, means to unify and to join and modify gaps (al-Farāhīdī, 1988, 5:126; Ibn Manzūr, 1993, 10:114). *Ratq* is said to have the meaning of coalescence too (al-Rāghib, 1991, 341; Ibn Manzūr, 1993, 10:114; al-Ṭurayhī, 1996, 5:166; al-Muṣṭafawī, 1981, 4:43). *Fatq* means to be opened

1. In total, the words *al-samā'*, *samā'*, *al-samāwāt* and *samāwāt* have been used 118 times, 2 times, 185 times and 5 times respectively.

or a gap in something (Ibn Fāris, 1979, 834). According to al-Farāhīdī (1988, 5:130) anything unified which has been split is called *fātq*.

The verb *kānatā* in the first clause has been used in binary form, since its pronoun refers to the words *al-samāwāt* and *al-arḍ*. The form *ratqan* which has been used in singular form, is the subject of the verb *kānatā* and so, according to the general rule, should be in binary form. Some commentators believe that since this word is infinitive, it is used with plural, binary and singular nouns in the same way (al-Ṭūsī, 2010, 7:243), even though it has a passive participle, namely *martūq*¹ (Tabataba'ī, 1996, 14:278). Al-Zamakhsharī (1986, 3:113) claims that the word *ratq*, herein, is as an adjective for the omitted noun and implies “those two were a unified thing” (*kānatā shayan ratqan*)². However, some argue that it implies “those two had coalescence” (*kānatā zawāṭay ratq*)³ (al-Ṭabrisī, 1993, 7:72; al-Rāzī, 1999, 22:137).

Considering each of these implied meanings in the verse, causes the presumption of a different meaning. In other words, if the implied meaning of the verse in question is taken to be “those two were a unified thing” (*kānatā shayan ratqan*), the meaning of the verse will be that the skies and the earth were single and unified. However, if the implied meaning of the verse is “those two had coalescence” (*kānatā zawāṭay ratq*), then the meaning of the verse will be that each of the skies and earth have their own special coalescence (*ratq*) separately. In other words, the skies were connected together and the earth was distinctly self-connected.

Interestingly the words in the verse have been used in a way that both tacit forms above are acceptable, and no reason can be presented to reject one and prefer the other. Therefore, it leads one to state that the verse can contain both meanings.

3.1. The Possible Scientific Explanations of the Verse

Depending on which coalescence and separation from the scientific point of view is concerned particularly by the Holy Qur'an, a number of possibilities are considered:

1. The coalescence considered is unification of everything, including the materials of the earth and the sky, in the very early stages of the universe right away after the Big Bang and the separation of them is referred to the rapid expansion occurred thereafter which has led to the formation of the sky and the earth as they are today.

1. مرتوق

2. كاننا شيئاً رتقاً

3. كاننا ذواتي رتق

2. The coalescence here is the union and the unification of the sun, the earth and other planets of the solar system inside the primary nebula, which was the origin of the formation of the solar system. The separation, then, is considered to be the evolution of the nebula and final formation of the solar system as it can currently be seen.
3. The coalescence is taken to be the separate unification in the skies and in the earth, and is related to the era when the downfall of rain from the sky and the growth of plants on the earth had not yet begun. In other words, the sky being connected and unified means the lack of rainfall, and the earth being connected and unified means the lack of plant growth from it. Thus, the phenomenon of the separation and splitting of the skies and the earth is in accordance with the beginning of the initial rains from the sky and the growth of the first plants from the earth. It is worth noting that this point of view has confirmation from tradition.¹

3.2. Investigating the Strengths and Weaknesses of the Possible Explanations

After presenting the possible explanations for the phenomenon of the coalescence and the separation of the skies and the earth from the scientific viewpoint, we examine each of these possibilities and their accuracy:

3.2.1. The First Possibility

As mentioned earlier, in this possibility the coalescence is considered the unification of the material of the earth and the sky at the beginning of the Big Bang and their separation means the rapid expansion of that initial point that led to the formation of the universe according to the Big Bang theory.

The Big Bang theory has the most acceptance among the theories that explain the origin and evolution of the universe. This theory claims the universe we are observing today was formed from the high-speed expansion of one point, approximately 14 billion years ago. The universe has continued expanding thereon. The theory is in agreement with the following observations:

1. It has been quoted from Imam Al-Bāqir (PBUH) when asked about the meaning of this verse: "the sky was unified and connected and there was no rainfall and the earth was unified and connected and there was no plant growth from it, then God Almighty opened the sky with the rainfall and the earth with plants" (Al-Qomī Al-Mashhadī, 1989, 8:409).

1. Expansion of the universe. Edwin Hubble observed that the galaxies are distancing away from us in 1929.
2. The abundance of light elements, namely, hydrogen, helium and lithium. The Big Bang theory predicts the abundance of these light elements that must have been formed from the fusion of the protons and neutrons in the first few minutes after the Big Bang very accurately.
3. Cosmic microwave background radiation (CMB). The universe at its early stages must have been very hot and the cosmic microwave background radiation is cooled radiation of the hot early universe.

Although the Big Bang theory is almost universally accepted and supported by several evidences, current science has almost no accurate knowledge of the initial material of the pre-Big Bang universe¹ and what happened in the early moments of the Big Bang. For example, questions about how a pre-Big Bang scenario would be like and what conditions caused the Big Bang to happen, are still unanswered. Although different theories have been considered to explain the cause of the Big Bang, none of them has universal acceptance yet (Coles & Lucchin, 2003).

According to what was said, it seems that the Big Bang can be an example of the *ratq* and *fatq* discussed in the Qur'an. The Big Bang theory says the universe started from a rapidly expanding point. Therefore, this can be described as the unification between the heavens and the earth, as the Qur'an says. The expansion continued, and over a long period of time nebulas, galaxies, stars, other observable astronomical structures and finally the Earth emerged. This can also be an example of the separation of the heavens and the earth. It also shows why in this verse *al-samāwāt* (the heavens) is used in plural form (versus the earth) since several separations had to occur in the heavens (galaxies, galaxy clusters, nebulas, etc.) in order the earth to form.

Thus, it seems that the Big Bang theory cannot be ruled out as an example for *ratq* and *fatq*. In other words, the Big Bang theory seems to be in harmony with the Qur'an's view of the formation of the heavens and the earth.

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1. It is worth quoting these phrases from Bojowald (2007): "Complete predictions and explanations of observations can only be made for the finite part starting after the Big Bang. In the traditional Big Bang picture, speaking of 'before the Big Bang' is meaningless. In this traditional picture, the Big Bang is preceded by a singularity where the theory breaks down. The singularity is a theoretical limitation, rather than a physical beginning. Quantum gravity can provide solutions extending through the classical singularity. Yet, limitations to observations of some, but not all, pre-Big Bang properties exist. Although a general demonstration of pre-Big Bang era is still lacking, calculations, and possibly future indirect observations, may allow us to see the Universe as it was before the Big Bang."

3.2.2. *The Second Possibility:*

In this possibility, the coalescence intended is the connection and union of the solar system inside the primary nebula. By separation, the formation of the solar system is considered. The most common assumption about the formation of the solar system is the nebula assumption. According to this scenario, the mass constituting the solar system is a fragment of a molecular cloud that began to split to form the sun and the planets 4.6 billion years ago. This nebula, which consists of heavy and light elements swirls slowly and collapses in different regions inside it due to its gravitational force. At the center of this nebula, the pre-sun that contains more than 99 percent of the whole matter, condenses and warms up to a temperature needed for the nuclear fission to initiate. The other contracted parts form other planets, the satellites and comets (Bland et al, 2004).

On the coincidence of this assumption with the coalescence and separation of the skies and the earth in the Holy Qur'an, one should mention there is a possibility that relates these phenomena to the formation of the solar system and separation of the earth from initial molecular cloud. The only remaining problem is that in this case we must impose on the word *al-samāwāt* in the verse, the sun and the other planets of the solar system. As it was explained in detail, the word *al-samā'* refers to anything that is placed aloft. Hence, the planets can be taken to be evidences for this word. But in this case, the meaning of the word *al-samāwāt* is restricted to the sun and the planets (or at most the whole solar system), despite the mentioned generality of this word possessing the meaning "all the skies."

As a conclusion, since there is no evidence in the verse for this restriction, one cannot firmly state its truth. In addition, it should be mentioned that the number of planets in the solar system excluding the earth is also seven, in agreement with the number of the skies mentioned in other verses (Q. 2:29; 41:12).

3.2.3. *The Third Possibility*

As said before, in the third possibility, the coalescence of the sky is related to the era when the rainfall from the sky had not yet begun. And the coalescence of the earth marks the period of time before the growth of the early plants on it. From the scientific point of view, when the earth was formed, a number of different processes occurred on it. At the time, the atmosphere didn't have the same components as it currently does. Volcanic activities filled the atmosphere with a great volume of gases,

especially carbon dioxide and water vapor. Meteors and asteroids helped this process by transferring water and organic molecules to the surface of the earth. When the earth began to cool down, water vapor in the atmosphere condensed, forming the clouds and finally the first rainfall began. The first evidence for the existence of liquid water on the surface of the earth dates back 3.8 billion years ago (Makishima, 2017).

This possibility, considering the Qur'anic viewpoint, has strengths and weaknesses. The strength points are as follows:

1. Confirmation from the tradition.
2. The fact that the following phrase¹ in the verse is about the appearance of life from water, which agrees with the interpretation of the word *fatq* as “the rainfall from the sky and the growth of plants on the earth.”

But the weakness in this viewpoint is that, instead of the word *al-samā'* which has been used in the Holy Qur'an's verses in the sense of the earth's atmosphere, its plural form, *al-samāwāt*, has been used here, which includes all the skies and not solely the earth's atmosphere, so one cannot accept it with high confidence.

3.3. Discussion and Resolution of the Possibilities

In short, the second and the third possibilities have strengths and weaknesses that cannot be rejected completely nor can for sure be accurate. However, we can think of a solution to combine the existing possibilities, and to some extent, resolve the difficulties in each viewpoint:

As explained above, words making up the first phrase of the verse have been used in a way that can show the unification of the skies and the earth, as well as “the coalescence of each of them distinctly.” Therefore, this can lead one to the fact that both interpretations may be regarded by the verse and one should choose a viewpoint, which contains both coalescences at the same time.

It should be noted that the issue of polysemy and multi-layered meanings has been accepted in the verses of the Qur'an and has been known as one of the principles of the scientific interpretation of the Holy Qur'an (Mazaheri et al., 2016). Therefore, it seems correct to attribute both types of connection to the verse as well as a comprehensive possibility which includes all of the scientific possibilities of the verse if there is no opposite evidence.

I. وَ جَعَلْنَا مِنَ الْمَاءِ كُلَّ شَيْءٍ حَيٍّ.

In addition, as mentioned before, the word *ratq* is an infinitive form which has been used by its passive participle *martūq*. According to Ibn 'Āshūr (1999, 17:40), here the use of an infinitive form in the place of an objective form is to show the exaggerate state of this adjective. In other words, the word *ratq* not only implicates the coalescence of the skies and the earth, but using it in an infinitive form shows that this coalescence has been of a very high intensity. Thus, given the exaggeration in the meaning of *ratq*, it can be said that it concedes not only one, but also numerous coalescences for the skies and the earth, that have gradually and in various stages split.

Thus, the first coalescence between the skies and the earth, according to the first probability, can be attributed to the beginning of the Big Bang, when the whole universe began to expand from one point. So, the first separation can be referred to the high-speed expansion happened afterward.

The second possibility for coalescence and separation is related to the unification of the solar system in the primary nebula, and afterward the separation of them as heavenly bodies and formation of the solar system.

The third coalescence is also related to the time that the components of the earth's atmosphere were unified and the precipitation causing this unification to cease had not yet occurred, and also the time that the earth's crust was hard and interconnected and no plant had yet split it.

As it was noted, this viewpoint can have all three viewpoints in itself. Moreover, the problem we had in the application of the word *al-samāwāt* in the second and third possibilities will be touched upon, since in this viewpoint it is not necessary to restrict the meaning of the word *al-samāwāt* to the planets within the solar system; or as in the third viewpoint, to deduce the meaning of the word *al-samāwāt* to be the meaning of *al-samā'* with no evidence or reason in order to adapt the meaning of the word *al-samāwāt* with the earth's atmosphere. Rather, we can consider the meaning of the word *al-samāwāt* to span and to include all the skies and since the *ratq* and *fatq* considered in the verse occurs in several stages and in different components of the sky, God Almighty has generally ascribed this coalescence and separation to all of the skies, so the verse can contain all the *ratqs* and *fatqs* that take place in the skies and the earth.

In other words, because the coalescence has once fell out among all the components of the skies and the earth, and once between the components of the solar system and the earth, and again separately in the earth and its atmosphere, God Almighty has used a word that indicates generality and can contain all of these skies.

However, the fact that we presented three possibilities for the coalescence and separation of the skies and the earth, doesn't mean that the *ratq* and *fatq* considered by the verse is limited to these three cases, but perhaps, many *ratqs* and *fatqs* might have taken place in the process of the creation of the skies and the earth that we are unaware of. For example, the formation of layers of the earth's atmosphere may even be considered as another coalescence and separation in the sky and the earth.

Here, we have discussed only what we have perceived based on the current human knowledge. What is remarkable is that in this verse, God Almighty precisely mentions the existing coalescence in the skies and the earth and next, the separation of them. And this is a subject that science has achieved after 14 centuries.

4. Formation of the Sky from Smoke

The verse (Q.41:11) is about the time when God intended to create or complete the heaven, while the heaven is in the form of smoke:

ثُمَّ اسْتَوَىٰ إِلَى السَّمَاءِ وَهِيَ دُخَانٌ فَقَالَ لَهَا وَلِلْأَرْضِ ائْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَا أَتَيْنَا طَائِعِينَ (فصلت/11)
Then He tended to the sky/space and it was smoke, so He said to it and to the earth: "Come voluntarily or forcefully." They said, "We came obediently."

This verse points to the time when God Almighty wills to create or complete the sky while it is in the form of smoke. The verb form *istawā ilā* has the meaning of "to attempt for" and "to will something" (al-Jawharī, 1990, 7:235; al-Zabidī, n.d., 38:331). The word *dukhān* means the thing that rises from fire's flames (al-Rāghib, 1991, 310). Al-Muṣṭafawī (1981, 3:187) says that *dukhān* is associated with light and heat due to its relation to flame. According to these meanings, one can say:

1. What rises from the flame of fire is gaseous and opaque.
2. What rises from the flame of fire has high temperature.

Hence one can deduce that *dukhān* in this verse can be a high temperature gas. However, considering it as vapor, as some argue, has no reason or evidence in the verse or in the literature (Rezaei, 2009, 104). The second part of the verse, *so He said to it and to the earth, "Come voluntarily or forcefully.: They said, "We came obediently,"* should be interpreted in concordance with the verse *his command, when He desires a thing, is to say, "to it be, and it is"* (Q.36:82), in which the discussion is about the God Almighty's command to his creations. Among the commentators, there is no

doubt that this is not the real act of talking or commanding, but it shows the will to create and afterwards the execution of that will (Tabataba'i, 1996, 17:366). So, one can conclude that the intention from “commanding the sky and the earth to come” is a genetic process with the meaning of creation.

4.1. *The Possible Scientific Explanations of the Verse*

In order to find the purpose of smoky heaven in this verse according to modern science, there are three possibilities:

1. As mentioned before, *al-samā'* can have the scope of generality and can encompass all the skies. In this case, the first possibility is that the smoky heaven means the whole space before or in the moment of the Big Bang, and the divine command to the sky and the earth means the occurrence of the big bang and the beginning of the formation of the world. However, this possibility can also have a second form, which is that the smoky heaven means the whole space in 300 thousand years after the Big Bang, and the divine command to the sky and the earth means the beginning of the formation of the first structures.
2. It can also point to a special sky. Based on this, the word *al-samā'* can be referred to the primary nebula, of which the solar system including the sun, the earth and the other planets has been made.
3. There is another possibility for *al-samā'*, which is that it refers to the early opaque atmosphere of the earth or in the second case the mass of gas and dust that the earth has formed as a result of their collapse.

4.2. *Investigating the Strengths and Weaknesses of the Possible Explanations*

After presenting the possible scientific explanations for the phenomenon of the formation of the sky from smoke, we examine each of these possibilities and their accuracy:

4.2.1. *The First Possibility:*

There is no acceptable theory for the pre-Big Bang scenario yet. Hence, it is not possible to comment scientifically on the primary material of the universe before or in the moment of the Big Bang. Therefore, the possibility that the meaning of *al-samā'* in the verse is the primary material of the universe before or in the moment of the Big Bang, cannot be ruled out, although no evidence confirms it up to now.

If we consider the second form of this possibility, this problem will be solved and the smoky heaven can be equivalent to the whole space in 300 thousand years after the Big Bang. Before that time, space was almost homogeneous, isotropic and opaque, because due to the presence of free electrons and ions, photons could not travel long distances and were scattered in all directions. At about 300 thousand years, the temperature decreases to around 3000 Kelvin and light atoms begin to form. Therefore, it can be said that the word *dukhān* is a good equivalent for space before that time. The divine command to the heaven and the earth can also be the beginning of the formation of the first structures, which leads to the complete formation of observed structures in space, followed by the formation of the earth.

4.2.2. *The Second Possibility:*

This possibility which refers the word *al-samā'* to the primary nebula is also an acceptable probability. Since, according to the most acceptable theories, the origin of the solar system was an interstellar cloud of rotating gas and dust constituting different kinds of elements and compounds. As this nebula began to condense due to its internal gravitational force, it heated up and split to different parts each becoming a concentrated heavenly mass. Therefore, it seems that the word *dukhān* is suitable for naming this nebula.

4.2.3. *The Third Possibility:*

The sky that the verse refers to is the sky from which the earth was born and was formed by separating from it, that is, the earth's primitive materials were located in it, and then by separating these primitive materials, the earth was formed and became independent.

It is clear that the primitive atmosphere of the earth, created as a result of volcanic activities, does not correspond to this sky with the features mentioned.

However, this sky can be considered as the compact mass of gas and dust that the earth was formed due to its collapse. It seems that this possibility corresponds well to the word *dukhān*, which means a hot and opaque gas.

5. *Conclusion*

Based on the presented interpretation of the two phenomena, "coalescence and separation of the skies and the earth," and "formation of the sky from smoke," it can be concluded that in the verse (Q.21:30), God has called the stage

before the formation of the earth and the heavens the stage of the coalescence (*ratq*) and the next stage the stage of the separation (*fatq*). These two stages have been described from another perspective in the verse (Q.41:11). In this verse, God has described the stage before the formation of the earth and the heavens as a smoky sky, which is the same as the stage of the coalescence (*ratq*). In the following, he has stated the second stage, that is, the formation of the heavens and the earth by the divine command of coming the earth and the sky, which can indicate the beginning of the separate formation of the heavens and the earth that is the same as the stage of separation (*fatq*). Thus, these two verses with different expressions inform about the formation of the universe. Interestingly, considering both verses, there are three possibilities, the first related to the beginning of the formation of the universe, the second to the beginning of the formation of the solar system and the third to the beginning of the formation of the earth and the atmosphere.

Since the issue of polysemy and multi-layered meanings has been accepted in the verses of the Qur'an and has been known as one of the principles of the scientific interpretation of the Holy Qur'an, it seems that the best interpretation for the two verses is the interpretation in which all three scientific possibilities are taken into account. In other words, God Almighty, using the least words, has beautifully described the creation of the universe in a way that indicates the beginning of creation, namely the Big Bang, the formation of the solar system and the formation and evolution of the earth as well.

It is worth noting that the scientific findings on the Big Bang, the formation of the solar system and also the formation of the Earth, although supported by numerous scientific evidences, have not yet reached the stage of 100% certainty. Hence, we expressed the scientific interpretation of these two verses as possibilities so as not to attribute uncertain matters to the Holy Qur'an.

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An Evolutionary Reading of Adam's Creation in the Qur'an with Emphasis on the Concepts of Creation and Selection

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ABSTRACT:

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In theological debates about the creation of human and the theory of evolution, “the theory of creation” means the creation of human at once by the creator of the universe, and “the theory of evolution” means the natural, normal, and gradual creation of human in the evolutionary cycle of life. The question is whether the Qur'an also views human creation as contradictory to his natural and evolutionary genesis. This study shows that the Qur'anic concepts of creation (*khalq*) and selection (*iṣṭifā'*) based on the contextual analysis of these vocabularies allow for an evolutionary reading of human creation. Creation means the emergence of phenomena in a natural, time-consuming, step-by-step process with the interference of natural laws supported by God's command. The meaning of the presence of divine command in all stages of creation is the consciousness of all the objects and their components which is effective in the process of creating an organ along with other factors. Also, the concept of selection of Adam suggests that Adam was chosen among his contemporaries as the first modern human being because of his physical and mental superiority, and his creation was not at once, unnatural and unrelated to previous generations.

KEYWORDS: Adam, Creation (*khalq*), Selection (*iṣṭifā'*), The Theory of Evolution, Scientific Interpretation of the Qur'an.

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I. Introduction

Studying the Qur'an from a scientific point of view seems to be very important, because the Qur'an is not limited to describing the world only in terms of its relation to the Creator of the world, but in many verses, it discusses the details of natural phenomena and the effective role of natural factors in their occurrence. For example, in verse (Q.24:43) several stages of hail formation and the role of wind and the states of clouds in this natural phenomenon are mentioned (Barati, et. al, 2015).

Another example is the expression of the Qur'an about fetal development in the womb, which describes five stages of development for the embryo (Q.22:5; 23:14). Also, in the special issue of this article, the creation of man is mentioned in many verses in terms of its natural origin and stages of creation (Q.32:7-9). But many Muslim scholars disagree with the scientific study of the Qur'an (Shāṭibī; (n.d.); Shaltūt, 1941; see Abū Ḥajar, 1991, 299-302; al-Dhahabī, 1976, 491-494).

Their three main arguments are the following:

First, the difference between the purpose of the Qur'an and the purpose of science. They regard the purpose of the Qur'an as guiding human to the right way of life, and the purpose of science as observing and understanding nature and conquering it. Therefore, from their viewpoint, the study of the attributes of natural phenomena in the Qur'anic verses is permitted only to recall their creator. They believe that these verses do not represent the scientific description of natural phenomena (Ansari, 2001, 101).

Second, the difference between the language of the Qur'an and the language of science (Barbour, 2013, 283). They consider the language of the Qur'an to be conventional (Nekounam, 1999), unrealistic, sometimes metaphorical, symbolic and allegorical from which real statements may not be derived (Shāṭibī, 2, 71; Rezaei Isfahani, 1996, 256; Kalantari 1996, 256; Kalāntarī, 1998, 82).

Third, the uncertainty of scientific theories. This causes the science to be discredited as a source of interpretation and understanding of the Qur'an (al-Dhahabī, 1976, 2:491-494).

To criticize the first argument, it should be said that the Qur'an pursues two goals. Along with the guidance of the servants, the Qur'an has introduced itself as a sign of the Prophet's righteousness (Rohani, 2015, 243). Thus, when the Qur'an describes nature, the scientific judgment of these verses is the criterion for judging the Qur'an's claim that it considers itself a divine word (Q.2:75; 9:6) and from God's infinite knowledge (Q.11:14).

Their second argument is based on theories that introduce the language of the Qur'an as conventional and allegorical that has been criticized in some researches (Alidoost, et al., 2013; et al., 2013; Shakerin, 2012).

In the third argument, it is important to note that uncertainty is a common feature of all sciences used as a source of interpretation of the Qur'an, even literary and rhetorical sciences. If the sciences are not used because of uncertainty, the effort to understand and interpret the Qur'an will be essentially eliminated, which is contrary to the tradition of all Muslims from the beginning.

In this article, based on the above reasons, to survey whether the Qur'anic verses suggest that human was created without parents or that he was also born of parents, the verses of human creation and the concepts of creation and selection were studied in the context of the Qur'an. Furthermore, two questions and hypotheses have been discussed in order to investigate the possibility of an evolutionary reading of human creation verses with emphasis on the concepts of creation and selection.

Question 1: Is the meaning of creation compatible with the evolution of creatures, or is it impossible to reconcile human creation with his evolutionary genesis in order to emphasize the existence of a creator?

Hypothesis 1: Creation in the Qur'an refers to the emergence of beings by organizing the components of an organ in a timely and phased manner, with the interference of natural agents, which relies on God's command at all stages.

The meaning of the presence of divine command in all stages of creation is the consciousness of all the objects and their components which is effective in the process of creating an organ along with other factors.

Question 2: Was the creation of Prophet Adam as the first human being to reach the position of caliphate of Allah exceptional and out of the evolutionary cycle of life?

Hypothesis 2: The concept of selection of Adam suggests that Adam was chosen as the first human being among his contemporaries because of physical and mental perfection and that his creation as the father of today's intelligent humans was not instantaneous and without continuity to previous generations.

2. The Natural and Evolutionary Process of Creation

The emergence of the theory of evolution triggered a wave of theological debates about the relationship between religion and science. In the literature of this discussion, the concept of creation has always been used against the concept of evolution (Narimani, 2016); in such literature, by default, the idea

of human creation is opposed to the theory of evolution; for in this theory the stages of human creation are naturally explained and do not emphasize the role of the conscious creator. Nevertheless, these two concepts are intertwined in the Qur'an and Qur'anic literature; that is, the concept of "creation" does not conflict with the natural occurrence of phenomena.

On the other hand, in philosophical approaches to the interpretation of the Qur'an, the concept of "command" is opposed to "creation" and speaks of two dimensions or two faces of creatures belonging to two worlds, one being material and natural and the other immaterial and spiritual. Accordingly, the creation of human by divine command would imply creating the first human abnormally and miraculously.

In this section, by examining the Qur'anic concept of "creation" and "command," it becomes clear that these two descriptions of natural events are from two perspectives and that the universe and all its beings are united in nature.

2.1. The Qur'anic Concept of Creation

The main meaning of the root *kh-l-q* is measurement (al-Farāhīdī, 1989, 10, 85; Q.25:2; 87:3). This root is also used in the sense of creation (Ibn Manzūr, 10, 85), because the creation of objects coincides with the measuring of their existential factors. An examination of the context of the verses in which this root is used in the sense of creation shows that in the Qur'anic literature the creation of beings does not imply their immediate emergence from nothing without the intervention of natural objects; for these verses say:

1. All things are created by God (Q.25:2; 6:101-102; 13:16; 39:62). He created the heavens and the earth and the sun and the moon and the mountains and the beasts and the plants (Q.31:10-11) and the animals (Q.36:71; 88:17) even life and death (Q.67:2), night and day (Q.21:33), both sexes (Q.53:45), angels (Q.43:19; 37:150), and jinn (Q.6:100). It also discusses the factors behind many phenomena and their role, such as the role of winds in moving clouds and falling rain (Q.30:48; 35:9).
2. Creation has a beginning and a starting point (Q.10:4; 10:34; 29:19-20; 27:64; 30:11;27)
3. Creation begins with the raw material available. Sometimes the material is mentioned, such as fire for jinn (Q.55:15), water (Q.25:54) or soil (Q.32:7; 18:37) or sperm (Q.16:4) for human creation. But there is sometimes a reference to the low value of the raw material.

4. Creation is a time-consuming process. Sometimes its duration is mentioned, such as the creation of the heavens and the earth in six periods (Q.7:54).
5. Creation is a gradual and step-by-step process (Q.39:6; 23:14).
6. Everything is created by measurement (Q.25:2; 54:49; 80:19).
7. Creation is an ongoing process (Q.16:8).
8. The creation of the world and human is renewed in the resurrection (Q.30:11; 27:64; 34:7; 13:5; 17:49).
9. Both origination and renewal are made at God's command (Q.36:82; 3:47).

Thus, creation means the emergence of phenomena in a natural, time-consuming, step-by-step process with the interference of natural laws supported by God's command, of course. In fact, while acknowledging the involvement of natural causes in the emergence of phenomena, the Qur'an mentions God's command as the primary cause that all causes depend on. So that the dual style of the Qur'an can be observed in describing the phenomena. And sometimes with a different style, he points to the natural process of evolution necessary for the creation of objects, though in this case the verses do mention Allah as its true motive; an instance is the verse: *It is He who sends down water from the sky* (Q.16:10); Against a verse that describes in detail the impact of wind on the movement of clouds and changes in clouds and the stages of rain and hail (Q.24:43). It seems that these two styles are actually describing events from two perspectives, the divine and the natural.

2.2. *The Qur'anic Concept of Command (Amr) or Divine Kingdom (Malakūt)*

The Qur'an's emphasis on the immediate impact and definite fulfillment of divine command, as interpreted by "Be, then it will become," has led a group of Qur'anic scholars to interpret this as the realm of *amr* and elaborate its features as one realm among "unseen realms." According to them, the realm of *amr* refers to the special realm of God, which is free of all material features such as time, place, gradation, movement, quantity, quality and the interference of humans as well as other natural elements and factors of the world of *khalq* as determined by God's will, judgment and decree (Kalantari & Alavi 2013, 149, 2013, 149).

This theory is based on philosophical perspectives that point to the existence of different orderly and nested worlds or realms beyond our world (Gorjian et al, 2014). This idea seems to be incompatible with the Qur'an. No explicit statement in the Qur'an indicates the multiplicity of worlds and the existence of worlds with preternatural or spiritual laws. The

separation of God's command from His creation in a verse of the Qur'an (Q.7:54) also does not imply the existence of any different world or realm; but, the presence of God's command in all stages of creation supports a certain fulfillment. For example, look at verse (Q.2:117) that considers the emergence of the world to be the fulfillment of his command:

Initiator of heavens and earth, when He decrees a command, He merely says to it, "Be, so it will become."

See how he considers his power over the extraordinary creation of Jesus to be unlimited because of his command:

She said, "My Lord, how can I have a son when no human has touched me?" He said, "It is thus that God creates what He wills, when He decrees a command, He merely says to it, 'Be,' so it will become" (Q.3:47).

Also, in the closing verses of Sura Yasin, he rejects any doubt about the possibility of re-creation, saying that the first creation of the universe and the new creation of human, both as manifestations of his creativity, occurred because of His command, indicating his monopoly kingdom over all objects (Q.36:81-83). In this verse and in the other verses that speak of God's command and kingdom, there is no mention of a spiritual world for the commandment of God or His kingdom beyond the natural world governed by specific laws and systems. In fact, the influence of God's command, which monopolizes the kingdom and dominion over all things, has made all objects, devotees, and worshipers of God, and submit to His command. It means that they are conscious and this is the expression of universal consciousness in the world (al-Ṭabarī, 1991, 15, 65; Ibn Kathīr, 1998, 5, 74); therefore, the command of God and His kingdom is linked to the consciousness of the beings.

Where the Qur'an speaks of the revelation of divine command to the bee and, subsequently, the natural awareness of the bee on how to make a hive and produce honey, there is further evidence of this claim (Q.87:68-69). As with the revelation of the Spirit, which is the commandment of God, the prophets have a superior understanding and are instructed to teach other people (Q.42:52). Likewise, the revelation of the special order of each heaven (Q.41:12) means the creation of a system of rulership over each heaven (al-Ṭabarī, 1991, 24, 64; Sayyid Quṭb, 1994, 5:3115, 1994, 5, 3115; al-Ālūsī, 1994, 12, 356), that seems to put a single soul in it, giving it a sense of purpose and survival. Therefore, the creation of the heavens and the earth in the Qur'an is figuratively expressed in the form of conversations with them as intelligent beings:

Then He told the heavens and the earth "Come, willingly or unwillingly!" They said, "We come heartily." (Q.41:11).

The commandment in the phrase "Be, so it is", therefore, is not specific to the extraordinary creation of Adam, Jesus and John. The phrase emphasizes the power of God over all kinds of natural creation, which can be ordinary or abnormal.

Contrary to what is said (Kalantari & Alavi, 2013, 153), creatures are not of two kinds, resulting from two methods: command or creation. Rather, all beings have both aspects. The aspect of the commandment which, from God's perspective, is pictured free from time and refers to the relationship of creatures with God; Hence, in that aspect, all beings are conscious and submissive to God, and everything immediately appears at God's will. The aspect of creation depicted from the perspective of nature. So, the difference is in perspective, not in the system of laws, and thus the existence of two kinds of worlds cannot be deduced (Rohani, 2021). Consequently, the first hypothesis is proved by the Qur'anic concept of creation and the command.

3. Adam's Selection and His Evolutionary Creation

Some scholars consider the creation of human beings as normal and natural, and only consider the creation of Adam and Eve as the first human pair, an exception to the natural process of creation, believing that Adam was created by the earth in a miraculous and immediate way because of the divine spirit. According to the foregoing, all things are created, that is, they are naturally created by the interference of natural laws, and Adam is no exception. Also, all beings have a consciousness that is due to their relationship to God's command, which supports creation, also referred to as the kingdom of God.

The only distinction of human (also Adam as the father of men) with other creatures is the greater complexity of his creation, which gives him greater awareness, and this special consciousness is due to the revelation of the special command of God in him, that is called the Spirit. Adam's possession of the Spirit, or Lord's special command, seems to be the basis for Adam's selection, which is mentioned in verse (Q. 3:33): *Indeed, Allah chose Adam and Noah, and the progeny of Abraham and the progeny of Imrān above all the nations.* That is to say, prophet Adam is a human being chosen in his time, and in terms of creation, he is an evolutionary step above all others, chosen for the divine spirit and special human consciousness (Sahabi, 2008; Meshkini, 1987).

The question is, what is the reason for Adam's preference over all humans? Given the context of the verse and the magnificence of the word "worlds", can one refer to Adam's choice over his children? On the other hand, what is the meaning and purpose of Adam's choice over human beings of all ages? To solve this problem, it is necessary to analyze the Qur'anic concept of 'Selection.'

3.1. Concept of 'Selection'

The term *iṣṭifā'* is derived from the root *ṣ-f-w* in Arabic, meaning purity as opposed to impurity or opacity. The word *ṣafwah*, a derivative of the same root, means the summary, gist or selected part of something (Ibn Manẓūr, 2005, 14, 462). In the current form (i.e., *bāb ifṭi'āl*), *iṣṭifā'* means selection or choosing. In this sense, the prophet is selected by God because he is a pure person from among the servants of God (Ibn Manẓūr, 2005, 14, 463). According to the verses of the Qur'an, Abraham (Q. 2:130), *Ṭālūt* (Q. 2:247), Adam, Noah, *Āl Ibrāhīm* and *Āl 'Imrān* (Q. 3:33), Mary (Q. 3:42), Moses (Q. 7:144), messengers – whether *insān* or angel (Q. 22:75), the heirs of the Qur'an (Q. 35:32), Abraham, Isaac and Jacob (Q.38:47) are selected by God.

A question worth asking is: What impurities are implied by *iṣṭifā'*, as in selecting some people for making them pure? Does it imply the impurity of *rūḥ*, faith and action or a physical and *khalqī* impurity? There is evidence suggesting that the concept of *iṣṭifā'* is corresponding to the purification in physical and *khalqī* terms. Of course, a more complete physical creation will be the introduction to superior spirituality. In this sense, *muṣṭafā'* (selected) individuals are purified from imperfections and defects in terms of physical creation. Of course, this physical superiority provided the necessary, but not sufficient, context and conditions for the acceptance of heavenly missions and revelation.

The first reason for choosing *Ṭālūt* is because of superiority in mind and body:

Indeed, Allah has chosen him over you, and enhanced him vastly in knowledge and physique, and Allah gives His kingdom to whomever He wishes (Q.1:247).

The second reason is obtained from verse (Q.35:32) which divides *muṣṭafā'* servants of God into three categories in terms of *rūḥ*, faith and actions, clearly speaking of one group of *muṣṭafā'* (selected) servants as being tyrants. Therefore, the chosen servants do not necessarily have spiritual superiority. Rather, a more complete physical creation will only be the basis for superior spirituality.

The third witness is the context of the verse (Q.6:83-87), which praises Abraham and his children as prophets, and uses the term *dhurriyah* to refer to the influence of genetic relationships on their guidance, righteousness, avoidance and adherence.

The fourth reason, in this case, is the use of this term in the context of the Qur'an in Surah *Āl 'Imrān*. In verse (Q.3:33), the selection of Adam and Noah and the families of 'Imrān and Abraham has been mentioned above the people of the world. Some commentators have spoken of both the *takwīnī* and *tashrī'ī* (al-Ṭabarī, 1991, 3, 156) selections and considered both possibilities to be valid and, they consider *takwīnī* selection as a privileged creation (Makarem, 1992, 2, 518). The use of the word *Āl* in this verse also reveals a link between family and genealogy with the concept of *iṣṭifā'*. It seems that this *iṣṭifā'* has been carried out through genetics and during generations, and therefore, in the following verse (Q.3:34), it is clearly emphasized by the word *dhurriyah* of their genetic correlation: "They were descendants one of another (Tabataba'i, 1971, 3, 168)." In this way, the concept of this selection and its linkage with genetic superiority or purification of genetic defects is expressed.

After these two verses, it is explained in more detail after the brief, and the meaning of *iṣṭifā'* and its cause are explained by the story of the wife of 'Imrān and his vow and prayer for the fetus who was in her womb and its generation (Q.3:35-36). The result of the fulfillment of this prayer (Q.3:37) was the selection of Mary and his son from the 'Imrān family and her superior breeding and her special nurturing. It is in the story of Mary that God tells that of Zakariyā. When he saw the spiritual states of Mary, he asked God for a pure progeny (Q.3:38-41).

He then returns to the story of Mary and commemorates Mary's *iṣṭifā'* on all women in the world (Q.3:42); It seems that what happened to Mary was the basis for her *iṣṭifā'*. If Mary's *iṣṭifā'* is due to her particular way of becoming pregnant (al-Zamakhsharī, 1, 362; al-Rāzī, 8, 218) her genetic mutation will be confirmed again, which is the result of her *takwīnī iṣṭifā'*. Of course, this genetic selection included his son Jesus, and he possessed special attributes such as speaking in the cradle (Q.3:46). Based on the evidence, one can claim that the term *iṣṭifā'* refers to purity from genetic defects, also known as natural selection in the theory of evolution. Natural selection is a process that, over generations, causes the prevalence of certain inherited traits which increase the likelihood of the survival and reproductive success of an organism in a population (Charlesworth, 2011). Of course, from the Qur'an's point of view, this is a "divine selection" because this natural process is created by God's Commandment and

creation, and therefore it is attributed to God, rather than nature. New scientific theories are emerging in explaining Darwinism, which have been shown by biological evidence that the source of natural selection is a kind of self-awareness in organisms (Ward, 2006, 64; Rahimpoor, 2010, 65)

Some of the evolutionary theories regarding the direct effect of environmental factors have been related to the formation of new organisms. The most famous theory related to this field was Lamarck's theory. Some of the evolutionary theories such as Darwin's have focused on the selection of individuals who have the most adaptation to the environment, therefore what has been challenged through the years was only the influence of environmental or genetic factors (Hassanzadeh, 2016; Sadler, 2019).

Today it has been proven that although genotype is important but environmental factors such as nutrition and temperature have a strong influence on gene expression. The process of natural selection according to Darwin's theory of evolution, only the organisms best adapted to the environment tend to survive and transmit their genetic characters in increasing numbers to succeeding generations while those less adapted are to be eliminated (Roger, 1998). According to the evolutionary theory, especially the theory of natural selection, a human being who has more ability to survive is able to have an effective relationship with the rest of living organisms and also able to lead a group of people is not far from mind and does not conflict today's science (Hassanzadeh, 2016).

3.2. Adam's Selection and Honoring His Progeny

In addition to Adam's selection, his children were also honored and preferred over other creatures. In mentioning the honor of the descendants of Adam, God mentions their ability to conquer the earth and the seas, which has given them supremacy and grace over many creatures (Q.17:70). So, this preference is due to their superior mental powers and their dominance over nature. In the story of the creation of human, the prostration of angels before him refers to human's domination over the powers directing the affairs of creatures (Q.79:5). That is to say, the perfection of human's body and mind gives him the power to conquer nature with the command of God. All these are evidences that show the natural emergence of Adam from the living generation and his physical and mental evolution (Rohani, 2020).

3.3. Noah's Selection

Noah's selection saved his descendants (Q.37:77). His descendants apparently did not survive by natural sieve, but Noah's companions and children were rescued from the Flood by faith in Noah's promise and embarkation on his ship. In this case, their choice was not necessarily due to their physical and mental superiority. However, according to the concept presented for revelation, Noah's construction of the Ark could be interpreted as the result of Noah's intellectual superiority in anticipating the storm and his creative power in designing and building the Ark. Believers also came with him to understand Noah's claim for greater rationality. That is, the believers and the companions of Noah were mentally superior to the people of their time.

3.4. The Progeny of Abraham's Selection and That of 'Imrān's

The progeny of Abraham are the descendants of Israel and are actually descendants of Abraham. Since the Surah context is about the birth of Jesus from Mary and the encounter of Christians with the Prophet of Islam, 'Imrān and Abraham are mentioned to refer to the unity of the origin of Jesus and Muhammad. According to numerous accounts, the descendants of Israel have been preferred (Q.2:47; 7:140) and have been given superiority (Q.44:32), and they have been given powerful prophets and kings (Q.5:20), wisdom and prophecy (Q.45:17). If wisdom and prophecy based on the concept of revelation are so understood that the wise and prophets possessed superior physical and mental powers and had a superior ability to understand the facts, the genuine and rational interpretation of the descendants of Israel can also be regarded as natural and based on genetic characteristics. Thus, the creation of Adam, like all human beings, was natural and of the generation of other beings. Like Noah and the descendants of Israel, Adam was chosen physically and mentally over the people of his time.

4. Conclusion

- a. Everything is created by God, and creation means the emergence of phenomena in a natural, time-consuming, step-by-step process with the interference of natural laws supported by God's command, of course.

- b. All beings have two aspects: 1. Command which is pictured, from God's perspective, free from time; In that aspect, all beings are conscious and submissive to God, and everything immediately appears at God's will.
2. Creation which is pictured from the perspective of nature. So, the difference is in perspective, not in the system of laws, and thus the existence of two kinds of worlds cannot be deduced.
- c. The human body and mind are unified in nature, and the way in which they are created, as in all beings of the world, occurs in a natural process.
- d. The creation of Adam, like all human beings, was natural and like Noah and the descendants of Abraham and Israel, Adam was selected physically and mentally over the people of his time.

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Why Dhu al-Qarnayn Dam is Impenetrable? A Chemical and Physical Study

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ABSTRACT:

Original Paper

By development of human scientific abilities, more miracle aspects and wonders of the Qur'an have been recognized. Stating the story of Dhu al-Qarnayn and constructing of dam, verses (Q.18:83-98) have pointed some valuable scientific aspects regarding chemistry, physics and metallurgy. The instruction for the structure reveals the non-accidental process, because the precise expected physical, chemical and metallurgical properties.

The three-layer structures of dam with dendrite like microstructure in its matrix will guarantee the durable structure against most chemical destructive agent, mechanical damage and thermal threats. Hence the powerful people of Gog and Magog could not overcome the high tensile strength of iron, high ductility of copper and the high toughness of Cu-Fe alloy. The high thermal and temperature resistance are the evidence for more structural power. Such masterpiece of engineering, in technology of alloying, could not be based on the knowledge of common craftsmen of that time, but it must have been based on superhuman wisdom.

Consequently, although the Qur'an is a book of guidance, but it reports some original scientific issues, such as the Dhu al-Qarnayn story. These were not known in the age of revelation and after progressing in science, but the truth of considered issues has been proved. However, because of the clear instruction, and the precise prediction of properties, it is possible to use the verses as an excellent idea for scientific advancement, rather than reporting events.

KEYWORDS: Dhu al-Qarnayn's dam; Miracle of the Qur'an; Copper; Iron.

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I. Introduction

The Statue of Liberty, on a Small Island in New York Harbor, may be one of the biggest metallic structures in the world. The design of such statue was a very difficult job because of its size. The engineers decided to make her skin out of thin copper sheets and attach them onto a metal iron frame.

As another application of copper-iron structure, the Swedish nuclear fuel waste is today stored in Clab, a central interim storage facility serving as a final repository where it was stored for 30 to 40 years. The waste is encapsulated in an insert made of iron with surrounding copper. The iron insert provides the mechanical strength and the copper canister gives corrosion protection (Svensk Kärnbränslehantering 2006).

Also, Dhu al-Qarnayn's dam is one of the famous ancient structures made out of copper-iron metals. As mentioned in holy Qur'an, this dam is a durable protective wall, separating two areas on earth.

Dhu al-Qarnayn, attested in the Qur'an (Q.18:83-98), traveled a long way of east and west and erected a dam between two mountains that separated between mankind and Gog and Magog (Ya'jūj and Ma'jūj) (Cook 2005)..

Verses (Q.18:96-97) show that Dhu al-Qarnayn built a dam impenetrable to Gog and Magog, *"Give me pieces of iron" - till, when he had leveled up (the gap) between the cliffs, he said, "Blow!" - till, when he had made it a fire, he said, "Bring me molten copper to pour thereon." And (Gog and Magog) were not able to surmount, nor could they pierce (it).* The Gog and Magog could penetrate each barrier and they had special abilities (Q.21:96), but the mentioned dam was so strong that they were not able to make a hole in it.

The dam is also very durable and long lasting, *"He said: 'This is a mercy from my lord: But when the promise of my Lord comes to pass, he will make it into dust; and the promise of my Lord is true'"* (Q.18:98). So not only they could not to destroy it, but also it cannot be corroded easily in different weather and environmental conditions.

The development of human abilities further demonstrates the miracle aspects of the Holy Qur'an. Therefore, it's a high time of studying: Why this structure is so strong? Wouldn't they destroy it by any known chemical materials or to overcome it by physical powers such thermal and mechanical tools?

The story of Dhu al-Qarnayn and studying of his dam constructions can be regarded as a high technology in safety industry, impenetrability and consolidation of iron through coating its surface with copper.

Accordingly, all aspects of durability and stability of the aforementioned structure are considered in chemical and physical views.

2. Problem Statement

One of the miracle aspects of the Qur'an is its scientific miracle. We imagine the miracle as revealing of some formerly unknown point in science. *"That is from the news of the unseen which we reveal to you, [O Muhammad]. You knew it not, neither you nor people, before this. So be patient; indeed, the [best] outcome is for the righteous"* (Q.11:49). So, some subjects in Qur'an, which has not been mentioned before in scriptures or in scientific centers or human could not comprehend it alone, can be interpreted as scientific miracles (Rezaei, 2001).

Dhu al-Qarnayn's dam also can be considered as a miraculous aspect of the holy Qur'an. He was a capable man, who was learned a lot of skills through revelation and know how to achieve everything: *"Verily we established his power on earth, and we gave him the way and the means to all ends"* (Q.18:84).

This story is purely through inspiration and the people were not aware of it: *"and they ask you, [O Muhammad], about Dhu al-Qarnayn. Say, I will recite to you about him a report."* (Q.18:83).

The peoples he helped them were unaware of such advanced technology, because they asked him for help: *"They said: "O Dhu al-Qarnayn! The Gog and Magog (people) do great mischief on earth; shall we then render thee tribute in order that thou mightiest erect a barrier between us and them?"* (Q.18:94). Also, as will be mentioned below, historical studies indicate that such advanced technology in alloying could not be based on the knowledge of craftsmen of the time, and some copper alloys were accidental and perhaps not even distinguished from copper.

So, we are looking for some points and hints about Dhu al-Qarnayn's dam which could be understood as modern science. The verses (Q.18:83-98) are related to the dam, its structure and some of its properties. We are thus looking for some valuable scientific and technologic point and profound thinking about the dam.

3. Result and Discussion

The powerful Gog and Magog could not penetrate Dhu al-Qarnayn's dam. But why did they not destroy it by any known tool? From What material was it built and what were its properties? What was the grade of impenetrability and consolidation of the mentioned structures?

As far as chemical and physical aspects are regarded, we try shedding some light on its hidden properties. Hence, on the whole, all possible destructive agents and factors can be classified in two parts – chemical and physical. The chemical can be classified in structural and chemical reactions such as phase exchange and electron transfer. The physical is also classified in thermal and mechanicals.

3.1. *What Material Was Produced?*

First, the compound from which it was produced as well as its chemical and physical properties need to be clarified and thus the method of constructing the structure be discussed. As mentioned above, the iron pieces were heated, then the molten copper was poured on it.

Heating iron is very important as a transformation of pure copper and iron into Cu-Fe alloys (Figure 1). Without heating, the layer of copper is placed on iron surface without any change in the pure iron and copper structure. Studying the phase diagram of copper-Iron (Cu-Fe) reveals that the $\text{Cu}^{70}\text{Fe}^{30}$ alloy is simply available and rapid solidification of this alloy may cause some dendrite like microstructures, which are clearly visible with optical microscopes (Chen et al. 2007; Figure 2). Many aspects of the phases of separation, nucleation, solidification and microstructure evolution in boundary condition and contacting edge between copper and iron were not known at the time.

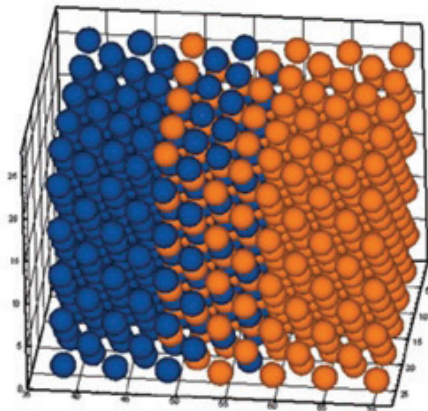


Figure 1. When iron heated, atoms of the molten copper are doped into the context of the iron and some iron atoms are solved in the molten copper.

Therefore, heating is a very important process, because diffusing some Fe atoms in Cu matrix, constructing the dendrite like microstructures of iron

inside the Cu-Fe alloy and finally the pure layer of copper, as the farthest layer contacting with the environment are the consequences of heating. Dhu al-Qarnayn thus applied the bulk undercooling techniques for Fe-Cu alloys.

As stated in the verses, Gog and Magog were not to surmount or pierce such highly advanced technological engineering structures. Consequently, the aforementioned structures must have had a high grade in chemical and physical resistance.

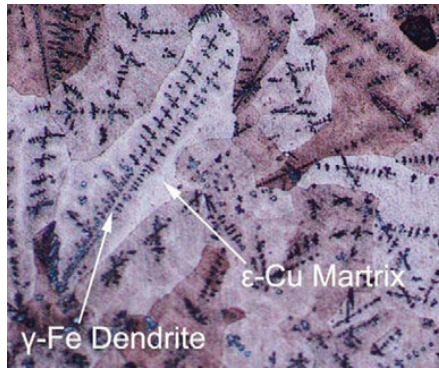


Figure 2. Rapid solidification of copper-iron alloy causes some Fe dendrite like structures in the context of copper.

Before investigating the properties of the structure, it must be emphasized that such advanced technology in alloying could not be based on the knowledge of the craftsmen at the time. Because the composition of the early brass and “bronze” objects are highly variable and the Zinc or Tin contents were lower than the copper alloys produced by cementation. These may be ‘natural alloys’ manufactured by smelting zinc or tin rich ores in the production process. It is possible that some copper alloys were accidental and perhaps not even distinguished from copper (Craddock & Eckstein 2003). Therefore, forms of brass or bronze have been in use since prehistory, its true nature as a copper alloy were not known until the post-medieval period, because the zinc or tin vapor which reacted with copper were not recognized as metals (Thornton 2007; Ruetter 1995). In historical records the word ‘brass’ can mean any ‘bronze’ alloy or copper and it may have had an even less precise definition than the modern one.

3.2. *Chemical Corrosion Is Kinetically Unsuitable*

Durability and stability are important factors in metal structures that should ensure a long life. Both of these are strongly dependent on environmental conditions. For instance, the iron metal is well durable in dry and oxidative free medium. But in moist air it easily suffers corrosion with the oxygen melted in moisture. The iron protected by semi-stable metal, such as copper, is thermodynamically and

kinetically durable in a corrosive environment. A durable and stable structure does not merely depend on its internal properties, such as atomic bond strength or its crystalline form, but it is completely subject to probable events. As mentioned above in verse (Q.18:98), Dhu al-Qarnayn's dam is well durable and stable, so it had to be physically or chemically protected against the oxidative agent.

As presented in the former section, this structure is formed with equilibrium separation along the thermal gradient in copper-iron phase diagram (Chen et al. 2007). It is thus a thermodynamically semi-stable structure and any structural changes yield the same structural composition.

On the other hand, as it will be explained below, the chemical electron transfer is also kinetically an unsuitable reaction. When metallic materials are put into a corrosive environment, they tend to have chemical reactions with the air and/or water. Corrosion is a natural process that converts a refined metal into more chemically-stable forms such as oxides.

The effects of corrosion become evident on the surface of these materials. For example, after putting a piece of iron into a corrosive atmosphere for an extended period, it starts rusting due to oxygen interaction with water on the surface of the iron. It is thus the gradual destruction of metals by chemical and/ or electrochemical reaction by their environment. Because corrosion is a diffusion-controlled process, it occurs on a surface exposed to an oxidant. Reducing the exposed surface, such as passivation or plating with other stable materials can increase materials corrosion resistance (Mufidi 1998).

Resistance of all grade of copper to atmospheric corrosion is good due to its relatively high positive electrode potentials. Copper corrosion, therefore, occurs at negligible rates in the air and achieves a higher resistance as it develops the adherent protective coatings, initiated with cuprous oxide (Cu_2O). Then, after a few years, it converts to cupric oxide (CuO ; Skoog et al. 2003). Also due to high electrical conductivity of metals such as copper, silver and gold, they can act as a destabilizing perturbing potential field (tunneling effect) on the adsorbing oxidizing species and consequently reduce their corrosion activity (Moghaddasi & Zahedi 2017).

Therefore, in the iron coated with copper, Cu can act as a passive protective layer and remain largely stable in extended periods of time. Such passivation or plating with other stable materials can increase materials corrosion resistance and thus make it durable and stable against corrosive agents.

3.3. Why Is the Mechanical Penetration of This Structure So Hard?

The mechanical properties of metals determine the range of usefulness of the metal and establish the ability that can be expected from them. It represents how metals will respond to external forces. Mechanical properties are characterized

by stress and strain (such as tension and torsion), elastic deformation and plastic deformation (such as tensile strength, ductility and toughness).

Material strength is mainly marked by reporting its 'tensile strength.' It is defined as the maximum force in tension a material will withstand before fracturing, or the ability of a material to resist being pulled apart by opposing forces.

Since it does not show all the properties, other parameters, such as ductility, is also reported. Ductility is the property which allows the material to be stretched or otherwise change in shape without breaking, and to retain the varied shape after the external forces are removed. Therefore, it is the ability of a material, such as copper, to be stretched permanently without fracture. Also, lack of ductility causes brittleness or lack of showing any permanent deformation before the metal cracks (such cast iron).

Most commonly tensile strength is reported in N/mm^2 and ductility is reported with the percentage of stretching of length. These parameters refer to the local behavior of materials in external forces and do not represent the whole dynamic behavior along the stretching process. The ability of a metal to deform plastically and to absorb energy in the process before fracture is termed toughness. Recall that ductility is a measure of the extent to which something deforms plastically before fracture, but just because a material is a ductile does not make it tough. The key to toughness is a good combination of strength and ductility. A material with high strength and high ductility will have more toughness than a material with low strength and high ductility. Therefore, one way to measure toughness is by calculating the area under the stress strain curve from a tensile test (Figure 3). This value is simply called 'material toughness' and it has units of energy per volume.

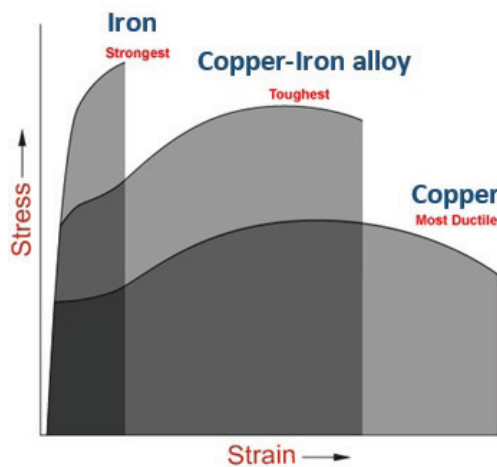


Figure 3. Relative high strength (iron), High ductility (copper) and high toughness (copper-iron alloy). As depicted, the area under the stress strain curve represent the toughness.

As depicted in Figure 3, iron has relatively high strength and low ductility and likewise copper has relatively low strength and high ductility. Therefore, these metals are classified in the middle range of toughness. Agunsoye et al. demonstrated that the presence of copper in melted iron causes a notable increase in toughness of Cu-Fe alloy (Agunsoye et al. 2014).

Therefore Dhu al-Qarnayn's dam is an intelligent plan that will show phenomenal high ductility, high toughness and high tensile strength due to the outer pure copper, middle copper-iron alloy and inner pure iron respectively. As mentioned above, the microstructure dendrite like structure of iron among the copper-iron alloy can highly increase these phenomenal properties.

3.4. Why Is Thermally Penetrating This Structure So Hard?

Considering the thermal properties of metals, a wide variety of properties and phenomena come to mind. Thermal properties are the metal properties related to thermal conductivity. In other words, these are the properties exhibited by a material when the heat is passed through it.

Thermal properties of metals determine the manner of their reactions when they are subjected to heat fluctuation. The thermal conductivity and melting point are two major components of thermal properties.

The melting point of substance is the temperature at which solid and liquid phases may coexist in equilibrium or the temperature at which matter changes from solid to liquid form. The melting point, the maximum possible temperature in heating a material, can withstand in solid phase, or the resistance ability of a material to melt, in solid phase, against temperature. For example, in materials under investigation, iron and copper have a melting point of 1538 °C and 1084 °C respectively. Therefore, the temperature resistance of iron to melting is significantly higher than copper, and these temperatures must be generated by a thermal source.

If the whole system is not subjected to temperature increase, such as thermal cutting, the efficiency of thermal source is mainly related to the thermal conductivity of metal, since the thermal flow from the heat affected zone to the surroundings demand a stronger heat source in order to compensate the wasted heat (Kermanpur et al. 2008). Also, the higher thermal conductivity indicates the dependence of the larger part of the system on melting (Figure 4). For example copper and iron have

the thermal conductivity of 400 (W/m.K) and 80 (W/m.K) respectively. Therefore, the thermal resistance of copper for melting the 'thermal heat affected zone' is significantly higher than iron, because it wastes the heat 5 times more than the iron in aforementioned area.

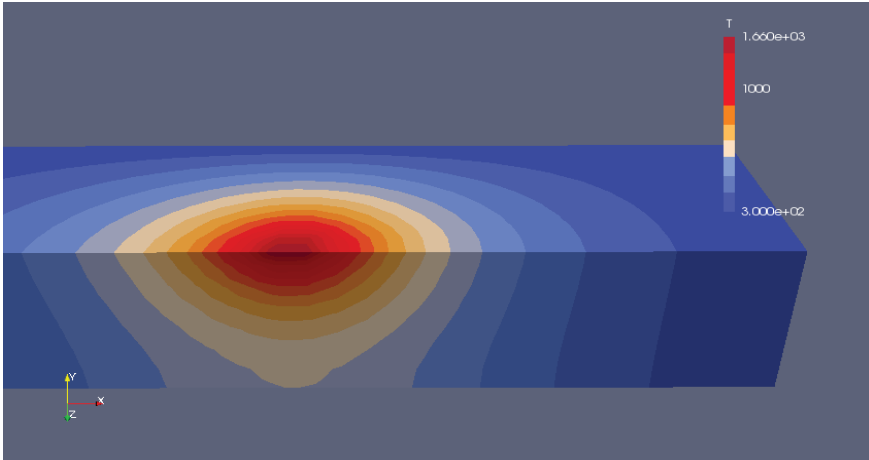


Figure 4. Heat affected zone area. When an area of metal is subjected to temperature increase, thermal energy flows to around.

Such gradient of temperature merely depends on thermal conductivity of metals.

Melting a piece of metal in an isolated condition and in contact with the environment will result in a different output power of the source. Compared to copper, iron has to pass a 'higher temperature resistance,' whereas copper needs higher thermal efficiency (higher thermal flow resistance) for heat source. The key to 'thermal flow resistance' is a good combination of 'melting point' and 'thermal conductivity.' A material with high melting point and high thermal conductivity will have more 'thermal flow resistance' than a material with low melting point and high thermal conductivity. Therefore, one way to measure 'thermal flow resistance' is by calculating the volume under the thermal behavior in heat affected zone curves (Figure 5). This value has the units of energy per minute (W).

Consequently, as depicted in Figure 5, Dhu al-Qarnayn's dam has marvelous thermal properties which resist any kind of fire. It has high thermal conductivity, high temperature resistance and high thermal flow resistance due to its efficient structure which is related to its different layers.

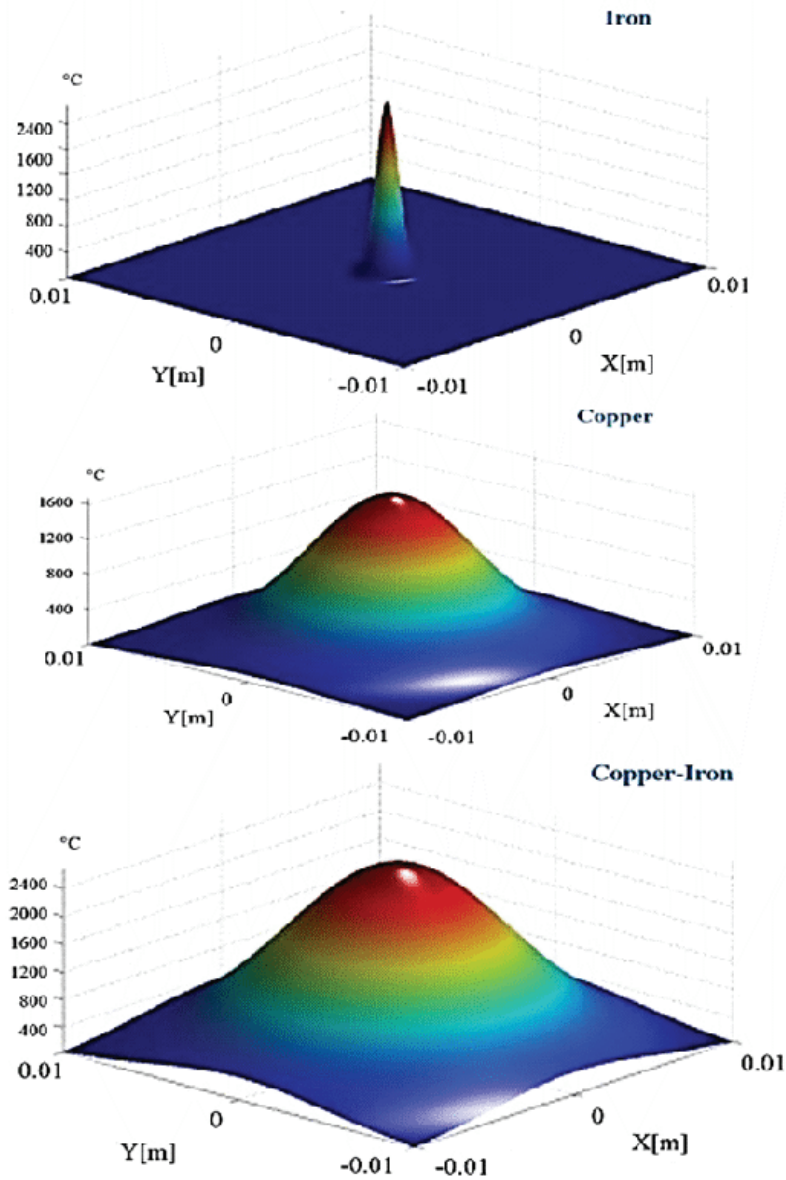


Figure 5. Thermal behavior of heat affected zone in, iron, copper and copper-iron system.

Iron has a higher ‘temperature resistance’ than copper whereas the copper has higher ‘thermal flow resistance.’ The copper-iron system is highly efficient in both ‘thermal resistant’ and ‘thermal flow resistant’.

4. Conclusion

The Qur'an is the book of guidance that leads people to prosperity. Although it is not a scientific book, but it has raised various scientific issues. The people at the time of revelation of the holy Qur'an did not have any scientific knowledge of some issues mentioned in it. It was after the passage of centuries that such issues were proved by scientific advances.

Dhu al-Qarnayn's dam can be considered as a miraculous aspect of the holy Qur'an. As it may be understood from the verses, the instruction and the precise expected properties for the mentioned structure reveals the non-accidental process familiarity with which would require advances in physics, chemistry and metallurgy.

The microstructure design of this structure indicates the masterpiece of engineering and indeed, the Cu-Fe alloy was armed with micro dendrite like of iron. The mentioned alloy and its phenomenal thermal and mechanical properties were unknown at that time. Consequently, carrying out such endeavor would require extensive knowledge in modern sciences like chemistry, physics and metallurgy.

As mentioned above, the construction method in verses confirms that he made a multi-structural three-layer dam. Such structure is durable and stable against most chemically destructive agents. Also, it has the optimum mechanical and thermal properties. Therefore, the powerful people of Gog and Magog could not to overcome the high tensile strength of iron, high ductility of copper and the high toughness of Cu-Fe alloy. The high thermal and temperature resistance serves as evidence for more structural power.

These original scientific issues indicate that the Holy Qur'an could not have originated from the knowledge of that time, but it must be based on superhuman wisdom. The verses of the Qur'an also indicate that the origin of the story is divine revelation, something of which people had not been aware. The peoples seeking help from Dhu al-Qarnayn, as confirmed in historical records, had not been in possession of such advanced technology.

However, the reports of the Qur'an were later proved by science and as it is the case in the story of Dhu al-Qarnayn, the holy Qur'an can be used in the development of science. The verses clearly show the manner of construction of the dam as well as the precise prediction of its properties. Therefore, for development the modern science, reflecting on the verses may lead us to have a better understanding of advancement in science. Consequently, the miracle of the Qur'an is not merely in the report, but it lies as well in anticipations.

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Reinterpretation of “the Darkness of the Three” in Verse 6 of *Surah al-Zumar*, in Light of the Components of the Scientific Miracle of the Qur'an

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ABSTRACT:

Original Paper

One of the phrases that has been considered by most commentators with the approach of empirical science is “the darkness of the three (the three veils of darkness)” in the verse (Q.39:6). They have interpreted this combination as the three darkneses of the abdomen, uterus and amnion-chorion. A view has also been put forward by contemporaries, which considers it as the spaces between the abdomen and uterus, the flesh of the uterus and the amnion, the amnion and the fetus, and has considered such an interpretation as an example of the scientific miracle of the Qur'an. In the meantime, another approach can be taken and based on the descriptive-analytical method and with the focus on the interdisciplinary approach, what is the “darkness of the three” is examined. Accordingly, by relying on the symbol of “complete and dense indifference and shapelessness before creation” for “darkness of the three,” this phrase can be considered as the platform for the formation of protein structures (based on genetic information contained in DNA codes), which are the cornerstone of the structure and biological processes of living organisms (without the production of proteins, no biological processes will be formed and no cells and organs will be made). It should be borne in mind that this interpretive possibility is also compatible with the components of the scientific miracle of the Qur'an.

KEYWORDS: Qur'an, Darkness, Number Three, Scientific Interpretation, Scientific Miracle, Protein, Three Protein Structures.

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I. Introduction

God says in the verse (Q.39:6), “He creates you in the wombs of your mothers, creation after creation, in a threefold darkness.” Many commentators, considering the darkness inside the body and especially the mother’s womb, have understood the darkness inside some parts of the mother’s body in which the fetus grows and is kept. This is while the context of the verse does not clearly take into account the parts of the mother’s body and only vaguely and briefly considers the continuation of human creation in the context of the “darkness of the three (a threefold darkness).” Accordingly, the reanalysis of the meaning of the words used in the above interpretation and the use of biology to explain this interpretation is necessary (a viewpoint based on linguistic methods such as etymology and symbolism of words in different cultures and religions with the focus on Quranic Context).

The background of the researches done on the meaning of “the darkness of the three” in the Qur’an includes traditional and modern interpretations of the Qur’an, which have been written so far under this interpretation. An article entitled “The concept of the darkness of the three” from the perspective of the Qur’an, narrations and new scientific findings (based on the verse Q.39:6)” has been published by Pahlawān and Shīrdil, which has the same popular interpretive views on the application of “The Darkness of the three” and considers some of the organs of the human body with a more accurate and scientific view and with the view of narrations. However, scattered works with linguistic and symbolic approach to the words used in the interpretation of “the darkness of the three” can be seen, such as: “The etymology of the Qur’anic word oppression and the study of its semantic evolution until the revelation of the Holy Qur’an” by Sarshar and Hejazi (2015) and “The place of the number three in the ancient Iranian culture and rituals” by Mahmudi (2005). So far, a detailed, methodical and independent research with this approach and the view of biology to study the semantic relations of the “three” in the verse and relying on it to analyze the “Darkness of the Three” has not been done. Therefore, the present study deals with the semantics of the “darkness of the three” based on the above approaches. Precisely, the question: “What is the meaning of the” darkness of the three “in verse (Q.39:6)?” has been answered in the present paper.

2. Terminology

Studying the number word “three” and its companion “darkness” which are used in the interpretation of “darkness of the three,” from a lexical point of view can be effective in understanding the meaning of this phrase more deeply, which have been studied in this section.

2.1. The Root TH-L-TH

“Three” in Hebrew, Aramaic and Syriac have been reported with the pronunciation *šālaš*, *telâtâ* and *tlotâ* meaning the number three (Gesenius, 1939, 1025; Jastrow, 1903, 1672; Costaz, 2002, 392). In Abyssinian pronunciation *šallasa* refers to an action performed for the third time (Leslau, 1991, 529). One contemporary scholar believes that the Semitic root *t-l-t*, the Arabic form of the triad, is a partial repetition of the root *t-l* with the Arabic form *thullah*. Therefore, the origin of this root goes back to the Afro-Asian word *cul* meaning seed (Orel & Stolbova, 1995, 115) and the remnant of its ancient meaning in Arabic *thail* means seed. Compared to surviving words, such as *thullah* meaning abundant and large number, in Afro-Asian roots can also have the meaning of abundant (Pakatchi, 2016, 48-49).

On the other hand, “three” was a sign of “plural” which was used after counting “one” and “two” (Danzig, 2007). The root of *th-l-th* in the Arabic language and culture denotes the number three and its derivatives (al-Farāhīdī, 1988, 8:214; al-Azharī, 1928, 15:45; al-Zamakhsharī, 1979, 74). However, with regard to “the largest derivation” (*al-ishṭiqāq al-akbar*) or “lexical exchange,” it is possible to raise the possibility of a semantic relationship between the roots *th-l-th* and *th-l-l* and another meaning could achieve for the “third.”

Subject to the above rules, whenever, while maintaining order, one of the three consonants in a word has been changed to another consonant, as in the case of the two words mentioned, the phonetic similarity is a sign of semantic similarity (Ibn Jinnī, 2010, 2:152 Ya‘qūb, 1987, 208). A semantic correspondence can be established between *th-l-l* and *th-l-th*. On this basis, according to the meaning of the root *th-l-l* (al-Farāhīdī, 1988, 8:216; al-Ṣāhib ibn ‘Abbād, 1993, 10:126; al-Zamakhsharī, 1979, 75) and

the Qur’anic uses of *thullah* indicating “a large number of people,”¹ also the root *th-l-th* could have this meaning. Therefore, in line with the ancient languages, it confirmed the existence of the concept of “abundance” along with the numerical meaning of the root *th-l-th*.

Examining the traditional ritual-cultural symbols of the number “three” in different cultures and religions can be a way to conceptualize accurately the “darkness of the three.” “Three” is a fundamental number all over the world. “Three” has also been a symbol of perfection. The Chinese say that “three” is an integer and an expression of wholeness and the end of emergence (Chevalier & Gheerbrant, 2008, 663-672; Nooraghayee, 2014, 39-41; Shepard, 2014, 358).

Multiplicity has also been one of the symbolic meanings of the number three in symbolic studies of different cultures and religions (Chevalier & Gheerbrant, 2008, 3:669; Cooper, 2013, 263; Nooraghayee 2014, 39; Schimmel, 2016, 81; Bruce-Mitford, 2009, 25). The number “three” symbolizes plurality, growth, and the first number contains the word “all.” Third means the whole number, because it includes the beginning, middle and end. The “three” force is universal and is subject to the three natures of the universe, namely heaven, earth and water. In many traditions, the number “three” was considered to mean “abundant,” meaning beyond duality. That is why Aristotle says, “The number three is the first number for which the word “all” can be used.” In the Egyptian language, the plural sign is three lines. “Three,” as a number of perfection, has played a role in the sacrificial rites of ancient Greece and Rome (Schimmel, 2016, 73-76).

Accordingly, the number “three” in different religions and cultures, in addition to the numerical meaning, indicates the meanings of the whole number, multiplicity and growth, which is also consistent with the root concept of this number.

2.2 The Root Z-L-M

The root *z-l-m* in Hebrew and Aramaic has been reported with the pronunciations *tlm* and *tlam*, respectively, meaning to oppress and injure (Gesenius, 1939, 378; Frankel, 1962, 35). This root has been used

1. A multitude from the former [generations] and a few from the latter ones, see the verse (Q.56:13-14).

ثُلَّةٌ مِّنَ الْأَوَّلِينَ وَ قَلِيلٌ مِّنَ الْآخِرِينَ (الواقعة/13-14)

in Syriac with the pronunciation *ṭlumâ* meaning oppressor and thief (Brun-Durand, 1895, 187). This is while “darkness” has the same root with the pronunciation *salmâvet* in Hebrew and *ṭolmâ* in Syriac meaning darkness (Gesenius, 1939, 1126; Brun-Durand, 1895, 188). This root is used in Abyssinia with the pronunciation *ṣalma* meaning to be blacked (Leslau, 1991, 556). “Oppression” is also used in Assyrian culture with the pronunciation *ṣalmu* meaning black and dark (Gelb, 1957, 77). Also, the connotation of this word in the ancient Hamito-Semitic languages is the word *čil*, equivalent to “shadow” in Arabic meaning, shadow, which in the Orul culture refers to the addition of “am” as *čilam*, Arabic *zallam*, and has been reported in the meaning “be dark” (Orel & Stolbova, 1995, 119).

Therefore, it seems that the old meaning of this root is darkness and blackness, and later it was developed in the sense of oppression and has taken on a moral burden in the sense of “inappropriate behavior” (Sarshar & Hejazi, 2015, 115). Most Arabic lexicographers have considered the meaning of “darkness” for the root *z-l-m* (al-Farâhîdî, 1988, 8:162; al-Şâhib ibn ‘Abbâd, 1993, 10:31; al-Zamakhsharî, 1979, 403).

Other meanings for the root *z-l-m* have been reported in the Arabic language and culture. For example, we can mention the “severity of evil deeds” (severe evil) (al-Farâhîdî, 1988, 8:162; Ibn Manzûr, 1955, 12:373). Linguists have considered *zulmah* from the same root to mean “disappearance of light” (al-Râghib, 1991, 537; Ibn Fâris, 1983, 3:467; al-Muṣṭafawî, 1989, 7:170). Accordingly, the root *z-l-m* in the Arabic language has various meanings such as darkness and the placement of an object outside its place. As mentioned earlier, this root has been used in ancient languages to mean shadow, darkness, and blackness, which later took on a moral connotation and was used to mean oppression.

“Blackness and darkness” in various religions and cultures symbolizes the initial darkness of the universe, fertility, life, emptiness, death, shame, despair, sadness, humility, forgiveness, dignity and black or dark blue as the first chaos (Cooper, 2013, 182-183; Chevalier & Gheerbrant, 2008, 3:685-695). Black is often symbolically known as cold, negative, and anti-all colors, and is associated with the first darkness and the initial indifference of the universe (before creation) (Serh, 1964, 96; Chevalier & Gheerbrant, 2008, 3:685-695; Cooper, 2013, 84).

In the Bible, before creation, the earth was shapeless and empty, and the darkness covered the faces of the lips. Therefore, “black” is a sign of the first darkness before creation, which has been referred to in various religions (Chevalier & Gheerbrant, 2008, 3:685-695; Cooper, 2013, 182-183). Seeing black animals, blacks, or dark-skinned people in a dream indicates that we are in contact with our early instinctive world (Chevalier & Gheerbrant, 2008, 3:685-695). Growth and creation take place in the dark (Cooper, 2013, 84).

In Eskimo mythology, there is a myth about the creation that “in eternal darkness, a raven, helpless to find food, longed for light with all its being, and the earth became bright” (Weil, 2004). The myth of creation among the African people of Kono in Guinea includes the beginning of creation from the stage of pure darkness (Beier, 1966). The Apache Indians knew the beginning of the creation of the earth in water and darkness (Leeming, 2010, 42). The indigenous peoples of Hawaii also believed that there was pure darkness at the beginning of creation (Leeming, 2010, 123). The Māori natives of Polynesia in the Pacific islands also believed that darkness and water existed in the beginning of the world (Leeming, 2010, 184). The Papago natives of Arizona, in one of their creation myths, believed that darkness and water first existed (Leeming, 2010, 211). In Indian myths of creation in Rig Veda, there was darkness in the early stages of the world (Baqershahi, 2010). Prenatal darkness is a symbol of invisible light. Relying on this relationship, darkness and light are opposed, which also consider darkness as a symbol of the stage before entering the religion (Cooper, 2013, 84).

In Babylonian myths, Mesopotamia and ancient Iran, the battle between light and darkness is mentioned (Leeming, 2010, 13). Therefore, the concept of birth also lies in darkness because darkness is the main background for the birth of light. On this basis, “black” was also a symbol of fertility and life, as in ancient Egypt and North Africa, black was considered the color of the earth and the cloud of rain (Serh, 1964, 96).

Accordingly, the main traditional ritual-cultural symbol for blackness seems to be the initial amorphous and indistinguishable world before the creation of the universe, which has a common meaning with other black symbols, such as the embryonic stage of the world, the instinctive world. Primary, birth, entry into the new religion, life, growth, motherhood and fertility.

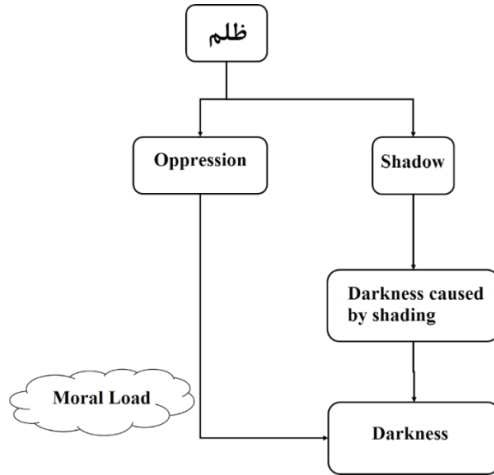


Figure 1. Etymological diagram of z-l-m in ancient languages.

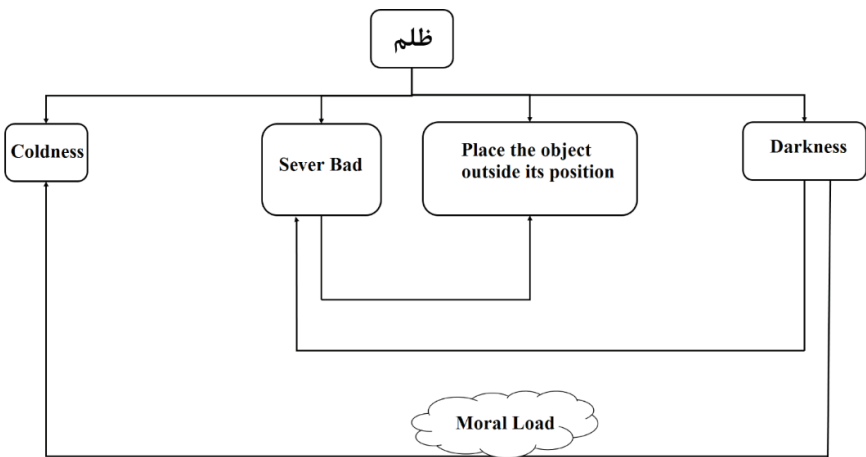


Figure 2. Etymological diagram of z-l-m in Arabic

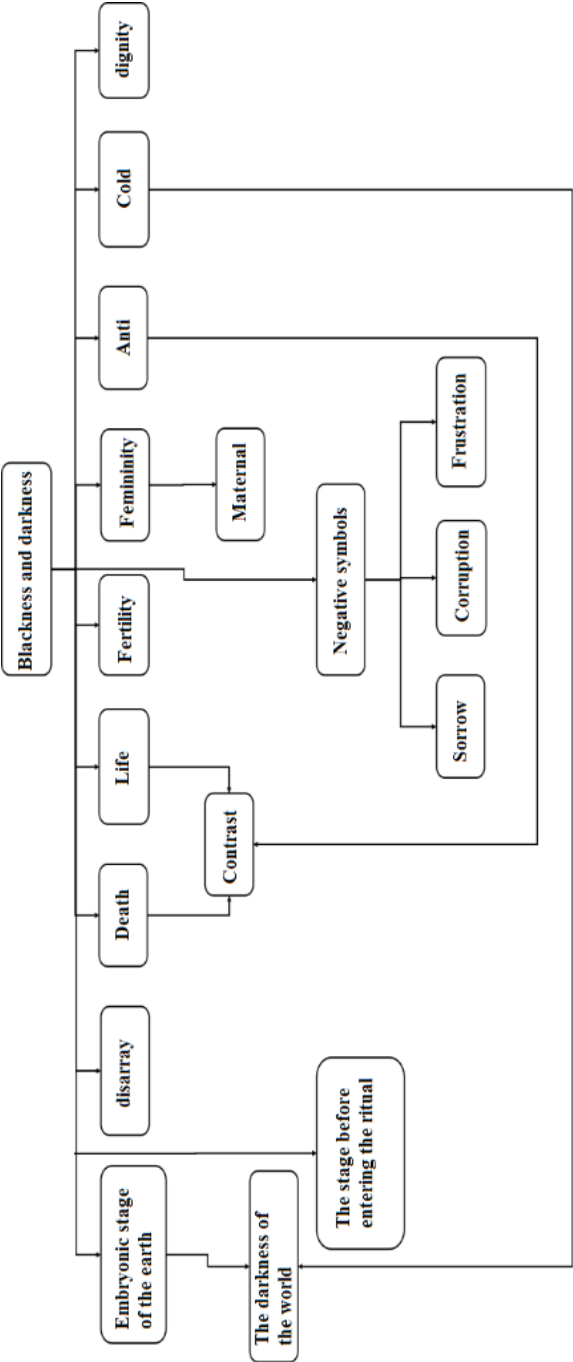


Figure 3. The symbolism of blackness and darkness

3. Qur'anic Applications

The analysis of the meanings of the roots and cultural-ritual symbols of the words *thalāth* and *ẓulumāt* that accompanies it, should be done with the focus on the Qur'an in order to judge the Qur'anic interpretation of "darkness of the three."

3.1. *Thalāth*

The root *th-l-th* has been used 32 times in the Qur'an, of which 6 and 11 times have been used in the form of *thalāth* and *thalāthah*, respectively. This word is used in the accompaniment of "days" in following verses:

He said, "My Lord, grant me a sign." He said, "Your sign is that you will not speak to people for three days except in gestures" (Q.3:41).¹

He said, "My Lord! Appoint a sign for me." He said, "Your sign is that you will not speak to the people for three complete nights" (Q.19:10).²

In the above verses, it is mentioned that three days (or day and night) the speech was taken from the prophet Zechariah as a sign for the good news of the divine bestowal of a child. Therefore, the number three here indicates a kind of mystery and holiness. The "three days" in these verses, which have a jurisprudential approach, indicate the number of days that a person must fast as an atonement for illness or breaking his covenants:

As for someone who cannot afford [the offering], let him fast three days during the hajj and seven when you return; that is [a period of] ten complete [days] (Q.2:196).³

He who cannot afford [any of these] shall fast for three days. That is the atonement for your oaths when you vow (Q.5:89).⁴

These three days of atonement replace another action that has not been performed and has been abandoned. Therefore, performing this atonement leads to the completion of the said action. On this basis, three

1. « قَالَ رَبِّ اجْعَلْ لِي آيَةً، قَالَ آيَتُكَ أَلَّا تُكَلِّمَ النَّاسَ ثَلَاثَةَ أَيَّامٍ إِلَّا رَمْزًا... » (آل عمران/41)

2. « قَالَ رَبِّ اجْعَلْ لِي آيَةً قَالَ آيَتُكَ أَلَّا تُكَلِّمَ النَّاسَ ثَلَاثَ لَيَالٍ سَوِيًّا » (مریم/10)

3. «... فَمَنْ لَمْ يَجِدْ فَصِيَامُ ثَلَاثَةِ أَيَّامٍ فِي الْحَجِّ وَ سَبْعَةٍ إِذَا رَجَعْتُمْ تِلْكَ عَشْرَةٌ كَامِلَةٌ... » (البقرة/196)

4. «... فَمَنْ لَمْ يَجِدْ فَصِيَامُ ثَلَاثَةِ أَيَّامٍ ذَلِكَ كَفَّارَةُ أَيْمَانِكُمْ إِذَا حَلَفْتُمْ... » (المائدة/89)

can be considered complete numbers. “Three” is used to express the end and the completion of the period of women, accompanied by *qurū*” in the verse below:

*Divorced women shall wait by themselves for three periods of purity [after menses] (Q.2:228).*¹

The function of “three” meaning “completeness” is also evident in another verse:

*Whereupon he said, “Enjoy yourselves in your homes for three days: that is a promise not to be belied!” (Q.11:65).*²

Because the three-month deadline for completing the blessings to the people of *Thamūd* and completing the argument with them before the stage of torment is depicted. This verse also refers to different categories of human beings from the right, left and forerunners:

*You will be three groups (Q.56:7).*³

Because the parties (*azwāj*) bond together to form a bunch or set and the Companions of the Right and the North and the forerunners are each a group of human beings, it seems here that the meaning of the *azwāj* is the different “guilds” and “groups” of human beings.

Therefore, addressing the three guilds also means the general public of various categories and guilds (Tabataba’i, 1996, 19:116). Therefore, “three” in this verse also means completeness and perfection. *Thalāth* is also used in the following verse accompanying “forked” (*shu‘ab*):

*Get off toward the triple-forked shadow (Q.77:30).*⁴

In this verse, God says to the people of hell: “Go to a shade [of dense and flammable smoke] that has three branches.” Many commentators have interpreted the three branches of this smoke in three directions (right, left and above the head) (al-Ṭabarānī, 2008, 6:418; al-Ṭūsī, 2010, 10:230; al-Māwardī, 6:179; al-Ālūsī, 1994, 16:194; Ibn ‘Āshūr, 1999, 29:402; Ṭayyib, 1990, 13:343). The intention seems to be that they will be tormented in every way and completely. Some have expressed the concept of completeness and perfection in the number three more clearly and the meaning of the three

1. «وَالْمُطَلَّقَاتُ يَتَرَبَّصْنَ بِأَنْفُسِهِنَّ ثَلَاثَةَ قُرُوءٍ...» (البقرة/228)

2. «... فَمَنْ تَمَتَّعُوا فِي دَارِكُمْ ثَلَاثَةَ أَيَّامٍ ذَلِكَ وَعَدَّ غَيْرُ مَكْدُوبٍ» (هود/65)

3. «وَكُنْتُمْ أَزْوَاجًا ثَلَاثَةً» (الواقعة/7)

4. «انظِّفُوا إِلَى ظِلِّ ذِي ثَلَاثِ شُعَبٍ» (المرسلات/30)

branches of fire smoke is the intensity and density and greatness of the smoke (al-Zamakhsharī, 1979, 4:680; Tabataba'ī, 1996, 20:154).

Accordingly, *thalāth* and *thalāthah* in the Qur'an, in addition to the concept of enumeration, indicate the meaning of wholeness and perfection, as well as the implicit meanings of holiness and mystery.

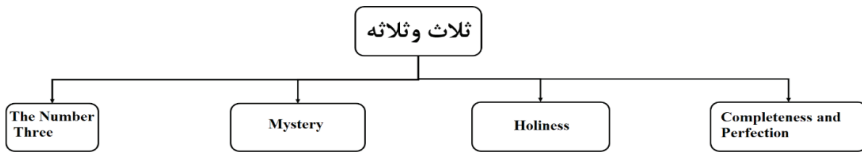


Figure 4. Diagram of Qur'anic uses of *thalāth*

3.2. *Zulumāt*

The word *zulumāt* (darkness) is used 22 times in the Qur'an. The word is used with “land and sea,” “earth,” “lightning,” “light,” “three” and sometimes without a nominal companion. In these verses, God refers to the “darkness of the land and the sea:

Say, “Who delivers you from the darkness of land and sea?”(Q.6:63).¹

Is He who guides you in the darkness of land and sea? (Q.27:63).²

It is He who made the stars for you, so that you may be guided by them in the darkness of land and sea (Q.6:97).³

The juxtaposition of land and sea can be an allusion to all places on earth. In these verses, the “darkness” of the whole earth is what God does to guide and save human beings from within it. In other words, in these verses, God is on one side and the servants caught in the “darkness” are on the other side. Hence, whatever “darkness” is, only God opposes and overcomes it.

In this verse, the abandonment of the hypocrites in “darkness” is mentioned:

And left them sightless in a manifold darkness (Q.2:17).⁴

1. «قُلْ مَنْ يُنَجِّيكُمْ مِنْ ظُلُمَاتِ الْبَرِّ وَالْبَحْرِ...» (الانعام/63)

2. «أَمْ مَنْ يَهْدِيكُمْ فِي ظُلُمَاتِ الْبَرِّ وَالْبَحْرِ...» (النمل/63)

3. «وَهُوَ الَّذِي جَعَلَ لَكُمْ النُّجُومَ لِتَهْتَدُوا بِهَا فِي ظُلُمَاتِ الْبَرِّ وَالْبَحْرِ...» (الانعام/97)

4. «...وَتَرَكْتَهُمْ فِي ظُلُمَاتٍ لَا يُبْصِرُونَ» (البقرة/17)

Therefore, God, who in the previous verses was the only savior of man from “darkness,” has not spoken of guidance and salvation here and has confirmed the abandonment of hypocrites in the position of “darkness.” It seems that the behavior and actions of some people, such as the hypocrites, have led to the grounds for benefiting from their guidance and salvation, which is expressed in this verse with the “disappearance of light.” Therefore, the only possible state for them is to remain in absolute darkness and, consequently, to go astray. The opposition of “darkness” to “light” is seen in the other twelve verses by stating “bringing out of darkness into light” for “believers” and “expelling from light to darkness” for “infidels,” for example:

Allah is the Guardian of the faithful: He brings them out of darkness into light. As for the faithless, their patrons are the Rebels, who drive them out of light into darkness (Q.2:257).¹

Here, too, God attributes “bringing out” to Himself, and in contrast to light, *ẓulumāt* can mean darkness and the resulting aberration. In this verse, God also speaks of a seed that is in the “darkness” of the earth and God is aware of its existence:

No leaf falls without His knowing it, nor is there a grain in the darkness of the earth (Q.6:59).²

Certainly, God knows the future of cultivating and bearing fruit (guidance and salvation) of this seed. Therefore, in this verse, God is on one side and “darkness” is on the other side. “Darkness” in this verse can mean the darkness inside the earth that no human being knows about.

In the following verse, unlike the previous verses, God has connected “darkness” with “heaven” and has used the companion with “lightning” which is attributed to the sky:

Or that of a rainstorm from the sky, wherein is darkness, thunder, and lightning (Q.2:19).³

In this verse, the fear of the disbelievers from “lightning” and “darkness” is on one side and God, who surrounds things, is on the other side, and there is no escape for them from the situation of darkness. Therefore, the

1. «اللَّهُ وَلِيُّ الَّذِينَ آمَنُوا يُخْرِجُهُم مِّنَ الظُّلُمَاتِ إِلَى النُّورِ وَ الَّذِينَ كَفَرُوا أَوْلِيَاؤُهُمُ الطَّاغُوتُ يُخْرِجُونَهُم مِّنَ النُّورِ إِلَى الظُّلُمَاتِ ...» (البقرة/257)

2. «... مَا تَسْقُطُ مِنْ وَرَقَةٍ إِلَّا يَعْلَمُهَا وَلَا حَبَّةٌ فِي ظُلُمَاتِ الْأَرْضِ...» (الانعام/59)

3. «أَوْ كَصَيِّبٍ مِّنَ السَّمَاءِ فِيهِ ظُلُمَاتٌ وَ رَعْدٌ وَ بَرْقٌ...» (البقرة/19)

“darkness” in the above verse can be darkness that is accompanied by fear and panic and the result is aberration.

In addition, there is another verse, which refers to the multi-layered nature and multiplicity of “darkness”:

Or like the manifold darkness in a deep sea, covered by billow upon billow, overcast by clouds, manifold [layers of] darkness, one on top of another: when he brings out his hand, he can hardly see it (Q.24:40).¹

Layering in the above verse is interpreted in such a way that the actions of infidels are like dense and double darkness in which they cannot even see their hand (Tabataba’i, 1996, 15:132).

Accordingly, the *ẓulumāt* in the Qur’an is interpreted as a dark and frightening situation that leads the trapped person astray so that it is impossible to get out of it. This is absolute darkness and can be very dense and multi-layered. This situation - that is, being in “darkness” - can occur in all places on earth, in the earth and in the space of the heavens (the universe known to humankind). God has used “light” and the two verbs “salvation” and “guidance” in contrast to “darkness” and has attributed it only to himself. In some cases, the knowledge of the “darkness” and the creature in it is considered to belong to God.

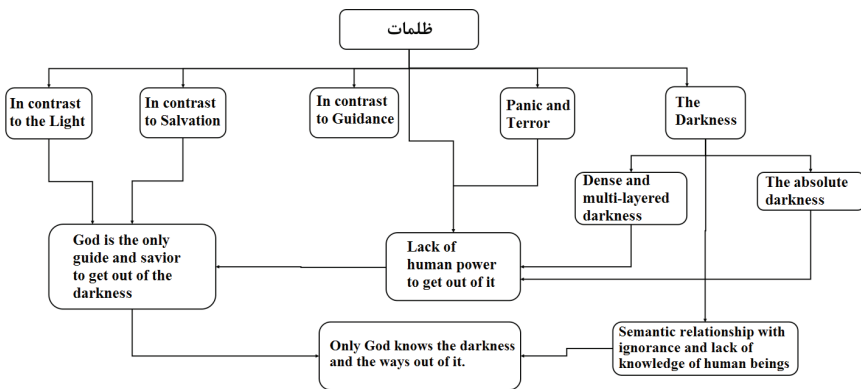


Figure 5. Qur’anic uses of *ẓulumāt*

1. «أَوْ كَظُلُمَاتٍ فِي بَحْرِ لُجِّيٍّ يَعْشَاهُ مَوْجٌ مِنْ فَوْقِهِ مَوْجٌ مِنْ فَوْقِهِ سَحَابٌ ظُلُمَاتٌ بَعْضُهَا فَوْقَ بَعْضٍ إِذَا أَخْرَجَ يَدَهُ لَمْ يَكَدْ يَرَاهَا...» (النور/40)

4. Possible Interpretations for “The Darkness of the Three”

The possible meanings derived from the etymology, cultural-ritual symbolism and Qur’anic uses of the words “darkness” and “three” can be assessed and analyzed with different contexts provided by the commentators and, consequently, the interpretive possibilities proposed by them. Many commentators have considered the meaning of “darkness of the three” to be the darkness inside the mother’s abdomen, uterus and amnion-chorion (Muqātil ibn Sulaymān, 2002, 3:671; Ibn Abī Zamanīn, 2003, 2:239; al-Samarqandī, 1995, 3:178; al-Ṭabarānī, 2008, 5:364; al-Ṭabarī, 1991, 23:125; al-Tha‘labī, 2001, 8:222). This view can also be seen in some sources of later narrations quoting Imam al-Bāqir (PBUH) (al-Fayḍ al-Kāshānī, 1994, 4:314; al-Qommī al-Mashhadī, 1989, 11:280; al-Arūsī, 1994, 4:477). Furthermore, “the darkness of the three” in the prayer of Imam al-Ḥusayn (PBUH) on the day of *‘Arafah* is known as flesh, skin and blood (al-Majlisi, 1982, 3:64).

Another view has also been put forward by contemporary scholars according to the traditions and views of biology, which the meaning of “darkness of the three” includes the spaces between “abdomen and uterus,” “flesh of the uterus and amnion” and “amnion and fetus” (Pahlevan & Shirdel, 2016, 7). Some have interpreted the above-mentioned interpretation as the darkness of “fathers’ loin (*ṣulb*)” and “mothers’ womb” (al-Māwardī, 5:116; al-Ṭabrisī, 1993, 8:765; Ibn al-Jawzī, 2001, 4:9; al-Zamakhsharī, 1979, 4:114). In the meantime, there are also monotheistic views, such as that the meaning of “darkness of the three” is physical nature, plant and animal soul (Ibn ‘Arabī, 2001, 2:198).

According to another study (Tarokh et al., 2016), and its combination with the findings of the present study, perhaps the cell, the intracellular environment and the genetic material within the cell nucleus can be considered as other proposed examples of “darkness of the three.” All the above views are based on the three layers of darkness, and if examined more carefully, the accuracy of the narrations can be accepted or questioned. What should be considered in this research is the degree of compatibility of these views with the meanings obtained from the semantic and symbolic study of the said interpretation. Obviously, each of the above examples is fully consistent with the concept of “three layers of darkness” – which was one of the approved meanings in view of the semantic relations of the “three” in the verse.

Relying on the main symbol of “blackness and darkness” in different religions and cultures, namely, “the initial shapelessness and indifference before creation,” the possible meaning of “three layers of darkness” can be transferred to another example. Thus, in the mother’s body,¹ in an amorphous bed and at a stage where there is still no differentiation, the first structure of the protein is formed and long chains of biopolymers are formed. These proteins are made from genetic information contained in DNA codes, and in the next step, this long polymer chain is twisted on itself to form a meaningful form containing bio molecular effects. This stage is interpreted as the second structure of the protein.

In the last step, a final three-dimensional spatial structure of folds, rotations and other topological events is formed on the previous bed. This step is referred to as the third protein structure (Fromm & Hargrove, 2012, 36). Therefore, in three continuous stages, from darkness in the symbolic sense of shapelessness and indistinguishability, a complex and three-dimensional structure is created. Proteins are the key to bio molecular biology in the biological sciences; they are the cornerstone of the structure and biological processes in living things. Without them, no biological process would have taken place and no cells or organs would have been made. Therefore, the creation of the first cells in an embryo, when it is in the mother’s womb, takes place through the production of these proteins,² and this case can also be suggested as one of the possible examples of the “darkness of the three.”

In the following, with the approach of scientific contemplation and scientific interpretation, and of course with regard to the polysemous approach (and without denying other interpretive

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1. What follows is the synthesis of proteins in the reproductive process in the mother’s body after fertilization. Although protein synthesis is present throughout the life of all living organisms, here we focus on the process of protein synthesis during reproductive and embryonic reproductive processes. In other words, we examine an instance of a scientific phenomenon as an instance of the meaning of the verse.
 2. Although other biological components, substances, and molecules (such as lipids, etc.) also play a number of primary or secondary roles in the process, structure, and function of living organisms, these are proteins that, from different perspectives, have key and unique roles, so that some researchers consider protein mechanisms as the main foundation (especially for cybernetics and control and complexity processes) in the early layers of the construction and structure of life. For example, proteins are considered the boundary between viruses and organic structures (in terms of complexity and biological cybernetics) and are considered a kind of “proto-living” structures. However, we are talking about proteins here, and this does not negate the role of other biological materials in biostructures.

opinions), some appropriate proportions have been considered about this noble verse:

He created you from a single soul, then made from it its mate, and He has sent down for you eight mates of the cattle. He creates you in the wombs of your mothers, creation after creation, in a threefold darkness. That is Allah, your Lord! To Him belongs all sovereignty. There is no god except Him. Then where are you being led away? (Q.39:6).¹

- “A single soul” (*nafs wāhidah*):
Proportion to monomers (protein building blocks).
- “Then made from it its mate” (*thumma ja‘ala minhā zawjahā*):²
Conformity with polymerization in the process of polypeptide synthesis for the first stage of protein synthesis.
- “And He has sent down for you eight mates of the cattle” (*anzala lakum min al-an‘ām thamaniāta azwāj*):
Compatibility with 8 nucleobases³ that carry information and protein construction maps (4 DNA nucleobases and 4 RNA nucleobases).
- “He creates you in the wombs of your mothers” (*yakhluqukum fi būṭūni ummahātikum*):
All of these synthesis steps take place on host substrates (such as the cell nucleus, then the ribosome, then the first structure, then the second structure, and then the third structure). It is as if each bed or structure plays the role of the mother’s womb and orphanage for the next stage product.
- “Creation after creation, in a threefold darkness” (*khalqan min ba‘di khalqin fī zulumāt thalāth*):

.I «خَلَقَكُمْ مِنْ نَفْسٍ وَاحِدَةٍ ثُمَّ جَعَلَ مِنْهَا زَوْجَهَا وَ أَنْزَلَ لَكُمْ مِنَ الْأَنْعَامِ ثَمَانِيَةَ أَزْوَاجٍ يَخْلُقْكُمْ فِي بُطُونِ أُمَّهَاتِكُمْ خَلْقًا مِنْ بَعْدِ خَلْقٍ فِي ظُلُمَاتٍ ثَلَاثٍ ذَلِكُمْ اللَّهُ رَبُّكُمْ لَهُ الْمُلْكُ لَا إِلَهَ إِلَّا هُوَ فَأَنَّى تُصْرَفُونَ» (الزمر/6)

2. Other interesting scientific examples for this ascent of the holy verse and other ascents have already been presented in other researches (for example, some researchers have suggested that the single soul and its pair have a proportion to the original egg cell and its double division). But here, our focus is on the protein case to examine a suggested case for the verse. According to the polysemous approach, this does not negate the accuracy of other scientific examples for this noble verse.
3. There are good arguments for this proportionality, such as context, lexical meanings, interpretive evidence, and apparent proportionality of the structure of these molecules with related semantic descriptions and so on. Expressing these reasons requires a separate article for consideration, some of which were presented orally.

The first structure becomes the second structure during the first structural transformation (folding, etc.). The second structure becomes the third structure during the second structural transformation. The third structure becomes the fourth structure (the final structure of the protein) during the third structural transformation.

In each of these steps, from a large number of possible movements and a large number of possible transformations and many degrees of freedom, the process is precisely directed towards the construction of the specific product. Like directing a growth or movement in the heart of darkness. In the dark, all directions are equal, but it is the guide that determines a particular desired direction. Here, too, at each stage, although many states are possible, conditions and control mechanisms transform the previous structure into exactly the next complex structure (and not other things).

- “That is Allah, your Lord! To Him belongs all sovereignty” (*dhālikum Allah rabbakum lahu al-mulk*):

Your Lord is such a Lord that all the parts of the world, large and small, are under His command, will, providence, creation, and making. Perhaps one of the examples of God’s kingdom in this verse, in addition to macroscopic beings, is the wonderful, complex and astonishing world of microscopic events (such as the events of protein synthesis and function).

- “There is no god except Him. Then where are you being led away?” (*lā ilāha illāhu fa’annā tuṣrafūn*):

When the whole universe is under God’s “Developmental guidance” and worship (even the particles that make up proteins), how do you turn away from God’s “legislative guidance” and worship?

It should be borne in mind that the second possible meaning for “darkness of the three” means “complete and dense darkness and horror,” which was introduced by emphasizing the concept of “completeness and perfection” for the “three,” in this verse can be in three stages (in a dense form and in perfection with great intensity) and God is the only guide and savior of these dense darknesses. With this view, creation can be considered as the source of human guidance and salvation, and considering the continuity in creation (*khalqan min ba’di khalqin*); the above interpretation can be considered as a sign of continuous divine guidance and salvation during human creation. Accordingly, the second possible meaning: “complete and dense darkness” can also be considered as an implicit possible meaning along with the first meaning (i.e., triple darkness).

Table 1. Comparison of instances of “*ẓulumāt thalāth*” in different interpretive probabilities

Commentary Number	The main sources for each of the Commentaries	The First Layer	The Second Layer	The Third Layer	Type pf Viewpoint And its level
1	Ibn al-‘Arabī	physical nature	vegetable nature	animal nature	systemic And Holistic
2	al-Ṭabrisī, al-Māwardī, al-Zamakhsharī and others	fathers’ ʕulb (loin)	mother’s abdomen	uterus	atomistic and macroscopic
3	the tradition of Imam al-Bāqir (PBUH), Muqātil ibn Sulaymān, al-Ṭabarī, Fayḍ Kāshānī and others	abdomen	uterus	amnion-chorion	atomistic and macroscopic
4	Pahlevan and Shirdel	the spaces between the abdomen and uterus	the spaces between the flesh of the uterus and the amnion	the spaces between the amnion and the fetus	atomistic and macroscopic\ microscopic
5	the prayer of ‘Arafah, al-Majlisī	flesh	skin	blood	atomistic and macroscopic\ microscopic
6	Tarokh, Besharati Z., Besharati M. R.	cell	the intracellular environment	the genetic material within the cell nucleus	atomistic and microscopic
7	the current study	the first structure of the protein	the second structure of the protein	the third structure of the protein	atomistic and molecular
8	future researches	smaller structures	smaller structures	smaller structures	smaller dimensions

Table 1 compares the different instances of the “darkness of the three” in different interpretive probabilities. From what we see in this table, it can be argued that neither the set of interpretive opinions, nor the set of hadith and narrative evidence, nor the set of previous research of our contemporaries, is a simple one-dimensional, one-perspective approach. Putting these sets together represents a polysemous spectrum: from general and transcendental instances (such as commentary No. 1 in the table), to macroscopic and tangible (such as commentary Nos. 2 and 3 in the table), to microscopic and tangible (Such as commentary Nos. 4 to 6 in the table).

In addition, the proposed example of the “darkness of the three” in this article (i.e., protein structures) can connect the top and bottom of the verse from a conceptual and semantic point of view, more coherent than the previous interpretive theories for this verse. Because the biological instances for the “single soul” (*nafs wāḥidah*) and the nucleotides for the cattle (*al-an‘ām*), mentioned at the beginning of the verse, are in perfect agreement with the structure and synthesis of the protein. This is a competitive advantage (compared to the other interpretations suggested for this verse). Previous interpretations seem to have encountered difficulties in relating to the various concepts contained in this verse. Of course, semantic complexity or simplicity cannot be the only reason for rejecting or accepting an interpretive statement, but in the end, for the *mujtahids* of interpretation, it can be a kind of sign and symmetry for the final inference of the interpretive opinion.

Of course, our proposed theory for the meaning of the term “darkness of the three” is, of course, not without its weaknesses. For example, if we consider the classical approaches to the interpretation of the Qur’an, which typically in many cases equate the specificity and appearance of a meaning with the mapping of lexical meanings, certainly because in the Arabic vocabulary of the age of revelation, there is no reference to protein and words for our proposed meanings have no semantic appearance, nor any textual signification. Of course, it seems necessary to mention that

according to some traditional interpretive theories,¹ the possibility of dialogue between the “classical methods of interpretation” and “approaches to scientific interpretation and scientific miracle” is established in the Shi‘i discourse of interpretation of the Holy Quran.

Given the principles, reasons, evidence, and possibilities presented in this article for the proposed approach, the autonomous theory of this article can be considered in terms of a polysemous approach to the verses of the Holy Qur’an, a suggestion to understand one of the examples of “threefold darkness” and a possibility of interpretation for more accurate and reasoned research (based on the rules and principles of understanding, contemplation and interpretation of the Qur’an based on the interpretive traditions of the prophet and his family (*Ahl al-Bayt*)).

If, in future research, a coherent and reasoned theory for interpreting this noble verse can be presented based on the theory proposed in this article, then it may be possible to claim the scientific miracle of the Holy Qur’an on this noble verse (based on the reference to the structures and how protein is synthesized).

1. Theories such as: “matching instances” (*al-jary wa al-taṭbīq*) with the reading of Tabataba’i, ‘symbolic meanings,” “polysemy,” “multi-layered meaning,” and even some traditional approaches to esoteric interpretation (*al-ta’wīl*) such as the approach adopted by Imam Khomeini on the issue of interpreting the meanings of the verses of the Holy Qur’an.

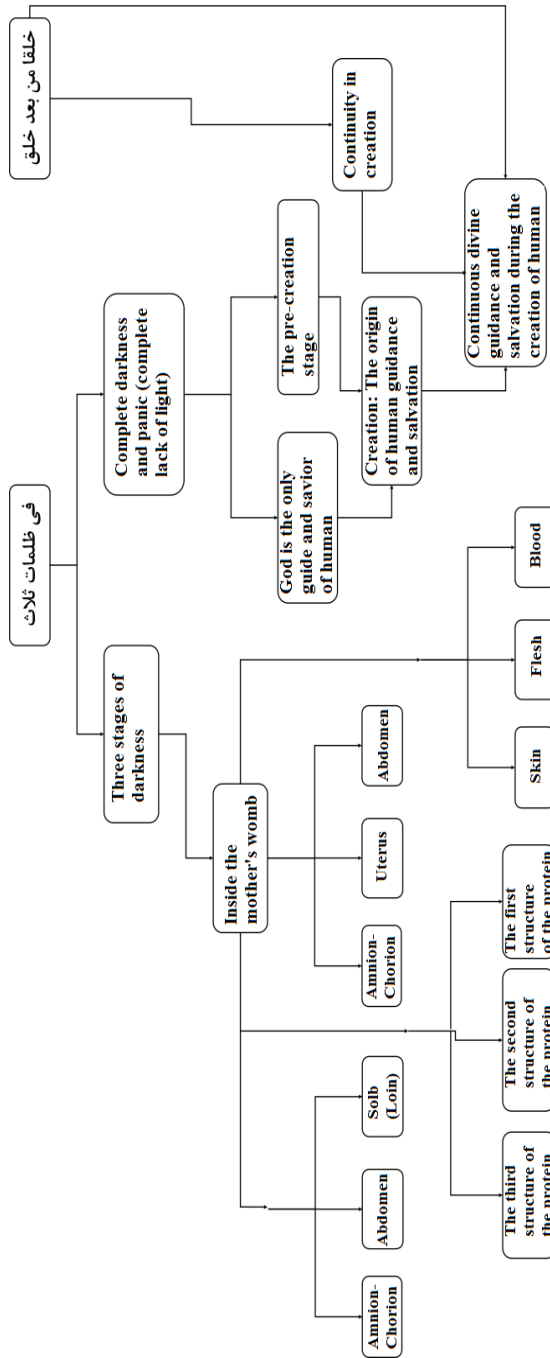


Figure 6. Interpretive possibilities diagram for *zulumat thalath*.

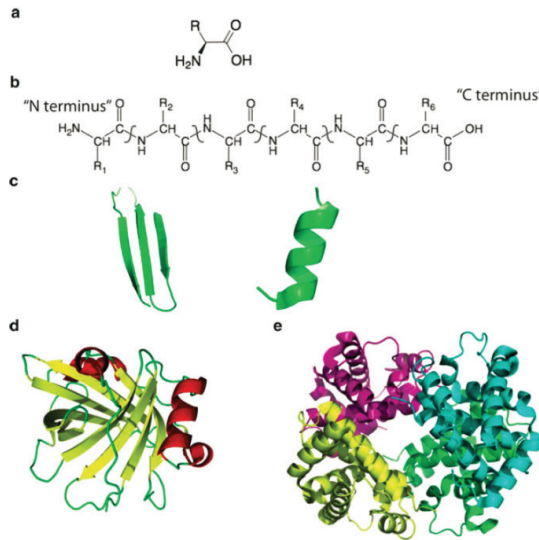


Figure 7. Four protein structures (Fromm & Hargrove, 2012, 36). In section a, we see a building block. In section b, c, d and e, we see the first, second, third and fourth structure respectively.

5. Conclusion

Common meanings in the Qur’anic roots, symbols, and uses of “three” and “darkness” include “number three, intensity, perfection, and density,” and “darkness, shapelessness, and indistinguishability before the creation of an object,” respectively. With regard to these meanings, the “darkness of the three” can be interpreted as complete, dense darkness, shapelessness and indifference, or three layers. Therefore, considering the meanings of “indifference, the bed of differentiation, the bed of emergence, the bed of manifestation and the bed of creation” for darkness and considering their respective meanings for “creation after creation” (i.e., distinction after differentiation, emergence after emergence, or creation after creation), The Qur’anic phrase “creation after creation in the darkness of the three” can be understood as three successive layers and three stages that occur one on top of the other and in total complete a process of creation.

In a polysemous approach based on the method of scientific interpretation and considering the context, it is possible to raise the possibility in the interpretation of verse 6 that the verse contains a scientific reference or scientific miracle to a biological phenomenon – “Darkness of the three” refers to the three steps in making proteins based on genetic information in DNA.

Proteins are the building blocks of the biological structures and processes of living organisms, and genetic information in DNA describes them. Without them, no biological processes and no cells or organs will be made, and they are the key to living things from a biomolecular perspective in the biological sciences.

Basically, in the first stage, biopolymer chains are made from information in DNA (the first stage, which is called the first protein structure), then this long polymer chain is twisted on itself to build a meaningful form containing a biomolecular effect (the second stage, which is called the second structure of the protein). Finally, in the final step, a final three-dimensional structure of folds, rotations, and other topological events is formed on the previous substrate (the third step, which is called the third protein structure). There is a fourth structure for proteins that does not have topological and structural operations (as much as it does in the process of making the first to third structures) in building the fourth structure. In other words, the fourth structure is a kind of packing (and not a construction from a mass of components), and in this respect it may be possible to distinguish between it and the first three structures. Otherwise, we can consider the argument that the fourth structure, such as the meaning of perfection and intensity for “three,” should be considered.

In this case, the darkness of the three means the construction of these proteins, which are the basis of living organisms and a kind of creation of living beings, in a context that is initially completely indistinguishable and amorphous. Both of these possibilities can be considered with a polysemous approach to the interpretation of the “darkness of the three.”

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The Relation between the Language of the Qur'an and Science

(A Comparative Approach to the Features of the Language of the Qur'an and Science and Their Important Differences)

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ABSTRACT:

Original Paper

The true interdisciplinary study needs knowledge and mastery in three levels of epistemological, methodological and linguistic requisites. The linguistic level is one of the most important fundamental levels in science, which needs to be considered in interdisciplinary communication. Two major approaches about the language of the Qur'an are considered by researchers till now: philosophic-hermeneutics and textual. Muslim researchers are interested in the former approach and orientalist frequently incline to the latter. Although the relation between the language of the Qur'an and the language of science with text-oriented approach is less frequently taken into account. Considering the foresaid approach in this article, the author studies the differences between the language of the Qur'an and the language of science and classifies them into five categories: 1. The use of ambiguity and linguistic amphibology; 2. The use of analogy, metaphor and metonymy; 3. Holism and polysemy; 4. The application of the language of sermon and dialogue; 5. The application of verbal complexity. The use of these five linguistic features of the Qur'an is to a large extent different from their use in science. It thus causes complexity in the relation between the Qur'an and humanism on the one hand and experimental sciences on the other.

KEYWORDS: The language of the Qur'an; the language of science; ambiguity and amphibology; holism and polysemy; sermon and dialogue; verbal complexity.

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I. Introduction

The discussion about the language of the Qur'an is an age-old controversial subject in Qur'anic Studies. Clearly by talking about the language of the Qur'an, it does not mean the Arabic language or Arabic dialects used in it. In this article two approaches can be considered to the word "language": the philosophical-hermeneutic approach and the textual approach. In the philosophical approach these are the important questions: Is the language real or symbolic? ordinary or special? contextual or non-contextual? But in the textual approach this is the discussion of the differences between stylistics, textual or intertextual that have importance. Muslims are usually interested in the philosophical-hermeneutic approach and orientalist incline to the other.

We can count important items that take place in the first classification in relation to the language of the Qur'an, as follows: 1. The language of the Qur'an is an ordinary one that is based on the language of comprehension and custom of declamation (al-Khu'i 2015, 281; Maliki Miyānjī 1998, 25); 2. The language of the Qur'an is a special language. This uniqueness can be due to the fact that it is "contextual" and to understand it, one must pay attention to its main context and origin (Izutsu 1989, 5) or caused by being symbolic, i.e., the way that mystics consider the Qur'an (Sells 1996, 224) or because it is the language of guidance and faith (Saidi Roshan 2002, 24); 3. The language of the Qur'an has a combinatorial approach and redaction, news, mystery, allegory, analogy, metaphor, truth and metonymy can be seen in it (Tabataba'i 1996, 3:250-251; 1:256). The philosophic-hermeneutics approach to the Qur'an has the prime of place in the literature, though the textual or intertextual approach is usually discussed to a lesser extent.

However, in relation to the second approach which seeks to discuss different styles of the Qur'an and to express its relation with other texts, Alan Jones explains the relation of the language of the Qur'an with other common styles during the Prophet's era. Hence, he considers four styles in relation to the Qur'an: the style of the soothsayer (Jones 1994, 33-37), the style of the orator (ibid., 38-41) and the style of the story-teller (ibid., 41-42). This study seeks to determine the relationship between the linguistic structures in the Qur'an and the literary texts during the time of the Prophet and in pre-Islamic times. Regarding the relation between the language of the Qur'an and other one needs to consider the history of the Qur'an. This research pursues to find the different utterance styles in this book through discussing the linguistic differences of the disparate sections of the Qur'an. Theodor Nöldeke who was the first scholar to adopt this approach divided the Qur'an into four distinctive styles and into four

periods (Nöldeke 2004). Afterwards, many others demonstrated these distinctive styles in the Qur'an and determined the occasion of revelation of the verses accordingly (Neuwirth 2002, 252-259). When we talk about the language of the Qur'an we should not forget the relation between the language and the textual style of the Qur'an. The strong resemblance between *Surah al-Rahmān* (55) and Psalm 136 needs to be taken into account. Although this is a very new discussion, some researchers have recently addressed the issue (Neuwirth 2004, 473-475).

What is most relevant to this article is the relation between the language of the Qur'an and that of science; something that has not been considered so far. Such an issue is generally addressed within the context of the relationship between science and religion (Barbour 1983, 268). However, these works also generally address philosophical issues, as positivists and interpreters have argued. Considering the text of the Qur'an and emphasizing the propositions that fall into scientific categories, we will try to discuss the style of the Qur'an and compare it with the style of scientific propositions.

Undoubtedly, in order to establish a relationship between the Qur'an and science, it is necessary that the linguistic differences and similarities between the two be well considered and, accordingly, the quality of their relationship be addressed.

2. *The Language of the Qur'an and That of Science*

When the term "language" is used, a different meaning is inferred depending on what other word it is added to. Generally, whenever the word is used without any suffix, "ethnic-national language" is meant; It is a set of abstract and mental systems that are part of the capabilities of the human brain and are used to create communication between human beings (Haghshenas 1977, 12-13). Distinctly, when the term is used in combination, in the form of language of science or language of the Qur'an, it is a special kind of language in which ethnic-national language is its substructure (Pakatchi 2009, 114). "Language" in this sense refers to a particular style of expression that disciplines and experts in each field of knowledge use to find answers to questions. This particular style is distinct from the ethnic-national language used by users of that knowledge. This particular style of expression is used in two situations: the methods of reasoning and justifying theories; the constructing the meaningful propositions and, consequently, creating the parts, chapters and the whole of that knowledge. What is most relevant to the subject of this article is the latter.

2.1. Linguistic Differentiation of Disciplines in Categorization and Structuring

One of the most important linguistic distinctions between disciplines is their accuracy. Although accurate language is used in experimental sciences, the language of humanities is inaccurate. Accurate language means that all propositions are clear, expressive, detailed and unambiguous. Scientific theories in the experimental sciences must have these characteristics, otherwise they will not be acceptable. But in the humanities, especially in disciplines such as literature and mysticism, a completely different language is used. Ambiguity and amphibology are two important devices in literature and mysticism that cause the increasing beauty and rhetorical features of expressions. Consequently, the clarity of the statements is not necessarily an advantage of such disciplines. Generalization is another feature that occurs in texts with inaccurate language and is rarely seen in texts that have accurate language. Generality and ambiguity lead to polysemy in the language of disciplines such as literature and mysticism. This polysemy enables the experts to convey many concepts to the audience through concise texts. In the form and formulating, clear distinctions can also be made between different disciplines. The use of literary devices like sermon, dialogue, analogy, metaphor, ellipsis and verbiage is frequently seen in the humanities, while in the language of the experimental sciences it is less frequently seen. Accordingly, here we address the linguistic features of literary texts and the special form of the Qur'an and express its differences with other disciplines. Understanding these differences and similarities seems essential to accessing interdisciplinary Qur'anic studies.

3. Distinctions between the Language of the Qur'an and Science

Any the researcher of Qur'anic interdisciplinary studies needs to be aware of the current differences between the language of science and that of the Qur'an. In this article we express the features of the language of the Qur'an and clarify its differences with the language of science. When it comes to science, it can cover any area of knowledge, such as the humanities and arts, social sciences, natural sciences and medical sciences. We will now focus on the language of the Qur'an and after stating each of the features, we will determine how it relates to the language of other fields of knowledge. It is necessary to note that the features of the Qur'an are not exclusive to the following features and undoubtedly other features can also be mentioned. In this research we only emphasize on a few features that are less regarded. Also, expressing these distinctions does not

mean that there is no connection between the Qur'an and other human sciences. Rather, these distinctions only indicate that establishing the right communication depends on paying attention to the types of knowledge and trying to create a common language between them. Regarding the attestation of the revocability of scientific propositions as one of their principal properties can be found in some of the Qur'anic verses that may have a common language with science. In fact, a characteristic such as touching upon falsifiability, as the main feature of scientific propositions, is evident in some verses of the Qur'an and the verses can therefore have a common language with science.

3.1. The Language of Ambiguity and Amphibology vs. That of Clarity and Explicitness

In approaching a text, one of the linguistic policies is to use or not to use propositions with ambiguity and amphibology. The language of the exact sciences is at odds with such an approach. The language of science has the characteristics of clarity and is without verbal and semantic Complication. The modern science emphasizes that scientific questions and assumptions should be as clear as possible (Hempel 1958, 46). On the contrary, ambiguity and amphibology play an important role in literary texts, and in particular, the Holy Qur'an¹. Mohammad has been considered as the explanatory (*mubayyin*) of the Qur'an (Q.16:44). Accordingly, Muhammad is considered as an explanatory if the ambiguity in the text of the Qur'an is prominent and this ambiguity also makes the role of the Prophet as its interpreter meaningful.

The rhetoric of a literary text depends on the extent to which the language user uses the literary industries. That is why the existence of different types such as double entendre (*ihām*), advancing and retarding (*taqdīm wa ta'khīr*), opacity (*ibhām*) and brevity (*ījāz*) has been accepted in the Qur'an. All of these types can lead to ambiguity and polysemy of propositions in the text, but no scholar has considered these components as defects of the Qur'an and other literary texts. Indeed, the existence of such components in literary texts implies eloquence. On the contrary, in the language of science, the existence of such devices and figures would be unjustifiable and unacceptable.

1. It should be noted that believing in the existence of ambiguity and amphibology in the language of the Qur'an does not mean denying explicit and ambiguous propositions. Undoubtedly, there are several propositions in the Qur'an that can be explicitly understood.

For example, in *وَتَرْغَبُونَ أَنْ تَنْكِحُوهُنَّ* “you desire to marry them” (Q.4:127) there is a consensus among the Qur'an researchers that the device of ellipsis has been used (al-Suyūṭī 2000, 1:641). The ellipsis in this clause is due to the omission of the prepositions, which is always used in conjunction with the verb *رغب* in Arabic, as a result of which two senses are being implied: being interested in (*raghiba fi*) and hating something (*raghiba 'an*). As a result, this phrase is circulating between two antonyms: Do they want to remarry their ex-spouses or they are reluctant to marry them? In the Qur'an (Q.81:17) this ambiguity and polysemy can also be seen. Here, the polysemy of the word *عسعس* ('*as*'*as*) is due to the existence of two opposite meanings in its original form and its contextual meaning. Since there is no significant analogy for choosing one of these meanings, the proposition has two different meanings, it is not possible to prefer and choose one of them.

Unlike the language of science, polysemy and ambiguity are among the important reasons why we encounter an interpretable text in literary texts. In other words, the language of science is translatable, not interpretable, but the language of the Qur'an is interpretable. The language of science must be such that, as much as possible, the capacity for different interpretations is taken away from it. But in literary texts, the possibility of different interpretations increasingly adds to the semantic beauty of propositions.

3.1.1. *The Proposition Ambiguity in Capturing (Hostage Taking)*

One of the most important issues recently discussed in the law and ethics of war is the permissibility of taking hostages and prisoners of war for ransom. Most legal texts that look at this issue from a moral point of view do not allow such a thing. It may be thought at the outset that some verses in the Qur'an (8:67-68) can be a proof of this legal theory: “It is not for a prophet to have captives [of war] until he inflicts a massacre [upon Allah's enemies] in the land. Some Muslims desire the commodities of this world, but Allah desires [for you] the Hereafter. And Allah is Exalted in Might and Wise. Had it not been for a previous ordainment from Allah, a severe penalty would have reached you for the (ransom) that ye took.”¹

But these verses have a fundamental ambiguity that makes it difficult to relate them to legal theory, since a completely different meaning from the first meaning is also obtained from these verses. According to the second reading, no prophet is allowed to have captives in exchange for ransom

1. The English translation of the verses is by Yusuf Ali (Ed).

until the fire of war has subsided [and the enemy needs to be dealt with during the war]. This reading is completely contrary to the meaning we mentioned at the beginning of this discussion (al-Ṭūsī 2002, 5:155-158; al-Ṭabrisī 1993, 4:858). But both of these meanings are derived from the verse. The ambiguity in this verse leads to the above-mentioned polysemy and makes it difficult to apply it alongside legal theories.

3.1.2. *Ambiguity in the Meaning of “Heaven” in the Qur’an*

Another instance of ambiguity leading to deep amphibology and polysemy includes the use of the word “heaven” in the Qur’an (Rohani Mashhadi & Maaref 2016, 151-180). Verses related to this term have generally been used by researchers interested in cosmology. But cosmological readings will not be fruitful unless an explicit meaning can be provided for it. In some applications, the word has a close meaning to cloud, “*And We have sent the fertilizing winds and sent down water from the sky and given you drink from it. And you are not its retainers*”¹ (Q.15:22). Sometimes it means a space that surrounds the earth’s surface and is always visible to the naked eye, “*Have you not considered how Allah presents an example, [making] a good word like a good tree, whose root is firmly fixed and its branches [high] in the sky?*” (Q.14:24). Some applications also seem to refer to spheres and celestial classes: “*Then He directed Himself to the heaven while it was smoke and said to it and to the earth, “Come [into being], willingly or by compulsion.” They said, “We have come willingly.” and He completed them as seven heavens within two days and inspired in each heaven its command. And We adorned the nearest heaven with lamps and as protection*” (Q.41:11-12). A few uses also suggest the meaning of rain “*And O my people, ask forgiveness of your Lord and then repent to Him. He will send [rain from] the sky upon you in showers and increase you in strength [added] to your strength. And do not turn away, [being] criminals*” (Q.11:52). The ambiguity, amphibology and polysemy in this term cause it to be fundamentally different from the applications of the word “sky” in cosmology. This linguistic distinction also makes its application to cosmological interdisciplinary studies complex.

3.1.3. *Advancing (Taḡdīm) and Retarding (Ta’kḥīr), Brevity (Ījāz) and Redundancy (Iṭnāb)*

Other literary figures that add to the ambiguity and amphibology of the text and its further interpretability are “advancing and retarding” and

1. The English translation is in Sahih International. Unless otherwise stated, the translation of the verses is from the same source.

“brevity and redundancy.” Regarding the former, al-Suyūṭī provides a list of Qur'anic propositions and verses to its audience that displacement of the components of the phrases and the disruption of the main order of the proposition has caused ambiguity and problems in the meaning of the phrase (al-Suyūṭī 2000, 1:622-624). For example, in verses (Q.18:1-2) we are confronted with two contradictory adjectives for a subject: “*Who has sent down upon His Servant the Book and has not made therein any deviance and straight.*” If the order of the verse is to be the same, “deviance” and “straight” are considered as “object” for “has not made therein,” we are confronted with a contradictory and ambiguous meaning. But in the real order, “straight” is an adverb of manner for the “book” and has slipped out of its original place. In the scientific language, such an advancing and retarding are not allowed, but literary texts are full of such devices. In the figure of brevity and redundancy, we are also faced with cases in which the omission or addition of words or phrases causes ambiguity, conciseness, or even amphibology and polysemy of the proposition. One of the notable issues in the discussion is the brevity of the omissions that occurred in the process of narrating the stories and events in the Qur'an. For example, when God narrates the quality of the encounter between “the people of hell and the that of heaven,” He uses a conditional sentence whose conditional answer is omitted: “*But those who feared their Lord will be driven to Paradise in groups until, when they reach it while its gates have been opened and its keepers say, ‘Peace be upon you; you have become pure; so enter it to abide eternally therein,’ [they will enter]*” (Q.39:73). The answer to the condition is omitted here and it is not clear exactly what happens when the gates of heaven are opened. This omission is an example of the ambiguity and amphibology in literary texts. Ellipsis here allows the audiences, themselves, to place the answer to the condition and complete the image drawn by the Qur'an. Each audience draws the highest rewards for the dwellers of the paradise according to their cultural presuppositions and interests. Such instance of ellipsis and ambiguity in the phrase has caused this narrative to follow a cross-cultural pattern. In the plot of the narration of the king's butler encounter with Joseph, we are also confronted with appealing instances of ellipsis. We see the whole narrative plot in one statement: “*So send me forth Joseph, O man of truth*” (Q.12:45-46). The statement uttered by the butler is addressed to the king whose permission is sought to go to Joseph to have his dream interpreted. But Joseph addresses the king's butler when the king grants his request and sends him to prison to receive the interpretation of the dream. It is clear that a few sentences have been omitted from these two propositions,

and without considering these omissions we will encounter a fundamental ambiguity in understanding the narration. The scientific language, on the contrary, must be clear and expressive. Any omission that disrupts the meaning is unwarranted, so is the brevity that annoys the audience. But we are allowed in literary and rhetorical language to consider the audience have an effective role in completing the meaning. Such a role is more prominent in analogy, metonymy and metaphors. In the next section, we will discuss the application of these features in the language of the Qur'an as well as the language of science.

3.2. *Application of Analogy, Metonymy and Metaphors*

The second characteristic of the language of the Qur'an, which distinguishes it from that of science, is the extensive use of literary figures such as analogy, metonymy and metaphor. Analogy is one of the most repetitive literary-rhetorical figures in the Qur'an. Qur'anic researchers also use other titles such as "parables" (*amthāl*) to express analogy. The purpose of using analogy in speech is to bring an abstract concept closer to the mind. In other words, in this way, we identify what we know less (vehicle) by relating it to what we know more (tenor). We also term the relationship between likened and compared the quasi mode. The use of analogy does not necessarily mean facilitating understanding. There are cases in the Qur'an that have encountered us to complex and difficult meanings. For example, God uses the analogy of light to define what Allah is.¹ The compound nature of this analogy has made it difficult for commentators to understand its quasi-mode and purpose. Such compound similes, which are difficult to understand, abound in the Holy Qur'an (e.g., 24:39; 14:18; 10:24).

In metonymy and metaphors, complexity and ambiguity become deeper and more serious. Metonymy and metaphor are types of similes that are only one of the elements of the simile and the rest is omitted. In these two types, either tenor (*mushabbah*) or vehicle (*mushabbahun bih*) is mentioned. The degree of ellipsis in metonymy and metaphor is almost indiscernible. It is not easy to distinguish between the real or metaphorical nature of some propositions.

1. Allah is the Light of the heavens and the earth. The example of His light is like a niche within which is a lamp, the lamp is within glass, the glass as if it were a pearly [white] star lit from [the oil of] a blessed olive tree, neither of the east nor of the west, whose oil would almost glow even if untouched by fire. Light upon light. Allah guides to His light whom He wills. And Allah presents examples for the people, and Allah is Knowing of all things (Q.24:35).

Qur'anic examples such as *و الصبح اذا تنفس* “*And by the dawn when it breathes*” (Q.81:18); *و تركنا بعضهم يومئذ يموج في بعض* “*And We will leave them that day surging over each other*” (Q.18:99); *فجرتنا الارض عيوننا* “*And caused the earth to burst with springs, and the waters met for a matter already predestined*” (Q.54:12) have such characteristics and their metaphorical nature are indiscernible at the first glance.

One of the most important functions that similes and metaphors have in the language of the Qur'an and literary texts is the powerful imagination with which it is created in the text. When the God stated, “And We will leave them that day surging over each other,” this analogy provides an image of humans riding and moving like a sea wave over a large population. Such fascinating imagery has been created using effective metaphorical capabilities in the text, adding multimedia dimensions to the text.

The point that draws to attention the use of metaphor in relation to the distinction between the language of the Qur'an and science is that the greater the degree of omissions, ambiguity and complexity in the simile and metaphor, the more eloquent value emerges. That is why the hidden metaphor (*isti'arah al-makniyyah*) has more rhetorical value than the obvious metaphor (*isti'arah al-tasrihiyyah*) (al-Suyūṭī 2000, 2:55). In fact, the more the audience is forced to try to understand the semantic relationship between the real and metaphorical meaning, the more authoritative and rhetorical it will be, since it targets a more educated audience. Conversely, the simpler the simile, the metonymy and the metaphor, the more vulgar and popular it will be. Therefore, the language of a literary text needs to have the feature of complexity. But in scientific language, complexity has no place.

The distinction between metaphors in the language of literary texts, in particular the Qur'an and metaphors in the language of science is in the degree of their complexity. Complexity is an important component of simile and metaphor in the language of the Qur'an, but metaphors used in scientific texts not only do not complicate matters, but also help to clarify and remove barriers to understanding complex concepts. For example, physicists use the metaphor of the solar system to understand the relationship of atomic components. No one has seen the atom and its components, but the model used to draw is that of the solar system – the sun is at the center and the rest of the planets are orbiting it. In the atomic model, the atom also has a central nucleus, and electrons revolve around it. All the metaphors used in science have the feature of clarity and clarification and also cause their own perspicuity. However, metaphors in the language of the Qur'an, as well as in the language of literary texts, the more complex and ambiguous, the more valuable they become.

3.3. *Holism and Polysemy*

Another fundamental difference between the language of the Qur'an and the language of science lies in their holistic and partial approaches to phenomena. Holistic approach to the phenomena has led to the emergence of polysemy in the language of the Qur'an. But the emphasis of the language of science on the partial atomic approach has eliminated the possibility of polysemy. Contrary to the language of the Qur'an, and more generally, literary texts, general and holistic propositions (with ambiguity) in the language of science are not recommended. Such statements are considered incorrect and unwarranted in the language of science.

The most important general concepts used in the Qur'an are the following: invitation to monotheism and denial of polytheism; invitation to establish social justice; acceptance of the invitation of the prophets and avoidance of denying their invitation; paying attention to the origin and resurrection; relating the stories of earlier prophets and nations; paying attention to the common mottos and themes of all religions; expressing the individual and social rules of Muslims. What shows the universality of the Qur'an's approaches to categories, is the approach of this divine book to the rules of jurisprudence and the branches of the rules of religion. It is clear that rulings such as prayer, fasting, Hajj and alms tax must be expressed in detail and in the form of expressing the pillars and conditions of authenticity and invalidity. None of these pillars and conditions for the subordinate religious rules can be seen in the Qur'an. Prayer, which is the most important religious duty for every Muslim, is stated in the Qur'an in a general way and without giving any details. The narrations of the infallible are quite decisive in explaining the details of religious rulings. Other subdivisions of the rulings have the same feature of universality.

We know that the expression of the rules and news related to religion and the guidance of human beings are the first priority in the text of the Qur'an. When we encounter general language in expressing sub-rules and news related to human guidance, we also encounter such an approach in expressing scientific content in the first place. We should not expect the Qur'anic propositions, which are in some way related to the concepts and propositions of the experimental sciences or the humanities, to be expressed with the same characteristics as those presented in the language of science. These propositions in the language of science have the characteristics of clarity, partiality and distinction.

3.3.1. *Distinction between the Law of Gravity in Physics and the Related Verse in the Qur'an*

Newton's law of gravitation in physics is defined as follows: "The gravitational force between two particles is directly proportional to the product of the masses of the two particles and inversely proportional to their distance from each other" (Newton 1729, 392). It is because of this force that the object that is at a distance from the ground falls to the ground and the object that is on the ground is pulled towards the ground. Clearly, this definition is quite distinct, clear and partial to gravity. But when we refer to the Qur'anic propositions that the claimants consider to be an equivalent to Newtonian attraction, we are not at all faced with such clarity, distinction and detail. Note the verse (Q.13:2): "It is Allah who erected the heavens without pillars that you [can] see..." In this verse, we are confronted with the similitude of the heavens and their creation into a structure and the way it is raised. Just as a structure needs columns, so do the heavens need columns, but those that cannot be seen. When the quasi-mode is omitted from the simile, it will be possible for people with different attitudes to consider the quasi-mode according to their assumptions. To consider Newtonian gravity as the intended meaning of this Qur'anic phrase is only one of the possible assumptions and of course many other cases are also possible. Therefore, the Qur'anic proposition, unlike the scientific proposition, has the characteristics of ambiguity, universality and polysemy.

3.3.2 *Ambiguity in Political Action or Religious Action*

One of the socio-political issues that these days is of great interest to religious intellectuals and reformers is the question of the will of nations to change their social destiny (Quṭb 1991, 4:2049-5020; Tabataba'i 1996, 11:309; Makarem Shirazi 1995, 1:145-148). Verse (Q.13:11) is generally used to prove this claim:

"For each one has been appointed successive [angels] before and behind him who protects him by the decree of Allah. Indeed, Allah will not change the condition of a people until they change what is in themselves. And when Allah intends for a people ill, there is no repelling it. And there is not for them besides Him any patron." However, before the modern era, a completely different meaning of this verse was understood (al-Ṭūsī 2002, 6:228; al-Ṭabrisī 1993, 6:430). Two different exegeses will be mentioned below in this regard. The first commentary refers to a reading that has been considered by the commentators of the Qur'an almost throughout

history. However, But the latter has been brought by religious reformers such as Sayyid Quṭb in the realm of Qur'anic exegesis:

1. God does not send punishment on a people unless because of the sins they commit.
2. God does not reform the condition of the people unless they themselves do something to reform them.

As it is clear, the existing ambiguity has caused the verse to tolerate different and polysemous readings. It should be noted that the second meaning, which is an interdisciplinary meaning and has arisen from the connection of the Qur'anic studies with socio-political sciences, would be incomplete and ineffective if it were to be used without considering other and probable meanings of the verse. Therefore, it should be said that the ambiguity and universality of the Qur'anic propositions create the ground for the emergence of polysemy. Therefore, holistic approach to the language of the Qur'an should be considered an important feature that fundamentally differs from the language of the Qur'an. This fundamental distinction in the language of the Qur'an and science complicates the communication and dialogue between them.

3.4. *The Language of Sermons and Dialogues*

Another important feature of the language of the Qur'an that is not seen in the language of science is the rhetorical approach and dialogue. A sermon is a one-way speech that is given to motivate the audience to act upon or avoid something. But in contrast, dialogue is a bilateral conversation. Speech and dialogue play an essential role in literary texts, especially the language of the Qur'an where it is attested to a large extent. In contrast, sermons and dialogues are defects in a text written in the scientific language.

3.4.1 *Sermons and a Distinct Approach to the Language of the Qur'an and That of Science*

Sermon is one of the five categories in logic.¹ Rhetorical syllogism (*qiyās al-khiṭābī*) is made of acceptable statements (*maqbulāt*), presumptions (*maznūnāt*) and those based on principles (*mashhūrāt*) (al-Ḥillī 1991, 403). The purpose of the sermon is to convince the audience of what is expected

1. The devices of the five crafts or arts in logic are proof, dialectic, sermon, poetry and fallacy.

to be approved by them (*idem*). Therefore, in speech, all persuasive methods that affect the audience in some way can be used. The sermons in the Qur'an are both general and specific. General sermons are often accompanied by words such as "O people," "O you who believe," and "O you who disbelieve." Special Sermons are used with titles such as "O Prophet," "O wives of the Prophet," and "O Messenger." In Qur'anic sermons, various Rhetorical techniques such as: story, oath, etiquette, ellipsis, persuasion, threat, allegory, melodic sentences, etc. are used to have a greater impact on the audience and also to create diversity in speech and prevent the listener's fatigue. The main purpose of the Qur'an is to guide its audiences and in order to achieve this goal, the sermon is very efficient and worthy of attention. But what is more important in the language of science is the presentation of honest and justified propositions. Truthfulness (*ṣidq*) and justification (*tawjīh*) are the two main features of propositions in the language of science that can only be obtained through reasoning and inference. These characteristics are independent of whether the general public is convinced of these arguments. The main target audience for the language of science is the elite in the same scientific field. To explain the audience there is no need to sermon. Consider the following examples of how controversial arguments or popular allegories have been used to persuade the audience.

3.4.2 *House of spiders and Linguistic Distinction between the Qur'an and Science*

One might think that verse (Q.29:41) states the opposite of scientific propositions. However, the noble verse is organized according to its acceptable statements (*maqbulāt*) and those based on principles (*mashhūrāt*), and it still has considerable persuasive power:

"The example of those who take allies other than Allah is like that of the spider who takes a home. And indeed, the weakest of homes is the home of the spider, if they only knew."

In this noble verse, the house of the spider is mentioned as the weakest house. We know that in modern science, spider webs are among the most resistant tissues available and the spider's web is highly resistant. However, there is no conflict between these scientific propositions and the Qur'anic proposition, since here the language of the Qur'an is organized from the language of rhetoric and using acceptable statements and those based on principles. However, the language of science in this field follows a precise and detailed language.

3.4.3 *An approach to Gender and Linguistic Distinction between the Qur'an and Gender Studies*

Gender, is another situation in which the Holy Qur'an has used acceptable statements and those based on principles to increase its persuasive influence. In the Qur'an (Q.53:21-22), in response to the polytheists' God considers an act of choosing sons for themselves and attributing females to Him an unfair division. According to the assumption that a male is preferable to a female, this division is unfair. This presupposition, with which the Qur'anic proposition has been sympathized with, has been among the acceptable statements of the Prophet's time. In the category of "witness" (Q.2:282) we also see empathy with the acceptances of the Prophet's time. In this verse, God considers the witness of two women to be equivalent to the witness of a man: "And bring to witness two witnesses from among your men. And if there are not two men [available], then a man and two women from those whom you accept as witnesses - so that if one of the women errs, then the other can remind her. And let not the witnesses refuse when they are called upon..." Such a ruling is interpreted to mean that if one of the women errs (through forgetfulness), the other will be reminded of the forgotten matter. It seems that such a reasoning was made in order to convince the audience and using eminent, so it proves the rhetorical dimensions of the Qur'an. However, in modern scientific disciplines, it is not acceptable to use such a language to persuade the audience.

3.4.4 *Equivocation (Tawriyah) in the Qur'an is an Example of the Use of a Sermonic Approach*

The use of the equivocation in the Qur'an perfectly illustrates its rhetorical approach. There are two significant examples in this regard in the encounter of Abraham with the polytheists and Joseph with his brothers. When Abraham became responsible for the protest of the polytheists against the destruction of their idol, he rejected this accusation and considered it as the act of the great idol. "They said, 'Have you done this to our gods, O Abraham?' He said, 'Rather, this - the largest of them - did it, so ask them, if they should [be able to] speak'" (Q.21:62-63). However, Abraham himself was responsible for the shattering the idols and thus he wanted to make them aware of the powerlessness of the idols. In another instance, Joseph places a cup in the baggage of the camels of his brothers and then accuses them of stealing: "So when he had furnished them with their supplies, he put the [gold measuring] bowl into the bag of his brother. Then an announcer

called out, 'O caravan, indeed you are thieves'”(Q.12:70). Clearly, such accusations by Joseph are only to make his brothers realize the evil of their theft in their childhood. Such a thing follows the pattern of the sermon and contains the rules of the spoken language. The use of such a language in scientific propositions will not be acceptable at all. Scientific language cannot use the language of irony and extension to express its purpose. Scientific language must be clear and distinct.

3.4.5 Dialogue and Distinctive Approach to the Language of the Qur'an

Dialogue is in complete contrast to sermon. The former is based on bilateral conversation. Although the language of science is that of argument and inference, but dialogue is generally not used in the written language of science.¹ However, the Qur'an, so that to have a greater impact on the audiences, applies this style of expression. Accordingly, just as the language of writing can be well observed in the Qur'an, the spoken language can be found in it.

Conversation and dialogue in the Qur'an include a wide range of cases. Including God's dialogue with prophets and ordinary human beings, as well as human dialogue with each other or even human dialogue with animals. The beginning of the revelation of the Qur'an with God's conversation with His Prophet in the Cave of Ḥirā' shows the great importance of dialogue in the language of the Qur'an. Also, the beginning of some chapters of the Qur'an with the keyword “say,” shows that the nature of these chapters is conversational. But apart from the chapters that begin with “say,” God has spoken to His prophets on several occasions. God's words to Moses on the mount of Torah and to Zechariah about having children, are good examples of this. He has also spoken to other human beings on several occasions, apart from the prophets. God's Conversation with the people of the Book (Q.2:136), the polytheists (Q.46:4; 6:148), Anti-resurrectionists (Q.36:78-82; 19:66-67), etc. should be considered as examples of God's conversation with the opposition

In the Qur'anic examples of dialogue, the story is generally told through the tools of conversation. Conversation is the most prominent element and component of fictional narratives in the Qur'an. It is clear that stories and tales have no special place in the language of science. Therefore, it can be considered as one of the basic distinctions between the language of the Qur'an and the language of science, which shows the element of dialogue and conversation in this holy book.

1. To be informed about the written and spoken language, see: Nekounam 2000, 21-38.

3.5 Using Verbal Complexity

One of the important distinctions between the language of literary texts and the language of science is in the application of verbal complexity. Verbal complexity occurs when advancing and retarding make the propositions difficult to understand (Shams al-'Ulamā' 1910, 7). Although some rhetorical scholars have considered the existence of verbal complexity as an error in eloquence (al-Jurjānī 1987, 82-86), but, generally in Qur'anic sciences, it is considered as one of the rhetorical devices in the Qur'an (e.g., al-Suyūṭī 2000, 623-624). For example, in verse (Q.20:129): "And if not for a word that preceded from your Lord, punishment would have been an obligation [due immediately], and [if not for] a specified term [decreed]." From a syntactic point of view, it is not possible to add the "a specified term" to "obligation" and if so, the meaning of the phrase will be completely incorrect and incomprehensible. In fact, "a specified term" must be added to the "word." In fact, the "formal deadline" must be reverted to the "word" but in the current structure it has been omitted from its original place and this retarding can disrupt the meaning of the phrase. In verses 18:1-2, the retarding of words has caused ambiguity and challenge in the meaning of the phrase: "Who has sent down upon His Servant the Book and has not made therein any deviance." In this verse, if "guardianship" is supposed to be a passive object for "made therein" like "deviance," we will face a contradiction. It is clear that this contradiction is due to the fact that the "guardianship" has been postponed from its original position. In fact, "guardianship" is now for "the book" and the meaning of the passage with this new structure has no ambiguity or problem.

The Qur'an uses such advancing and retarding in its style of storytelling. One of the most prominent examples in the Qur'an is the story of cow in *Surah al-Baqarah* (2). God starts the story with the sentence "*Allah commands you to slaughter a cow*" (Q.2:67). But we know that God's command to the Israelites to slaughter *Baqara* is in the middle of the story. The beginning of this story is actually this sentence: "*And [recall] when you slew a man and disputed over it*" (Q.2:72). Here also, we are confronted with a postponement in the narration of the story, which, if one is not aware of the course of this story, will be a major challenge for understanding it in the Qur'an.

The existence of challenging instances of precedence and postponement is one of the characteristics of literary texts. Creating a challenge and motivating the audience to overcome these challenges is one of the characteristics that makes a literary text have the maximum participation of the audience in interaction with itself. Also, overcoming these challenges

and obstacles is a kind of artistic pleasure in itself. However, the existence of such challenges in a text in scientific language is never recommended. A scientific statement must be explained to the audience in the simplest language. The existence of any precedence and delay that creates semantic confusions in the word is considered a defect for that scientific text.

4. Conclusion

Disciplines are very distinctive in terms of language. In particular, the literary and artistic disciplines are very different from other types of knowledge. Unlike other types of science, artistic taste and sense play an important role in justifying theories of literary studies and art. The language of the Qur'an has generally used the same common linguistic features in the language of literary, artistic and mystical texts. The language of the Qur'an bears the closest resemblance to the humanities, especially literature and mysticism. Experimental humanities in the next stage and natural sciences are the most distant from Qur'anic studies. The main features of the language of the Qur'an that make it fundamentally different from other sciences are the following: 1. The application of ambiguity and linguistic amphibology; 2. Application of simile, metaphor and metonymy; 3. Holism and polysemy; 4. The use of sermonic language and dialogue; 5. The use of verbal complication. In these five features, one can clearly see the difference between the language of the Qur'an and the language of science. These five features show the obvious differences between the language of the Qur'an and that of science. It is necessary to pay attention to these differences in the interdisciplinary integration of the Qur'an and other sciences.

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Investigating the Story of Noah's Flood According to Qur'anic Verses and Archaeological Researches

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ABSTRACT:

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One meaning of the word *āyah* in Qur'anic context refers to a sign, which is a divine miracle as attested in verse (Q.54:15): *Certainly We have left it as a sign; so, is there anyone who will be admonished?* The verse refers to the story of Noah's Ark and his nation's penalty, which is presented as a sign for posterity. There are various perspectives among interpreters about the reference of pronoun *it* in the verse, depending on whose antecedent, the verse can be considered as one of the verses expressing divine miracles. The present study tries to investigate the aforementioned verse and its miraculous aspects through an interdisciplinary method between the Qur'an and archaeology. Based on conducted studies, the word *āyah* implies to Noah's Ark or the Flood phenomenon and rescuing a few of his nation who are the only survivors of humankind. Given archaeological studies, there is no certain evidence yet to confirm the remains of the Noah's Ark and the verse cannot thus be considered as a scientific miracle. As a result, the miraculous aspect of the verse indicates *giving notice of the unseen* which is verified in verse (Q.11:49).

KEYWORDS: Noah, flood, Noah's Ark, archaeological researches.

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1. Introduction

One of the methods to prove the legitimacy of the Qur'an's scientific miracle is to study it based on archaeological documents. Investigating the miracle of the verse (Q. 54:15),¹ *Certainly We have left it as a sign; so, is there anyone who will be admonished?*" which refers to survival of Noah's ark, according to some interpretive opinions, needs an interdisciplinary study based on *interpretive* opinions and archaeological research. The most important questions in this study are as follows:

- What is the criterion for a thing to be *āyah* (sign) at any time, based on the fact that Qur'an's contacts are all times and generations: Seeing *āyah* or hearing about it?
- According to the Qur'an, is wreckage of Noah's ark or its story a miracle and sign for thinkers?
- According to interpretive opinions and archaeological documents, what is the miraculous aspect of the verse and to what extent can the miraculous aspect be considered scientific?

Thus, in the Qur'anic section, we have investigated lexical and interpretive verses to answer the questions. Then, we have inspected wreckage of Noah's ark through archaeological documents from the beginning until now in order to define the miraculous aspect of verse 15 of surah al-Qamar.

2. Lexical Study

The words *taraka* (left) and *āyah* are the most important and key terms which should be investigated to understand the miraculous aspect of the verse.

2.1. The Word *Taraka*

Taraka means "to give up" (al-Farāhīdī, 1988, 5:336), both intentional or obligatory (al-Rāghib, 1991, 166), whether giving up a material matter or a spiritual one (al-Muṣṭafawī, 1981, 1:386). Thus, in this verse, whatever God left as a sign among people can be a tangible matter like Noah's ark or an intangible one such as Noah's flood.

1. وَلَقَدْ تَرَكْنَاهَا آيَةً فَهَلْ مِنْ مُدَكِّرٍ (القمر/15)

2.2. *The Word Āyah*

Āyah, deriving from the root 'y-y, denotes sign and admonition (Ibn Manzūr, 1993, 14:51-63). Al-Muṣṭafawī (1981, 1:186) believes that *āyah* is derived from the root 'w-y "to be noteworthy." This word is also used in the sense of miracle, as frequently attested the verses of the Qur'an (Qurashī, 1992, 1:145-146). All of these meanings for *āyah* are to be found in the Qur'an; as in verse (Q.25:37) it means admonition and great sign for beholders and listeners (al-Ālusī, 1994, 10:20). Thus, *āyah* means a sign implying a divine affair. Such an implication can be obtained through seeing or hearing. Therefore, in verse (Q.54:15), the criterion of being a sign and miracle concludes both seeing and hearing the miracle.

3. *Interpretive Study*

In order to define the referent of *āyah* in verse (Q.54:15), we will probe the most authoritative Shiite and Sunni interpretations.

3.1. *The Antecedent of the Pronoun -Hā in (Q.54:15)*

There is disagreement about the reference of the pronoun *-hā* (it) in the verbal form *taraknāhā* (we left it), which indicates what God has left. Some, according to context, have referred to Noah's Ark as its antecedent, provided that the ark or its wreckage at least had remained until the descending time of this verse (al-Ṭabrisī 1993, 4:209). Tabataba'i, after declaring this attitude, points to the wreckage of Noah's Ark, which was found at the Ararat Mountains and confirms this perspective (Tabataba'i, 1996, 19:69). In addition, Qatādah affirms in interpreting the verse that the Noah's Ark had existed and Muslims had seen it (al-Suyūṭī, 1983, 6:135). On the contrary, some interpreters believe that the Flood story and the adventure of Noah and his opponents are the antecedent. Thus, the point is that God has kept the story of this event. It is also possible that the antecedent of the pronoun *-hā* is both Noah's Flood and rescue of the believers as well as the remains of the Ark (al-Ṭabrisī, 1993, 9:287; al-Ṭūsī, 2010, 9:448-449; al-Zamakhsharī, 1986, 4:435; al-Rāzī, 1999, 29:298-299). Ibn 'Āshūr, whilst admitting both aspects, believes that Noah's Ark is considered as the reference of the pronoun *-hā* since its remains were existed at the beginning of Islam and he also regards, due to widely transmitted traditions, the second aspect acceptable (1999, 17:179-180). Therefore, it seems that Noah's Ark had remained for a long time and had been a reminder for Noah's Flood. For further discussion, some related verses are examined.

3.2. *The Antecedent of the Pronoun -hā in Verse 29:15*

In Verse 29:15, God says, *Then We delivered him and the occupants of the Ark, and made it a sign for all the nations.*¹ This verse as the under-discussion verse, talks about Noah's Ark and his story as a sign and miracle for people. There is disagreement about the reference of the pronoun *-hā* in this verse too. Some ascribe it to Noah's Ark (al-Ṭabrisī, 1993, 8:433). Some others, while admitting this view, consider Noah's story, based on its fame and widespread transmission, as the pronoun antecedent (al-Zamakhsharī, 1986, 3:446; al-Rāzī, 1999, 25:37; Tabataba'i, 1996, 16:115).

3.3. *The Purpose of Āyah in 25:37*

The majority of interpreters have regarded the purpose of *āyah* in verse (Q.25:37)² to be the story of Noah and the drowning of the oppressors (al-Zamakhsharī, 1986, 3:380; al-Rāzī, 1999, 24:459), as well as the widespread transmission of this story (Ibn 'Āshūr, 19:51) but they have not referred to the remains of Noah's Ark.

As mentioned above, from the interpreters' viewpoints, Noah's Ark and its remains or the event of Noah's Flood itself is the antecedent of the *āyah*. However, most of the interpreters allow considering both material (Ark) and spiritual (the story of Noah's Flood) aspects.

4. *Quranic Evidence of the Universality of Noah's Flood*

Discussing locality or universality of Noah's Flood is a significant topic when debating about miraculous aspect of the verse. It is an important issue since the universality of the Flood confirms the miraculous aspect of Qur'an in citing this story while its locality decreases the miraculous of the verse.

The Bible affirms that Noah's Flood is universal and all humankind except Noah and his family perished so that human generations can keep on of Noah's loin (Hawkes, 1998, 896). Qur'anic verses refer to the universality of Noah's invitation and verify the Flood, as in verses such as verses (Q.54:12), (Q.11:40), (Q.23:17) exist evident signs about the universality of the Flood as follows.

1. فَأَنْجَيْنَاهُ وَأَصْحَابَ السَّفِينَةِ وَجَعَلْنَاهَا آيَةً لِلْعَالَمِينَ (العنكبوت/15)

2. وَقَوْمَ نُوحٍ لَمَّا كَذَّبُوا الرُّسُلَ أَغْرَقْنَاهُمْ وَجَعَلْنَاهُمْ لِلنَّاسِ آيَةً وَأَعْتَدْنَا لِلظَّالِمِينَ عَذَابًا أَلِيمًا (الفرقان/37)

And the people of Noah, when they rejected the messengers, We drowned them, and We made them as a Sign for mankind; and We have prepared for (all) wrong-doers a grievous Penalty.

4.1. Verses (Q.54:12) and 11:44

These two verses talk about gushing of the water¹ before The Flood and subsiding (swallowing up) of it after that². The context of the verses and the type of the prescript indicate that the earth means the entire surface of it, not just a limited part of it, as al-Zamakhsharī used the clause, “We made the whole earth as if it was like boiling springs,” in the interpretation of the first verse (1986, 4:434). Tabataba'i, in his interpretation of verse (Q.11:44) declares that God's Command to the earth and the sky is a creating command so that swallowing up the water on the earth at once is the referent of that Command (1996, 10:230).

4.2. Verses (Q.11:40) and (Q.23:27)

In two verses, the creatures that Noah (pbuh) boarded to survive are spoken of using the phrase, “a pair of every kind [of animal]”³, which is the second evidence that shows the universality of Noah's flood.

Interpreters have announced about verse 40 of Surah Hūd⁴ that this phrase refers to a male and female pair of each animal (al-Ṭabrisī, 1993, 5:249; al-Rāzī, 1999, 17:347; Tabataba'i, 1996, 10:226). In contrary with Ḥafṣ's *qirā'ah* (reading), if the word *kullin* (all) is written as *idāfah*, without *tanwīn*, then the phrase means two of each male and female class (al-Bayḍāwī, 1997, 3:135). However, according to Ḥafṣ's reading and numerous opinions of the interpreters, the first viewpoint seems correct.

1. وَ فَجَّرْنَا الْأَرْضَ عُيُونًا فَالْتَقَى الْمَاءُ عَلَى أَمْرٍ قَدْ قُدِرَ (القمر/12)

And We made the earth burst forth with springs, and the waters met for a preordained purpose.

2. وَ قِيلَ يَا أَرْضُ ابْلَعِي مَاءَكَ وَ يَا سَمَاءُ أَقْلَعِي وَ غِيضَ الْمَاءِ وَ قُضِيَ الْأَمْرُ وَ اسْتَوَتْ عَلَى الْجُودِيِّ وَ قِيلَ بُعْدًا لِلْقَوْمِ الظَّالِمِينَ (هود/44)

Then it was said, “O earth, swallow your water! O sky, leave off!” The waters receded; the edict was carried out, and it settled on [Mount] Judi. Then it was said, “Away with the wrongdoing lot!”

3. مِنْ كُلِّ زَوْجَيْنِ اثْنَيْنِ

4. حَتَّى إِذَا جَاءَ أَمْرُنَا وَ فَارَ التَّنُورُ قُلْنَا اجْمَلْ فِيهَا مِنْ كُلِّ زَوْجَيْنِ اثْنَيْنِ ... (هود/40)

When Our edict came and the oven gushed [a stream of water], We said, “Carry in it a pair of every kind [of animal].”

Interpreters, based on the famous reading of verse 27 of al-Mu' minūn¹, considered a male and female pair of each animal as the referent of the phrase (al-Ṭabrisī, 1993, 7:127; al-Zamakhsharī, 1986, 3:184; al-Rāzī, 1999, 23:273; Tabataba'i, 1996, 15:29). Therefore, Noah had shipped, with respect to God's command, a pair of males and females of any species to survive them so that it implies that the Flood was universal.

5. *The Place of Descent of Noah's Ark According to Interpretations*

There are different opinions in Islamic references about where the Noah's Ark had settled. Al-Ṭabrisī quotes from Abū Muslim that *Jūdī* is the name of every tough mountain and ground (1993, 5:350). Al-Rāzī states the place on where the Ark rested i.e., *Jūdī* Mountain is in India (1999, 29:298). Others introduced a place near Kufah (al-'Ayyāshī, 2001, 2:141; al-Qommī, 1983, 6:175), south of Armenia (Ibn 'Āshūr, 1999, 20:147) al-Sham, Amol (al-Bayḍāwī, 1997, 3:136) and the Ararat Mountains (Tabataba'i, 1996, 19:69) as the place where Noah's Ark settled. Most of the interpreters mentioned that the location of Mount *Jūdī* is around Mosul (al-Zamakhsharī, 1986, 2:398; al-Ṭabrisī, 1993, 5:350).

5.1. *The Historical Background of Noah's Story*

In 1872, George Smith among the clay tablets of the library of Ashurbanipal ran into the story of a flood, which had an entire similarity with Noah's story in the Torah. This story was known as Epic of Gilgamesh (Heidel, 1949, 194). After that, archaeologists discovered older version of this story, which date backs to 1700 BC while excavating the city of Nippur. The Babylonian text was later discovered.

The protagonist of the story is named Ziusudra in the Sumerian text, Atrahasis in the Babylonian text and Utnapishtim in the text discovered in the Assyrian library (Kramer, 1956, 42-44). We encounter, in part of this tablet, with gods' decision to send a flood and destroy humankind.

1. فَأَوْحَيْنَا إِلَيْهِ أَنْ اصْنَعْ الْفُلْكَ بِأَعْيُنِنَا وَوَحَيْنَا فَإِذَا جَاءَ أَمْرُنَا وَفَارَ التَّنُورُ فَاسْلُكْ فِيهَا مِنْ كُلِّ زَوْجَيْنِ
أَنْثَيْنِ... (المومنون/27)

So We revealed to him: "Build the ark before Our eyes and by Our revelation. When Our edict comes and the oven gushes [a stream of water], bring into it a pair of every kind [of animal]."

Ziusudra is equated with Noah whom was described as a religious and deist king and a god informed him about the decision of an assembly of gods to send a flood and destroy human race.

Forty lines of the tablets were broken and possibly associated with shipbuilding and storm rescue. The text becomes meaningful when we see that a severe storm has flowed over the land and ravaged it seven days and nights. Utu, The Sun god, rises and Ziusudra prostrate before him and makes sacrifices for him (Majidzade, 1997, 2:270)

This story in wholeness corresponds to the story of Holy Scripture. However, with differences in the details of the story, its principal discrepancy with the great heavenly religious is to have assembly of gods instead of The One God. The base story of the Flood is so ancient and must have been flowed in 2400 BC, and reached to Babylonians and then to Assyrians through cuneiform and Sumerian- Akkadian language. It has been constantly repeated, newly embellished and apparently exaggerated about the story and slang tendencies have been attached, too (Burkhardt, 2004, 12).

There are more than 600 different legends around the world (Greek, Indian, Scandinavian, Chinese, etc.) about the Great Flood. They possess some commonalities such as a universal flood, a favorite family, rescuing by boat or ship, the flood happening because of people's unjust actions, settling on the top of a mountain, sending a bird out by survivors, donating a sacrifice to thank for their rescuing (Lahaye & Morris, 1977). In Persia, the story of Jamshid corresponds to the Flood story. Furthermore, some researchers have investigated and compared these stories with each other. For example, in 1949 an archaeologist by the name of Heidel compared Gilgamesh and The Scripture with each other. He wanted to know the difference and similarity points in these books, since it was supposed that the Torah and the Gospel have adopted the Flood story from Mesopotamia (Heidel, 1949).

Historians pay attention to the Flood since it is important and attractive. The most ancient historic document, which is related to third century BC, belongs to Berossus, a Babylonian historian. (Lanser & Div, 2008, 15) Indeed, Berossus should be considered as a reference for historians like Josephus and Nicolaus of Damascus who had written about the Flood from first century AD. In addition, there is some information about Noah's Ark in many travelogues. The story of the Flood from the beginning was narrated in many regions of the Middle East from one generation to another because of its greatness so that the residents of each region consider the location of the Ark in their areas, and many interpretations were and are about the place of descendent.

5.2. *The Time of the Flood*

We do not know the exact date of this significant event. There is no access to any authentic narration. Muslim historians have estimated the occurrence date around 3250-3000 BC. For instance, Ḥamzah Iṣfahānī (1988, 11) has assessed 3104 BC, al-Mas'ūdī (2002) 3236 BC, and Abū Rayḥān al-Bīrūnī (1984, 25) 3102 BC.

Archaeologists have given an approximate date for this event in accordance with Mesopotamian tablets. Mallowan, according to the Epic of Gilgamesh and dynasties of Sumerian kings, proposed the date of the Flood about 2900 BC or a previous century, i.e., the Early Dynastic Period (Mallowan, 1971). He believes that evidence of this Flood has been found in layers of the Early Dynastic Period. Burkhardt considers some factors such as the period of Gilgamesh's rule, the fifth king of the ancient dynasty of Uruk to be in 2650 BC, and having studied Sumerian texts and individuals' names corresponding them to historical names, announced this time to be at least 200 years earlier (Burkhardt, 2004, 12). Thus, according to the present resources, this phenomenon had probably happened during 3000-2600 BC.

5.3. *The Place of Descent of Ark*

Researchers have reported different countries like Turkey (the mountain of Ararat, Cudi Dagh and Durupinar), Persia (Delfan Sarkeshti Mountain, Nahavand, Takht-e Suleyman and Dasht-e Kavir), Lebanon, Iraq (the mountain of Pir Omar Gudrun and Judi), Azerbaijan, Saudi Arabia (mount of Judi), Syria and Yemen as the place of descent. Most of these places have no scientific documents; however, legends and religious texts talked about the place of descent. In the Epic of Gilgamesh, it is mentioned as Mount of Nisir (Montgomery, 1972) which is considered to be identical with Mount of Pir Omar Gudrun in north of Sulaymaniyah, Iraq (Mallowan, 1964, 65). Mount Ararat is mentioned in the Old Testament and in Genesis 7-8 (Genesis, 8:5) and Mount of Judi mentioned in the Holy Qur'an (Q.11:44). Berossus and Pliny have referred to the Kardu mountains which some have considered it as Mount of Cudi Dagh in Turkey.

5.3.1. *Turkey*

Turkey has been the focus of explorers, historians, geographers, archaeologists, geologists, clerics from the third century BC onwards. The

significance is justified since the largest area of Urartu territory in the eighth century BC was in this country and the Scripture has mentioned the Ararat Mountain as the place of descent of the Ark. Ararat is considered as identical with Urartu from the third century BC onwards. Moreover, the Holy Qur'an has mentioned Mount of Judi as the place of descent which is also a mountain of the same name in Turkey. Durupinar Mountain is the third option that Turkey is trying to attract tourist to it.

5.3.1.1. *The Ararat*

Volcanic Mount of Ararat (Fig 1) located in east of Turkey consists of two major cones: Greater Ararat (5,137 m) and Little Ararat (3,896 m).

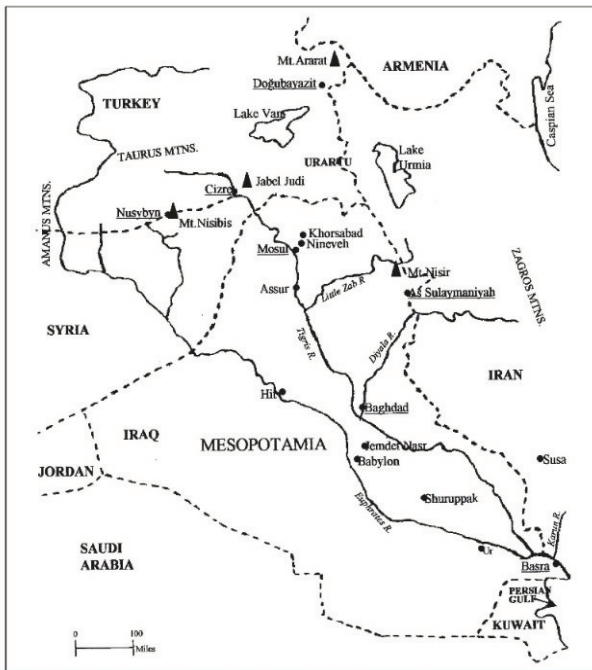


Fig 1. *Location of the Ararat Mountain (Hill, 2002, 173)*

Most of the researchers began to hypothesize due to the names of Ararat Mountains attested in Aramaic, Syriac, Greek, Latin, American and Turkish. Brynner believes that since the tenth century west Christians have misinterpreted Hebraic phrase in the Torah, Ararat Mountains, as mountain (in singular form not plural) and introduced the highest

mountain in Ararat as the place of descent. While Ararat is derived from Urartu, as a Hebraic word, it is predicated to a kingdom in the East Turkey, which included both Ararat and Judi Mountains. This kingdom was recalled in older documents, e.g., Ashurnasirpal's annals (1280-1261 BC). Mount Ararat had not been in Urartu's territory (Plotrovsky, 1969, 43). The works of this areas have rarely been discovered through archaeological excavation around Mount Ararat (Başaran et al, 2008, 76). In the Book of Genesis, the name of the mountain, identical with the place of descent, was written as *rrt* so that it is also interpreted as the name of Urartu. In fact, the exact name of the mountain is not attested in Genesis and merely a geographical area is mentioned (Habermehl, 2008, 486).



Fig 2. Navarra while picking up the wood of Ararat highlands (Bailey, 1977, 139)

Philostorgius, a historian of fifth century AD, referred to Ararat where Noah's Ark had rested and its wreckage existed in his time (Habermehl, 2008, 486). Artsruni, in the tenth century AD, introduced this mount as the place of descent (Young, 1995) and this opinion remained as a persistent tradition in 14th century AD. Mandeville visited Mount Ararat in 1356 and could see pieces of the Ark (Berlitz, 1991, 23). Chardin sketched the assumed Ark based on natives' narrations in the seventeenth century. In 1820, news about seeing the Ark by Parrot, Prince Nouri and Hagopian were published (Lanser & Div, 2008, 1-7). Then, Roskovitsky in 1916, American pilots in 1943, Jefferson in 1952 and Turkish air force in 1959 reported a puddle like

a ship on this mountain. In 1955 and 1969, Navarra experimented some pieces of wood of Ararat and claimed that picked them up from the Ark (Navarra, 1974). Of course, numerous individuals attributed many uncovered pieces of wood with various colors and solidity to the Ark's remains since 1826 onwards. Navarra's samples (Fig 2) indicated an antiquity of 5000 years or even in some samples 4000 to 6000 years through Radiocarbon dating. In the following studies, the wood was dated to seventh and eighth centuries AD and was probably related to monument built by Armenians in memory of Noah (Bailey, 1978).

There had been rarely geological information about Mount Ararat until 1966. Then, Burdick showed that Mount Ararat had existed before the Flood and even before creation time and its lava layer was estimated at most to be 6100 meters deep, which reached the height of 5165 meters because of erosion. According to evidence like sediment and pillow lava, he believed that 4200 meters of the mount were under water when the Flood happened. Therefore, The Ark had settled on the Ararat. This theory was rejected since a small amount of pillow lava, which was newer than the Flood was found in Ararat. Rock salt and sea fossils are not unique to this mount which were also found several kilometers away. Geologists believe that the mountain sediment belongs to post-flood era (Habermehl, 2008).

Fasold and researchers of the Ataturk University focused their attention on studying the area (Fig 3) since 1985. They showed the molecular frequency of a bulky and massive body under the snow and inside an elliptically dusty hill of the mount by scanner device. Evidences for the presence of iron in the form of parallel and intersecting lines were also found (Fig 4), which were apparently used to connect timber and to build animal cages.

Furthermore, they found remarkable iron fittings, which were used in 5400 points of the Ark. They drew some points in order to show internal frame and the hall of a giant ship. In Fasold's belief, the dimensions of the supposed ship agreed with the dimensions in the Book of Genesis. The existence of different rooms and floors confirms the theory of advanced engineering. Detector device showed nine arches which agreed with description in Babylonian texts that referred to nine separate sections. Five thousand nails with round ends were also identified. Radar imagery demonstrated that iron strips or metal beams were tilted at the descending site (Collins, 1996; Berlitz, 1991).



Fig 3. Location of the Ark claimed by Fasold

The researchers confirmed interior walls, a three-layer wooden wall of the Ark, cavities, rooms and two large cylindrical tanks by radar scan experiment. They claimed that a cement-like material accompanied with a pitchy and impregnated to Manganese covered the exterior hall of the Ark (Berlitz, 1991, 234-235). Furthermore, analysis of the compounds of one nail confirmed the presence of alloys of aluminum, titanium and other metals. However, until the twentieth century, no sign of these alloys has been discovered anywhere in the world.



Fig 4. Marked strips of iron lines with regular arrangement of ship frame <http://www.anchorstone.com>

Bayrak Tutan indicated that figures presented by Wyatt and Fasold would not show morphological characteristics and internal structures. However, investigating through Fasold's underground radar an internal symmetry with regular distribution was discovered. According to Tutan's discoveries, the site has natural outcrops and regular geometric features. At Fasold's request, Collins studied the detected iron hook from Dogubayazit to determine whether it was produced in furnace or not. An examination of the hook confirmed that it had been made in the Ararat region rather than Mesopotamia as the place of departure. Therefore, the discovery has no relation to the actual Noah's Ark. Collins, after conducting experiments, declared that renovation of the Ark's hall through radar and electronic devices done in Ararat was not man-made and the present form could have been formed naturally. Lack of fossilized wood and any trace of carbon element, wood and straw fragments reinforced the theory that the boat-shaped structure is normal despite lack of archaeological evidence (Collins, 1996).

In Fasold's studies, eleven flat boulders were discovered each with a circular cavity at the beginning weighed between 4-10 tons in 24 kilometers of Ararat. According to Fasold, they were the ship's anchors (Fasold, 1988, 319-25). The theory of anchoring these boulders was rejected because the same were detected in Arzap, Durupinar, Toklucak, Kazan, Ahora, and Carahunge. The question raises here is whether Noah had hundreds of anchors that he threw into the water during the flood, which have been scattered everywhere and how these multi-ton boulders had been thrown into the water (Snelling, 1992). Further, chemical isotopic and mining experiments conducted by Merling on the Arzap and DonaPinar boulders showed that these boulders were basalt and native to Ararat. As a result, the boulders were created and carved in site not in Mesopotamia where the Ark moved. Thus, there is no evidence to confirm any connection between these cavity boulders and the Ark (Collins, 1996).

Geissler and Keles, as Arc Imaging group, conducted an archaeological study in 2001 around Mount Ararat to find Noah's Ark. They discovered some remains related to Stone Copper Period, which was near the Flood time. In Arzap area, Toklucak ground in the southeast of Carahunge ground and Ahora cemetery in the northeast of Ararat stones (Fig. 5) similar to Fasold's boulder were found (Başaran et al, 2008). Therefore, they are not related to Noah's Ark because the study of Fasold's samples proved to be local.



Fig 5. *Hypothetical ship anchors in Arzap (Başaran et al., 2008, 80)*

Lanser and Div, according to Berossus's writings, eyewitnesses and toponymy consider Ararat as the place of descent (Lanser, 2006; Lanser and Div, 2008) in 2008 and 2010, Noah's Ark Ministries International archaeological team from Turkey and Hong Kong explored Mount Ararat and announced that they found Noah's Ark. The team has not yet published authentic scientific results of their research. Thus, we cannot actually assess the validity or invalidity of their findings.

Despite the efforts made in Great Ararat, many researchers disagree with Ararat's theory. The reasons are as follows:

- It does not refer to Great Ararat Mountain as the place of descent in primary sources, although it refers to Ararat Mountains not the peak of Ararat in Genesis.
- It is a volcanic mountain which had not been under water at all. It was also created after the Flood so it cannot be the place of descent.
- Great Ararat Mountain and Small Ararat Mountain are in flat and do not connect to Ararat Mountain Ranges.
- Witnesses' record is not trustworthy.
- They have found nothing after sixty years of searching.
- Mount Ararat had not been in territory of Urartu (Fig 6) when the Torah was written to attribute the name of Ararat that derived from a kingdom.
- Most of the individuals who visited Ararat and saw some evidence of the Ark, truly, saw Cudi Dagh Mountain and mistaken it for Ararat (Habermehl, 2008, 486; Albright, 1969, 48; Spencer & Lienard, 2005; Crouse & Franz, 2006; Groebli, 1999, 313; Hill, 2002, 177).

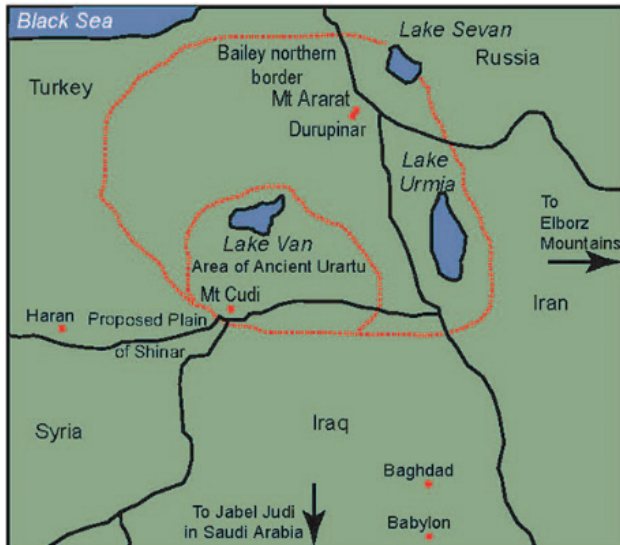


Fig 6. *The area of Urtu rule in which Ararat is not located (Habermehl, 2008, 486)*

Many claims have been made about seeing Noah’s Ark in Ararat since 1800. However, no result has been achieved so far despite determined reconnaissance teams, airy photographs, the use of satellites, and modern technology, and new competitors show up for Mount Ararat. The question now is if Mount Ararat was the place where the Ark rested, why Armenian historical sources had been silent about it until tenth century.

5.3.1.2. Mount of Cudi

Mount Cudi Dagh, at a height of about 2100 meters is located in the east of Mardin province (Fig 7).



Fig 7. *Position of Cudi Dagh compared with Ararat (Crouse and Franz, 2006, 100)*

Other names of Cudi Mountain in historical sources are Cardu, Nippur and Karduchian (Crouse and Franz, 2006). Berossus considers Cardu Mount as the place of descent. According to him, people used tar that had been applied in the Ark as preventative of evil eye (Crouse, 1992). Pliny and Josephus also accepted this opinion. Today, Mount Cardu coincides with Mount Cudi in Turkey (Lancer & Div, 2007). Jubilees Book regards Mount Lubar as one of the Ararat Mountains and the place of descent. In accordance with Jubilees when Noah settled on Lubar Mountain, planted grape tree and his three sons established three cities near the mount and Noah's tomb is on top of the mount (Crouse & Franz, 2006, 102). Early Christians and Babylonians considered Mount Cudi as the place of descent (Ainsworth, 1842). In the early Christian tradition, the name Gordian is used for it which is the English name for Greek word *Gordyae* denoting Kurds. Some researchers of 18th and 19th century considered Cudi as the deformation of Gordyae (Ainsworth, 1842; Sale, 1734).

During archaeological activities, artifacts from the third and second millennium BC were identified around Mount Cudi (Plotrovsky, 1969). The name of Nippur Mountain written in Sennacherib's relief is related to the seventh century BC. Christians built a monastery of the Ark around Cudi from seventh century onwards, on which a mosque was later built. On report of historic sources, until the end of the first millennium AD, people went on pilgrimage to Cudi Mount and picked up pieces of wood for blessing or charm (Crouse and Franz, 2006, 105).

Muslim writers mentioned the location of Judi Mount since the third century AH. Abū Ḥanīfah Dīnwarī (1989, 1), al-Maqdisī (1982, 139), Iṣṭakhrī (1992, 18), al-Mas'ūdī (1995, 21), al-Shābashtī (1986, 309), Ibn Jubayr (1907, 1:170) Ibn 'Ibrī (1998, 8), Ibn Baṭṭūṭah (1986, 245) have considered Judi in the Ibn 'Umar al-Jazīrah (southeastern of Turkey). Ibn Qutaybah (1978), al-Ṭabarī (1996, 1:129), al-Ya'qūbī (1992, 13), Ibn Athīr (1992, 292), Yāqūt al-Ḥamawī (1988) have placed Judi in Mosul. It is while Jayhānī (1989, 195) and Abū al-Fidā' (1970, 283) considered this mountain near Nasibin.

Biazar Shirazi, a contemporary writer, based on historical texts, believes that Judi refers to several mountains: 1. Ararat Mountain in Armenia; 2. al-Jazīrah in north of Mesopotamia; 3. Judi height in Saudi Arabia; 4. Cardin Mountains near Mosul (Biazar Shirazi, 2001, 42-43). Most of Muslim historians and geographers have located Judi Mountain near Mosul. However, no archaeological activity was done to discover Noah's Ark in this region.

In 1910, Bell discovered a ship-shaped stone structure in Cudi which was known as the Ark of Prophet Noah in the region. According to him, on September 14 every year, Muslims, Christians, Yazidis, Şābi'īn and Jews celebrate in honor of Noah's sacrifice after subsiding the Flood (Bell, 2002, 289-294). Bender's carbon-14 dating on a piece of wood (Fig 8) from Cudi Dagh showed 6500 years ago. In his belief, as Cudi Dagh was the first mountain on the northern edge of Mesopotamian plain (the Flood location), it is the place of descent; however, because of the few numbers of samples this experiment is not valid.



Fig 8. *Bender while picking up wood from Cudi Dagh (Bender, 2006, 113-114)*

Rohl, Hill, Crouse, Franz, Habermehl, Spencer, and Lienard believe that Genesis refers to the mountains of Ararat, rather than the peak of Ararat, and the witnesses' claims to have seen Noah's Ark in Ararat would not confirm the existence of the Ark. Since they have no evidence for their claims, only the pilots are more credible among them, and it can be assumed that the mountain, due to its structural substance, has basalt blocks, which are seen in coherent and regular shapes in some cases, and their images lack details. Although, the mountain is volcanic and lacks alluvial evidences, abundant historical texts and ancient traditions have made Cudi Dagh well known.

According to historical texts, Jewish, Assyrian, and Christian sources, the Book of Jubilees, and early historians such as Josephus and Nicolaus of Damascus, Berossus and Pliny, The Holy Qur'an and Islamic texts, the mountain in question is Cudi Dagh. This place had been for pilgrimage, worship and ritual so that pilgrims took the wood of this place for blessing or as a charm by themselves for a millennium. Cudi is also in the territory of Urartu, where olives and vineyards are planted. According to the Bible,

when Noah sent a pigeon to show the dry land, the pigeon had an olive branch in its beak in return then, Noah established a vineyard there after disembarking (Crouse and Franz, 2006, 99- 112; Rohl, 1998; Hill, 2002, 177; Habermehl, 2008). As mentioned, alluvial evidences have not been seen in the mountain. Therefore, we cannot talk about the existence of the Flood. There is a discrepancy between geological studies and written sources. Thus, the acceptance of Cudi Dagh as the place of descent is in doubt.

5.3.1.3. *Durupinar Site*

The Durupinar site of the boat-shaped formation (Fig. 9) located in 30 kilometers south of the Great Ararat has attracted the attention worldwide in 1959. Due to the adaptation of the dimensions of the flat space on the mountain with the dimensions mentioned in the Bible, some accepted this opinion (Habermehl, 2008, 492). A few large boulders were also discovered, which Fasold called them anchors (Fasold, 1988, 25-319); however, similar boulders were observed in the Arazap region. The stone anchors claimed by Fasold in this region according to chemical, isotopic and mining experiments are basalt and native to Ararat (Başaran et al, 2008, 95). Therefore, they do not belong to Mesopotamia. Furthermore, the study of Turkish and American archaeologists in 1985 and 2001 did not have any results in this regard (Başaran et al, 2008, 87).



Fig 9. *Durupinar boat-shaped formation (Başaran et al, 2008, 88)*

5.3.2. *Azerbaijan*

The Azerbaijanis have considered Mount of Gemikaya as the place of descent (Franz, 2013) and Nakhichevan as the first city established by Noah after the Flood and attributed a tomb to this prophet (Fig 10). These views have no scientific basis (Lanser & Div, 2008; Dwight, 1855).



Fig 10. The tomb attributed to Noah in Azerbaijan (Lanser & Div, 2008)

5.3.3. Iran

In Iran, areas such as Nahavand, Mount Takht-e Suleyman, Delfan Sarkeshti Mountain and Dasht-e Kavir have been introduced as the place of descent. In 290 AH, Ibn Faqih (1970, 93) considered Nahavand as the equivalent of *nūḥ āwand* that means made by Noah. The author of *Mujmal al-Tawārikh wa al-Qaṣaṣ* (1939, 186), Ibn Athīr (1992, 335), Yāqūt al-Ḥamawī (1988, 361), Qazwīnī (1994, 545), Abū al-Fidā' (1970, 473) and the unknown author of *Ṣuwar al-Aqālīm* (1974, 92) repeated Ibn Faqih's view. Based on these texts, Afrasiabpour considers the origin of Nahavand as *nūḥ āb band* which has been converted to *nūḥ āwand* (2002, 87). The toponymic study should be presented based on toponymical and philological studies. Therefore, this etymology should not be unscientific and accompanied with ethnic prejudices.

Cornuke in 2005 visited Mount Takht-e Suleyman in the Alborz Mountain range in northwest of Tehran and introduced it as the place of Ark's descent (Cornuke, 2005, 16). He had introduced Mount Sabalan as such (Cornuke & Halbrook, 2001). Cornuke's argument with regards the identity of Mount Takht-e Suleyman with the place of Ark's descent are as follows.

1. The territory of Urartu kingdom was stretched to the Alborz Mountains, and according to the Bible, Ararat on which the Ark settled coincides with Mount Takht-e Suleyman.
2. According to an interpretation of Genesis 11:2, the Ark descended in Persia and east of Shinar, which is located today in south of Iraq.
3. In ancient sources, e.g., Josephus, the eastern extension of Ararat to Persia is considered as such.

4. The outcrops discovered by them consist of fossilized pieces of wood which are considered by them as evidence for the Ark's presence on site.
5. The testimony of a soldier by the name of Davis who claimed to have observed the remains of the Ark in 1943.
6. The only known mountain outside Israel that has a Hebraic name.

Unlike Cornuke's claims, historical sources and archaeological data confirm that the Urartu border extended in most of its expanse to Urmia Lake in Iran (Zimansky, 1985, 10) and did not extend to Mount Takht-e Suleyman. Thus, the first and the third arguments are rejected. The fourth argument is not trustworthy since fossilized wood was found in hundred points of the world and no experiment was conducted on samples of this mount. In addition, Mount Takht-e Suleyman is a natural basaltic formation (Habermehl, 2008, 492). The sixth argument is also baseless because there are names combining with Solomon in other regions of Iran such as Mount of Solomon's Mother in West Azerbaijan. Cornuke's claim faced with negative reaction from Franz et al. (2008), and Habermehl (2008, 492) for the abovementioned reasons.

Despite archaeological excavations and surveys in the region have not confirmed the possible traces of the Flood, the mount of Sarkeshti in Delfan, Lorestan, has been introduced on internet websites as the place of descent of Noah's Ark. In 1838, while traveling from Zahab to Khuzestan, Rawlinson (1983) referred to Lurs' belief in descending the Ark on the mountain.

The oddest claim about the place of descent was made by Groebli that introduced Dasht-e Kavir and a mountain buried under the sand, but he has not provided a well-founded argument to prove it (Groebli, 1999, 313).

6. Noah's Flood: Universal or Local?

Has Noah's Flood been universal or local? There has been no agreement on this issue for centuries. Some believe that since the story of the Flood is narrated in various forms all over the world, it is a universal matter; on the other hand, some have attempted to respond to it through sciences and academic disciplines such as geology and archeology. Has any trace of this great Flood existed to prove its universality or locality? In this regard, in the Sumerian text about the Flood, the names of the five cities including Eridu, Bad-Tibira, Larak, Sippar, and Shourouppak have been mentioned. Ziusudra also settled in the land of Dilmun and established the cities of Lagash, Kish, Nippour, Urouk and Oumma after the Flood.

Dilmun was located in different places like Bahrain, east coast of the Persian Gulf, plains southwest of Babylon, Indus valley or the eastern part of the Arabian Peninsula (Bayyūmī Mihrān, 2004, 27). Based on the Mesopotamian texts, Dilmun had some terrific flood such as Shourbak Flood, Kish Flood and Ur Flood (loc. cit.).

Archaeologists, having studied the story of Gilgamesh, began to find evidence about a tremendous Mesopotamian Flood. Woolley encountered a thick layer of river sand 2.70 m to 3.35 m high between the ancient layers of Ur, in which there was no trace of ancient proofs. However, there was clay related to Obeid period in the layers before and after it. He dug in the courtyard of the Nanna Temple and rediscovered an alluvium layer during excavation. The alluvium layer in this amount represented the existence of a flood with a height of 7.5 meters (Fig. 11&12). Woolley estimated that such a flood in the low and flat land of Mesopotamia is the same as Noah's Flood (Woolley, 1930; Woolley, 1938). Two enormous floods occurred in Ur. Malycheff dated the oldest flood to 3500 BC. Based on microscopic experiments, the flood had a fluvial alluvium. The second flood occurred in 2700 BC and its origin was marine alluvium. Therefore, these two floods were not related to each other (Raikes, 1966, 52-63).

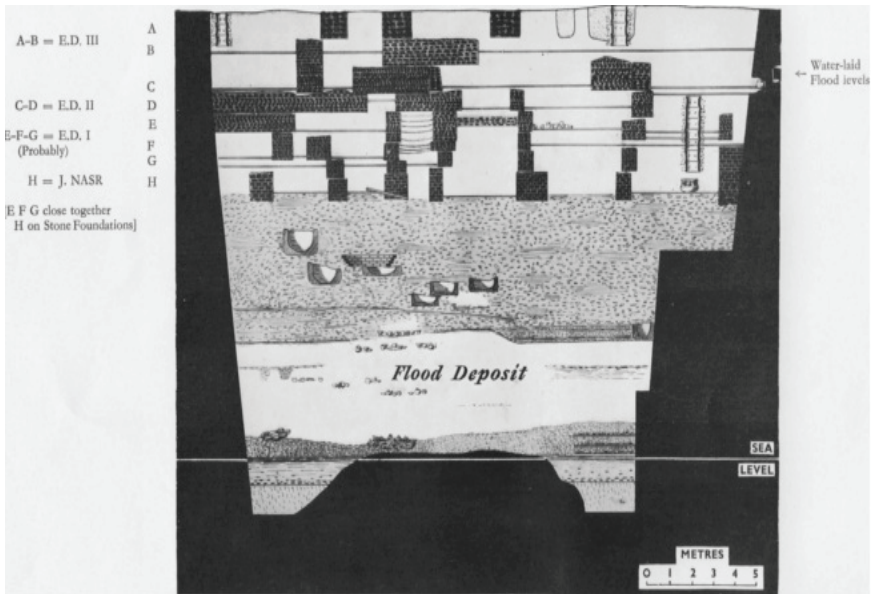


Fig 11. Floodwater layers in Ur city (Mallowan, 1971)

According to archeological excavations, three floods occurred in Kish, two of them in 2900 BC and the third one in 2600 BC, and the effects of all three are evident in the city streets. The thickness of the last alluvium, which was more severe, was estimated at 40 cm. A layer of alluvium with a thickness of 60 cm including soil and sand was discovered in shourouppak, which belongs to 2850 BC (Raikes, 1966, 52-63). Based on the report of the cuneiform tablets, the Sumerian Noah was warned of the flood that came from shourouppak. Some important cities such as Ur, Fara, Kish, and Uruk indicated that the Flood occurred in Mesopotamia and the valleys of the Tigris and Euphrates (Mallowan 1971, 238). Although Mallowan believes that Noah's Flood had happened in 2900 BC or a century earlier, he states that, the Flood was not universal and was considered universal in Genesis for educational purposes.

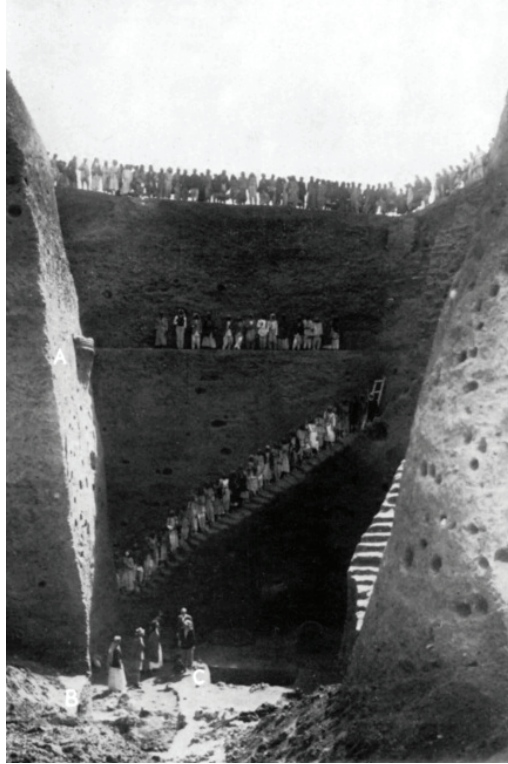


Fig 12. Floodwater layers in the courtyard of Nanna Temple (Mallowan, 1971)

Raikes, after reviewing the above studies, concluded that these results were not convincing and did not indicate the occurrence of Noah's Flood in

Mesopotamia (Raikes, 1966, 52-63). In fact, there is no report about such an alluvium to implicate a universal flood on other areas contemporary with Mesopotamia.

Suons believed that marine turbulence in Persian Gulf, which had been created by submarine earthquake, caused Noah's Flood and such stormy sea turbulences have a long history. In his belief, the Flood had happened on the lower reaches of the Euphrates River so that low lands of Mesopotamia had been completely submerged (Hannink, 1975, 501-500). According to Hill, collecting all the animals in the world had been an impossibility but only animals living in Mesopotamia were collected. Archaeological data outside Mesopotamia cannot prove Noah's universal flood either. As a result, most of the available information leads us to the fact that it was a local flood. Otherwise, its proofs must be everywhere if it was a universal flood. It is a leap of logic, if it is said that there is massive alluvial accumulation accompanied with fish fossil everywhere such as Everest Mountain, the Flood would be a universal phenomenon (Hill, 2002, 170; Hill, 2001, 24-40), since dating the alluvium formation needs to be investigated and compared with the time of the Flood.

7. Conclusion

Numerous verses in the Holy Qur'an imply the inclusiveness of Noah's flood as *āyah*, i.e., a physical or non-physical sign indicating a divine affair (miracle). This implication can be reached through seeing or hearing the sign. Therefore, in verse (Q.54:15), being a sign and a miracle can mean both seeing a miracle (Noah's Ark and the Flood) or hearing about it. Based on a number of studies, being a sign for Noah's Ark may indicate the existence of a material trace of it, or it may be indicative of Noah's Flood.

Most of the interpreters allow considering both physical (existence of wreckage) and non-physical (the famous Flood news) aspects of the phenomenon. Given the interpretive opinions of interpreters and archaeological documents in this field, it seems that the second aspect is stronger. Owing to the fact that no conclusive evidence has been found so far to indicate the existence of the remains of Noah's Ark, the verse in question refers only to "giving notice of the unseen" and its miraculous aspect does not indicate a scientific miracle.

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Metaphorical Conceptualization in the Last Eleven Parts of the Holy Qur'an: A Cognitive and Cultural Explanation

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ABSTRACT:

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The present semantic research has been performed in order to provide a cognitive and cultural explanation of conceptual metaphors in parts 20 to 30 of the Holy Qur'an. Extraction of 'types of conceptual metaphors,' determination of 'high frequency metaphors,' 'source domains' and 'target domains' is the process of conducting research using the conceptual metaphor theory. The variety of concepts of 'target' and the functional frequency of 'source' concepts indicate what concepts are intended in the holy Qur'an through metaphorical conceptualization. This study provides a basis for further understanding of the worldview presented in the Holy Qur'an and the possibility of determining the behavioral patterns of religion by identifying metaphors. The results of the present study represent a septenary classification of metaphors in the 'empirical source domain,' containing: 'social life,' 'needs of the body and its activity,' 'image schemas (schema-based),' 'elements of nature,' 'person,' 'body parts,' and 'similarity-based metaphors (simile)'; Among which, the highest percentage of metaphorical conceptualization in the source domain is in 'social life' and the lowest one is in the domain of 'person.' Considering the fact that most of the human knowledge is about the elements and sub-domains of 'social life,' Qur'anic sources in this domain have played the

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major role in abstracting the cultural and doctrinal concepts of religion and organizing Islamic religious experiences using the sources of this field and have been used as customary (conventional) and practical models. Accordingly, Qur'anic metaphors lead to the formation of cultural and cognitive patterns, and the 'monotheistic belief system' (Qur'anic) directs human bodily experiences in metaphorical conceptualization, and this 'Qur'anic worldview' can be seen as an Islamic cultural and cognitive model in the Qur'anic metaphorical schema.

KEYWORDS: Qur'anic conceptual metaphors, Basic level concepts, Image schema, Qur'anic conceptual metonymy, similarity-based metaphors.

1. Introduction

The main purpose of this study is to obtain cognitive cultural explanations for the metaphors used in the Qur'an by determining the target domain concepts and their empirical nature. In order to achieve this, "the construction of metaphorical conceptualizations" (Evans & Green, 2006, 9) in conceptual metaphors in the last eleven parts of the Holy Qur'an has been studied descriptively and analytically. Given that "Other aspects of religious experience involve the conceptualization of such notions as eternity, life after and before death, and so on – which are necessarily metaphorical, since we have no experience of them" (Kövecses, 2010, 26) and the Qur'an is a repository of treasure trove of religious concepts – the matter necessitates studying metaphors in the Qur'an.

In traditional research, metaphors are treated as unnecessary functional properties of words and are linguistic phenomena (Kövecses, 2010, ix-x), while in conceptual metaphor theory, metaphor is a characteristic related to concepts and their understanding and not to words and eloquent goals. Metaphor is more than a figure of speech; it is an inevitable process in human thought and reasoning, and ultimately human action and behavior.

In this regard, attention should be paid to the threefold division of metaphors as 'structural,' 'ontological,' and 'directional' (Lakoff and Johnson, 1980), which was very abstract, has been revised by the founders of this theory (Lakoff and Johnson, 2003, 264) and he (ibid.) has acknowledged the inaccuracy; However, unfortunately, we also see the continuation of the same threefold classification of metaphors in many

works in this field, which in practice has made it difficult to explain the distinction between metaphors.

Accordingly, in the present study, first, the existing mappings in the metaphors are determined, then by determining the source and target domains, the relationship between the two domains is explained, and finally a new septenary classification of metaphors based on the research results is given. The cognitive-cultural explanation of these metaphors is determined by reference to their empirical and real constituent elements, and in this way, the need for a threefold division of metaphors (Lakoff & Johnson, 1980) is eliminated. The main questions that we have sought to answer are the following:

1. Metaphorical mappings and the target and source concepts in the Qur'anic metaphors are based on which empirical-physical domains and with what frequency?
2. What is the relationship amongst the frequency of mappings of the source and target domains with metaphorical entailment?
3. What is the cognitive and cultural explanation for the source and target domains concepts in the metaphors of parts 20 to 30 of the Holy Qur'an?

2. Research Background

In this section, metaphorical studies from the point of view of 'traditional' and 'cognitive' thinkers are discussed. Cognitive studies of 'non-Iranians' and 'Iranians' are given in the review of cognitive studies. So far, many cognitive studies conducted by Iranian scholars have dealt with labeling the Qur'anic conceptual metaphors according to the threefold division of metaphor: 'directional, structural, and ontological.' These studies have considered only structural metaphors to have 'structure' through schemas.

Most recent works in this field dealt with specific metaphorical concepts or limited areas such as travel, and are therefore not all-encompassing. The most important previous 'traditional' and 'cognitive' researches (Iranian and Non-Iranian) are summarized in Table 1:¹

1. For further details, see Talebi Anvari (2019) and Talebi Anvari et al. (2018 and 2020).

Table 1. *The most important previous 'traditional' and 'cognitive' studies in the Qur'an*

Traditional	Cognitive	
	Iranian	Non-Iranian
Jurjānī (1988), (d. 1078)	Pourebahim (2009)	Olaf Jäkel (2002)
Ghazālī (1996/1904), (d. 1111)	Taheri & Alvandi (2013)	Charteris- Black (2004)
'Askarī (1981), (d. 1595) al-Rummānī (1968), (d. 1586) al-Suyūṭī (1973), (d. 1505)	Houshangī & Seifi Pargo (2009)	Shokr (2006)
al-Sakkākī (1937), (d. 1229)	Pourebahim et al (2009); Pourebahim et al (2012); Noor Mohammadi Aghagolzadeh & Golfam.(2012); Imanian & Naderi (2015); Vaysi & Orki (2016)	Maalej (2008)
Ḍiyā' Ādharī (2002)	Barati et al. (2016); Hejazi (2016) SalehiManesh (2016); Sabahi Garaghan, Heidariyan Shahri, & Mohammad Hossienzadeh (2016); Qaeminiya, Poursina, & Nosrati (2016); Yegane, & Afrashi (2016); Zolfaghari (2016); Ghaemi & Zolfaghari (2016 a); Ghaemi & Zolfaghari (2016)	El-Sharif (2011)
Qamarī (2007) Zamānī (2009) Pakzād (2009)	Hosseini & Qaeminiya (2017); Darzi et al (2017); Mirza Babaei; Ghaeminiya (2017); Ghaeminiya, (2011)	
Zayn al-Ābidīn (2013) 'Alīpūr (2013) Nāshirī (2013)	Bani-Assar (2018); Amini, Fattahzadeh & Afrashi(2018); Hejazi, Baharzadeh & Afrashi (2018); Sha'banpour et al (2018) Talebi Anvari et al (2018); Talebi Anvari et al (2019); Talebi Anvari (2019)	
Mar'ashī (2007)		

In the area of metaphorical studies in the language of the Qur'an, a lot of research has been done in the traditional way, of which the following can be mentioned: Metaphor in the Qur'an from the perspective of Sharīf Raḍī in

Talkhīṣ al-Bayān (ZiaAzari 2002); Expression of Qur'anic similes in *Sirr al-Bayān fī Tashbīh Āy al-Qur'an* (Qamarī, 2007); Analytical review of metaphor and simile in Parts 10 and 11 of the Holy Qur'an ZeinalAbedin Moghaddam (2013); Review of rhetorical aspects in Parts 2 and 3 of the Holy Qur'an (simile and metaphor) (Alipour, 2013); Deductive allegory in the Holy Qur'an (Zamani, 2009); Qur'anic manifestations in Khurāsānī style metaphors (Pakzad, 2009); The role of metaphor in explaining Qur'anic concepts, in the aphorisms of *Nahj al-Balāghah* (Naseri, 2013); The metaphors of the Qur'an: Speech Covers in the Quran (Mar'ashī, 2007).

In the Cognitive Works of the study of religious and Qur'anic metaphor, we refer to abstraction of metaphors by Olaf Jäkel (2002), identification of source domain by Charteris-Black (2004), the journey metaphor in the Qur'an by Shokr (2006), the heart and embodiment in the Qur'an (Maalej, 2008) according to Lakoff and Johnson (1980), and other works in the field.

In the present study, the main emphasis is on examining the manner of 'Construction of metaphorical conceptualizations' (Evans and Green, 2006, 9) from their 'sources' in the Holy Qur'an. Accordingly, all metaphors have 'structure' through image schemas.

The connection between culture and metaphor as discussed here has rarely been followed in the works of the predecessors. Innovation of the present study can, in particular, be described in providing the septenary classification, 'strong' and 'weak' metaphors, 'basic level' and 'image schematic' metaphors in the Holy Qur'an.

It is worth noting that 'simile' or similarity means creating resemblance. In cognitive linguistics, conceptual metaphors are not based on pre-existing resemblance, rather they are created based on the 'mapping' of aspects of 'source' onto 'target' in order to create similarity (like *God is light*). In addition, the similarities between 'sources' and 'targets' of metaphors are of the type of 'empirical similarity' (like *life is gambling*) and 'experimental coincidence' (like *prices went up*).

Another distinction of interest in the present study is the one between 'strong metaphors' and 'weak metaphors.'

In a small percentage of metaphorical expressions extracted in the study (the Qur'anic verses containing conceptual metaphors), both source and target – two sides of the metaphor – are mentioned which according to the theoretical part of the research, are called 'weak or resemblance' metaphors, in which the quantity of the metaphorical mappings by the images are low, yet they are considered conceptual metaphors. Most of the metaphors within the scope of research are 'strong metaphors' in which one side of the metaphor is mentioned.

The distinction between ‘basic level’ and ‘image schematic’ metaphors has also been considered in the research. ‘Image schemas’ in some metaphors are directly (sources) and in some indirectly conceptualizing blueprints and tools. The pre-conceptual ‘basic level’ concepts are tangible elements in the environment.

3. *Theoretical Foundations*

A conceptual look at the metaphors of the Qur’an deals not only with its eloquence and rhetoric, but also with the structure and ideology of this divine text and the ideas contained within the verses. The conceptual metaphors of the Qur’an determine not only the content and meaning of thought, but also the framework of Islamic thought (Qaemina, 2017, 24 & 28-27). “The most important point in recognizing a metaphor is the lexical unit that has been used metaphorically and is called the ‘metaphorical focus.’ In other words, ‘metaphorical focus’ is a word or group of words that are used in a non-literal sense. In the present study, metaphorical foci show ‘embodiment’ and ‘empiricality’ of metaphorical concepts” (Talebi Anvari, 2019, 70).

Here, ‘conceptualization’ is considered as a superordinate (cover) term for the processes of ‘metaphor,’ ‘metonymy,’ and ‘image schematic transformations.’ Metaphor, which is an essential element in our categorization and thinking processes of the world, is to represent the structure and access to reality in language. Accordingly, in collecting data, the Metaphor Identification Procedure, or MIP of Pragglejazz (2007, 3; Geeraerts, 2010, 530) and Steen (2002) has been applied, which is done by: 1. determining the foci of source and target concepts; 2. determining their frequency; and 3. determining the relationships between metaphorical elements.

It should be noted that all these steps have been done within the scope of research with 87 chapters (surahs). In the present study, metaphors are considered to be based on empirical (experimental) bases and are formed on the basis of ‘collective biological experience.’ Thus, a change in metaphors can refer to social and cultural changes and developments. Therefore, the different and distinctive metaphors used in the Qur’an can well reflect the social changes and developments that took place in the time of the Prophet (PBUH).

About ‘Creating a metaphorical resemblance in culture,’ our cultural experiences give rise to metaphors and metaphors and our views and actions are formed according to these metaphors. Metaphor is created in culture and causes cultural action (Lakoff, 2003, 68).

In terms of the relationship between 'metaphor and culture,' the key concept of 'culture sieve' by Ibarretxe-Antunano (2013) has been considered in this research. This sieve explains how metaphors arise from the structures of human knowledge, and how 'human bodily experiences' determine how he perceives reality. In the present research, we want to know what non-metaphorical and literal aspects of source concepts are involved in the emergence of religious concepts of the Qur'an (target concepts). The importance of examining these non-metaphorical aspects lies in the fact that cognitive linguists are empiricists who place special emphasis on the important role of physical experiences in the formation of metaphorical thinking and linguistic constructs.

In the present study, "Construction of [metaphorical] conceptualizations" (Evans and Green, 2006, 9) based on Kövecses (2010), Lakoff and Johnson (2003), and Lakoff (2006, 1992) has been investigated. A review of the data of the present study shows the metaphors studied in the last 11 parts of the Holy Qur'an can be classified in these seven experimental domains as the source of metaphorical conceptualization in the Qur'anic corpus, including: 1. Social life; 2. Needs of the body and its activity; 3. Organs of the body; 4. Elements of nature; 5. Metaphorical foci of similarity-based metaphors; 6. Image schemas; 7. Person (Talebi Anvari, 2019, 101-100). Accordingly, and considering the fact that the ratio of 'target' concepts is higher than 'source' concepts in the Qur'anic metaphors, the above-mentioned septenary domains along with sub-domains are the basis.

In order to achieve the above septenary division, following the extraction and study of Qur'anic conceptual metaphors in the conceptual metaphor theory in the experience-based analysis of the metaphors, the combination of cognitive perspective along with other perspectives has been used as follows:

- The first four areas/ domains of metaphors, namely 'social life,' 'needs of the body and its activity,' 'elements of nature,' and 'organs of the body,' are in line with Mar'ashī (2007).
- The types of 'schema-based' metaphors are particularly inspired by the divisions of Santibáñez (2002), Kövecses (2002), and Evans & Green (2006).
- The 'similarity-based' metaphors are cited by reference to metaphorists such as Lakoff & Turner (1989), Chippe & Kennedy (2001), and Stockwell (1992). 'Creating similarity' in metaphor was also mentioned, citing Lakoff & Johnson (2003).
- The 'person-based' metaphors are based on the findings of the present study from previous studies and classifications, in particular Lakoff (2006), Lakoff & Johnson (2003), and Qaemina (2017).

The analysis of metaphors based on their source has been done with reference to Kövecses (2010) and the relationship between culture and metaphor has been done in accordance with Ibarretxe-Antunáño (2013), Lakoff & Johnson (1980).

4. Data Analysis

Data analysis was performed by determining the concepts in the ‘source’ and ‘target’ domains, during which the metaphors as well as the types of metaphorical mappings were arranged in order of frequency in the text. It should be noted that in the analysis of metaphors in this research, following the extraction of metaphors from the text of the Qur’an using the Metaphor Identification Procedure, or MIP of Pragglejaz group (2007), 1347 verses containing conceptual metaphors were identified. The classification of the extracted conceptual metaphors was done with regard to the experimental domains that act as the context and origin of these metaphors.

In metaphor, concepts from the ‘source’ domain onto the ‘target’ domain are mapped.¹ Accordingly, due to the existence of higher occurrences of the target concepts to the source concepts in the metaphors, in the analysis and classification of conceptual metaphors of the Qur’an, the mechanism of mapping the source concepts onto target was investigated. In metaphorical conceptualization, two pre-conceptual elements, ‘image schema’ and ‘basic level,’ are used. Metaphorical mapping tools are image schemas that are sometimes directly involved in conceptualization. Schemas are not usually used in conceptualization alone, but are associated with all co-occurrences and transformations. For example, in the verse (Q.27:24), Satan ‘adorns’ deeds. The concept of ‘embellished,’ which is a feature of ‘basic level concepts,’ is understood in terms of the *object* schema. Basic level concepts are concepts that are mapped onto targets of metaphors and their mapping blueprints are image schemas. In resemblance-based metaphors (simile), it is the images that are mapped onto targets. But the important thing is that in all cases it is the experience that is formed as preconceived elements in the mind in the form of cognitive patterns.

1. For short, the ‘target’ concepts are shown on the left and the ‘source’ concepts are shown on the right of the arrow, and the symbol \rightarrow means as. For example: the metaphorical focus of the Qur’anic verse (Q.30:25) (و... مِنْ آيَاتِهِ أَنْ تَقُومَ السَّمَاءُ وَالْأَرْضُ بِأَمْرِهِ) نَقُومَ, “to stand” and therefore the mapping of this verse is *earth and sky as person*, and the characteristic of this metaphor is ‘standing,’ and its metaphorical mapping is shown as: *earth and sky* \rightarrow *person*.

In many cases, including body parts, metaphorical conceptualization interacts with conceptual metonymy. For instance, in (Q.33:25) (لَمْ ... (يَنَالُوا خَيْرًا ...), the metaphorical focus of the verse is *يَنَالُوا*, 'attainment and reception.' This source is mapped onto the target concept by interacting with a conceptual metonymy, one goes somewhere to get something; that is, the basic concept of 'attaining an object' by relating metonymy to *locomotion* schema has led to the conceptualization of *خَيْرًا*, "advantage" as place. Therefore, the mapping of the verse is *advantage (victory and booty) as a place*. Here 'advantage' is a superordinate concept that includes the basic level concepts of booty and victory. The superordinate concept is one used in the source or target of metaphors and includes several basic level concepts (Rosch et al., 1976). Subordinate (special level) words have a comprised nature (Qaemina, 2011, 284). As an example, in *وَإِنَّ جُنَدَنَا لَهُمُ الْغَالِبُونَ* (Q.37:173), *and our army is certainly the dominant army in the future*; the subordinate concept 'army of God' is used, which is comprising.

People organize their knowledge by means of structures called idealized cognitive models, or ICMs. "[These] cognitive models, are not slices of reality, ... but mental entities, not real things" (Lakoff, 1987, 285). "In general, concepts are elements of cognitive models" (ibid., 286). Now, if we associate linguistic elements with conceptual elements in idealized cognitive models, these models become a symbolic ICM. (ibid., 289). These cognitive models are not merely mental, but they are the structuring of experience. Cognitive models derive their meaningfulness directly from their ability to adapt to the pre-conceptual structure of basic level concepts and image schemas. In contexts where no clearly discernible pre-conceptual structure to our experience is observed, we import such structure via metaphor. This means that we understand domains of experience metaphorically that have no pre-conceptual structure of their own (ibid., 302-303). Qur'anic metaphors are considered as symbolically idealized cognitive models that, in addition to explaining abstract concepts in the most eloquent and rhetoric way, determine how we act. The metaphors of the Qur'an are in fact the framework of Islamic thought.

In analyzing and recording, the metaphors extracted from the Qur'anic text, first the 'linguistic phrase of metaphor' (metaphorical mapping) in 'verse,' along with its 'translation' and 'interpretation' from reliable sources has been presented, followed by cognitive analysis and study in each verse. Based on the obtained data, some 'septenary domains' were identified and presented as the source of metaphorical conceptualization in the Qur'anic corpus, along with

the relevant 'sub-domains' as well as the relevant 'sub-parts.'¹ Due to the size limitations of the article, out of a total of 1,347 verses reviewed in 11 parts of the Qur'an in 7 domains, from each of the septenary areas of research, a verse, as an example, is analyzed as the source of metaphorical conceptualization here, and in each of them, 'metaphorical mapping,' 'sample verse,' 'translation,' 'interpretation,' along with 'cognitive explanation' has been considered.

4-1. 'The Sphere of Social Life,' As a Source of Metaphorical Conceptualization (Including 9 Sub-Domains)

This section is based on the concepts used as source in the 'social sphere' in the metaphorical conceptualization of the Qur'an. The nine source concepts are the following: 1. 'Kinship-terms' (including 4 subsections);² 2. 'Housing' (including 6 subsections); 3. 'Home appliances, heating and lighting' (including 12 subsections); 4. 'Commercial and economic relations' (includes 12 subsections); 5. 'War and Invasion and Competition' (including 19 subsections), 6. 'Test and Exam' (including 8 subsections); 7. 'Journey' (including 39 subsections); 8. Handmade and industrial products' (including 6 subsections); 9. 'Agriculture' (including 6 subsections) are the key sources that form the basis of the metaphorical mappings of the Qur'an in this section. Paying attention to the high frequency of the concept of 'journey' in metaphorical conceptualization in the Holy Qur'an, the following is an example of the concept of 'journey' from the above 9 concepts

Social Life: Journey

Metaphorical mapping: PHARAOHS → LEADER

Verse: وَجَعَلْنَاهُمْ أَئِمَّةً يَدْعُونَ إِلَى النَّارِ ... (القصص/41)

Translation: We made them leaders who invite to the Fire (Q.28:41).

Interpretive source: Makarem (1993, 16:90-91).³

Cognitive explanation: In this noble verse, 'causality' in source and its metaphorical mapping has caused the metaphor of the verse to be conceptualized; In this way, God has made some persons as leaders in the path of worldly life and the path of hell (metaphorical mapping) due

1. Due to the limited scope of the article, the subsections have been omitted here, and only a few subsections in the sub-areas of 'social life' and a number of Qur'anic verses including them in footnote have been mentioned. For more details on the domains, sub-domains and subsections of each sub-domain along with the text of the verses and the cognitive explanation of the extracted metaphors, see Talebi Anvari, 2019, Chapter 4.
2. For further details on all subsections, see Ibid.
3. It should be noted that the explanations made using interpretations have been used as valid cognitive sources and have only been referred to due to the limitation of the volume of the article

to their own misplaced actions (causality). So metaphorical mappings 'Pharaohs (Pharaoh and his armies) as the leader (guide) of the fire of hell,' 'fire (hell) as the destination,' and the name of mapping 'life (worldly and hereafter) is journey' are in this verse.

4.2 *The Physical Needs and Its Activities, as a Source of Metaphorical Conceptualization (Including Sub-Domains)*

This section is based on the concepts that have been used as a source in the field of body needs and its activity in metaphorical conceptualization in the last eleven parts of the Qur'an. In this area, just like the first part of the analysis (social life), the diversity of human experiences gives rise to a wide range of metaphorical conceptualizations. In this section, 5 concepts: 1. 'Functions and physical activities' (including 38 subsections); 2. 'Human mental and spiritual activities' (including 5 subsections); 3. 'Illness and recovery' (including 2 subsections); 4. 'Nutrition' (including 6 subsections); 5. 'Life and Death' (including 2 subsections) are the key empirical sources of metaphorical conceptualization mapped onto the targets of metaphors. The embodiment of the construction of metaphorical conceptualization is more obvious¹ here than in the other sections and is more based on the embodiment. Below, from the 5 sub-areas of this section, we provide an example of the concept of 'physical functions and activities.'

Physical Functions and Activities

Metaphorical Mapping: THE SOUL → BREATHING (BREATH)

Verse: ... وَ نَفَخَ فِيهِ مِنْ رُوْحِهِ ... (السجدة/9)

Translation: And breathed into him of His Spirit (Q.32:9).

Interpretive Source: Tabataba'i (1996, 16:374).

Cognitive Explanation: The metaphorical focus of the verse is 'breathing,' the bodily concept of 'blowing' is mapped onto the soul and has created the mapping of 'soul as breath,' because it is inhaled and exhaled. This noble verse conveys the duality of human creation, in that man is a combination of body – "the first man from mud and the birth of his offspring from the abstract idea of some low water" (Tabataba'i, 1996, 16:374) – and the soul. The name of mapping 'mind is body,' in which the soul is breathed as a breath, is found in the verse.

1. With the exception of human mental and spiritual activities, in which the element of Islamic culture and ideology plays an important role.

4.3. *Image Schemas (Schema-Based), As a Source of Metaphorical Conceptualization (Including 5 Sub-Domains)*

The metaphorical conceptualization of this section is based on image schemas. In other words, the sources of the metaphorical concepts of this section are image schemas. In other sections, most of the source concepts are basic level and the image schemas are responsible for their mappings, but in this section, the 'image schemas' (Evans & Green, 2006, 190) themselves are directly metaphorically extended and mapped. Five image schemas: 1. 'unity/multiplicity' (including 3 subsections); 2. 'force' (including 13 subsections); 3. 'object' (entity, *content*) (including 43 subsections); 4. 'containment' (*container*, *content*) (including 26 subsections); 5. 'space image schema' (directional (including 38 subsections)) form the sources of metaphorical conceptualization in the last 11 parts of the Holy Qur'an. The following is an example of the concept of 'containment' schemas (*container*).

CONTAINMENT Schemas (CONTAINER)

Metaphorical Mapping: RIGHTEOUS SERVANTS → CONTAINER

Verse: وَأَدْخِلْنِي بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ (النمل/19)

Translation: And admit me, by your mercy, among your righteous servants (Q.27:19).

Interpretive source: al-Ṭabrisī (1981, 18:92) and Ṭabataba'i (1996, 151:505-504).

Cognitive explanation: The metaphorical foci of the holy verse are *bi-* and *fi*. *Bi-* creates the necessary motivation for 'mercy' to be a tool or object by which God Almighty enters the individual in a 'collection' (*container*) called righteous servants. In this verse, the aspect of support and propping of container is also considered, and therefore, there are the mappings of 'righteous servants as container or collection,' and 'mercy as an object or tool'. 'Schema *unity/multiplicity*'. *collection*' type (Evans & Green, 2006, 190) and interact with *container* schema in this verse.

4-4. *Elements of Nature, As the Source of Metaphorical Conceptualization (Including 5 Sub-Domains)*

This section is based on the concepts that have been used as a source in the domain of elements of nature in metaphorical conceptualization in the Qur'an, and its sub-areas as the following: 1. 'Landscapes and features of the earth' (including 8 subsections); 2. 'Phenomena and elements of

nature' (including 7 subsections); 3. 'Plants' (including 5 subsections); 4. 'The four-legged animals and their parts/ members' (including 11 subsections); 5. 'The sky' (including 3 subsections), containing the key sources that form the basis of the metaphorical mappings of the Qur'an in this section where the role of empirical evidence is directly based on the elements of nature, in the direction of visualization and embodiment, and given that metaphors are conceptual phenomena, we use their conceptual mappings to understand abstract concepts. For example, 'Landscapes and features' are examined below.

Landscapes and Features of the Land

The metaphorical concepts of this section are conceptualized based on the landscapes and features that are on the ground.

Metaphorical mapping: DIGNITY, HUMILIATION, HARDNESS, SOFTNESS OF THE EARTH

Verse: ... وَ جَعَلُوا أَعْرَبَهُ أَهْلَهَا أَذِلَّةً ... (النمل/34)

Translation: And reduce the mightiest of its people to the most abased (Q.27:34).

Interpretive Sources: (al-Rāghib, 1991, 2:590) and (Qurashī, 1992, 3:21).

Cognitive Explanation: The metaphorical foci of the holy verse are the two opposite concepts of أَهْلَهُ "honor" and أَذِلَّةً "humiliation." "Kings kill a group, capture some, and displace a group, leave some homeless, and plunder and loot as much as they can" (Makarem, 1993, 2:590). The hard and soft aspects of the earth are mapped to the target concepts of 'dignity' and 'humiliation,' respectively, which are used to express behavior. Humiliation of loved/noble ones is a superordinate concept that includes the basic concepts of killing, captivity, homelessness, and looting in a variety of 'force schemas.' According to this, the mappings of the verse are 'honor (hardness and roughness) as the hardness of the earth,' 'humiliation (tameness) as softness of the earth,' and the name of mapping is '(morality is force (strength)).' The great metaphorical system of 'force system' is based on the physical force metaphorical source domain and has three abstract and essential aspects: emotion, morality and thought (Kövecses, 2000, 199-198).

of the Holy Qur'an that contain the body organs words, illustrate the fact that metaphorical conceptualizations of cognition, emotion, and faith are performed using the 'heart,' the 'eye,' and the 'ear.' Conceptualization of the existential relationship with God and faith is done using 'face' as the source, and behavioral attributes, personality and states of people using 'legs,' 'heads and feet' and 'nose' as the source. The 'hand' is used to conceptualize the characteristic of 'mastery' of God, the main partner in life, and to evaluate human beings. Nine sub-areas of this section include: 1. 'Eyes' (including 14 subsections); 2. 'Mouth' (including 1 subsection); 3. 'Hands' (including 3 subsections); 4. 'Legs' (including 1 subsection); 5. 'Heart (Chest)' (including 5 subsections); 6. 'Arm' (including 1 subsection); 7. 'Head and face' (including 6 subsections); 8. 'Ear' (including 6 subsections); 9. The 'body' itself (includes 1 subsection).

Eye

Metaphorical Mapping: HAPPINESS AND JOY → COOLNESS OF EYES

Verse: ... تَقَرَّرَ أَعْيُنُهُنَّ ... (الاحزاب/51)

Translation: That makes it likelier that they will be comforted (Q.33:51).

Interpretive Sources: (al-Sabziwārī, 1985, 5:448) and (al-Rāghib, 1991, 3:157-158).

Cognitive Explanation: The metaphorical focus of the holy verse is تَقَرَّرَ, 'cooling down,' which is mapped in the sense of happiness onto the target, and therefore, there is a mapping of 'happiness and joy as the coolness of the eyes' in the verse (in Persian, 'happiness and joy is the light of the eye'). The mapping of this noble verse implies a characteristic of Arabic culture that in the hot deserts of the Arabian Peninsula, the coolness and coldness related to the human physical experience brings comfort to the body and mind, and this concept is of particular importance there; In other words, the body and bio-social culture of individuals have led to the aforementioned metaphorical mapping, and this mapping has created a cultural-behavioral model according to which people live and believe, and if they wish someone something unpleasant, they wish that may 'hot tears' roll down from his eyes and if they wish someone to be happy, they wish him 'cold tears.'

4-7. Source (Metaphorical Focus) of Similarity-Based Metaphors (Simile) (Including 3 Sub-Domains)

In the traditional view of the category of simile, the syntax and apparent structure of the linguistic expression is the pillar of distinguishing simile from metaphor: ‘The two basic pillars’ of simile are the ‘*topic*² or tenor’ and the *vehicle*,’ unlike the shared *property* or ground and the *comparator*, they are never removed and the imaginary description is the ground that must be derived from the vehicle. Therefore, “the existence of both tenor and vehicle are necessary” (Shamīsā, 2008, 70). There is a kind of similarity in metaphor. But this objective and non-metaphorical similarity is not related to the traditional view. Metaphors preserve the image schematic structure, that is, when we understand the target concept metaphorically, this concept shares a kind of image schematic structure with the source and this also is part of the structure that metaphor has created. The bottom line is that metaphor always leads to the similarity of the image schematic structure between the source and target domains. This is by no means similar to the traditional view; however, in the conceptual metaphor theory, “a kind of limited special similarity does play a role” (Lakoff & Turner, 1989, 123). Because similes draw our attention to partial mappings and novel metaphors, they are especially present in image metaphors: *a pallid sun appeared like a noisy neighbor* (Sullivan, 2013, 112). Therefore, similarity metaphors are called ‘weak metaphors,’ and the rest of the metaphors are called ‘strong metaphors’ due to the breadth of their mappings and the lack of use of comparators. Similarity-based metaphors of the research are presented with the title of source (metaphorical focus) of similarity-based metaphors in the following order: 1. ‘Source of nature’ (including 23 subsections); 2. ‘Source of social life/ social life source?’ (e.g., life, building, and furniture; industry and industrial products; a total of 17 subsections);

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1. In Persian classical literature, there are four components of simile in comparison to Western literature; namely, the *event* (eventuality or state) part – usually a verb, it sets the frame for the observation of the *ground* – does not exist in Iranian literature.
 2. The four components of simile in Persian are the following: (مشبهه, *tenor*), (مشبهه به, *vehicle*), (ادات تشبیه, *comparator*), and (وجه شبه, *property* or ground). English components of the terms were cited from Hanks, 2012 cited in Niculae & Danescu-Niculescu-Mizil, 2014:2010)

3. 'Source of man and his activities' (including 17 subsections); 4. 'Imaginary source in the domain of mind' (including one subsection). They are considered as domain (idealized cognitive models). The basis of the division of this section is the concepts that are as a *source* or *metaphorical focus* (vehicle) in the mentioned domains. Here is an example of metaphors similarity of the foundation with the origin of the building, and furniture.

The Similarity-Based Metaphors with the Source of Building and Furniture

Metaphorical Mapping: HYPOCRITES → A WOODEN BEAM
LEANING AGAINST A WALL

Verse: ... وَ إِن يَقُولُوا تَسْمَع لِقَوْلِهِمْ كَأَنَّهُمْ خُشْبٌ مُسْنَدَةٌ ... (المنافقون/4)

Translation: And if they speak, you listen to their speech. Yet they are like dry logs set reclining [against a wall] (Q.63:4).

Interpretive sources: (Makarem, 1993, 24:153), and (Mar'ashī, 2007, 233).

In verse (Q.63:4), there is the name of mapping: 'the mind is body'; because "their inside is not as attractive and beautiful as their appearance" (Tabataba'i, 1996, 19:473). The inside is the mind whose image is compared to the outside.

Cognitive Explanation: The metaphorical focus is "خُشْبٌ مُسْنَدَةٌ, dry wood leaning against a wall," in which is the source domain (خُشْبٌ) that is bound to the adjective, مُسْنَدَةٌ. "كَأَنَّ" is a comparator. This comparator states that the hypocrites are always leaning against the wall like dry wood. The image of a wooden beam leaning against a wall is mapped onto the hypocrites. The metaphor is of an image kind: 'hypocrites lean against a wall like a wooden beam.' This is a specific-level metaphor of the generic-level metaphor 'the great chain of being.' In this metaphor, we also understand a group of people with the help of 'things' (soulless sticks). A basic level concept is used at the source. This concept is subordinate (specified) for people from primitive and rural life. The metaphorical mapping of the holy verse is 'hypocrites as a wooden beam leaning against a wall' and a subordinate concept is used at the source.

5. *Research Findings*

Quantitative and qualitative analysis of metaphorical elements in the Qur'anic corpus under study in two general groups of 'basic level concepts' and 'image schemas,' which are classified into two categories of 'strong' and 'weak' metaphors, shows the following:

- Basic level concepts in 5 areas: 1. Social life; 2. Body parts; 3. Physical activities; 4. Elements of nature; 5. Human attributes.
- Metaphorizing image schematic elements, in 5 categories of image schematic 'unity (*multiplicity*),' 'force,' 'object,' 'containment,' and 'space.'
- 'Weak' metaphors (similarity-based with comparators), in the areas of 'nature,' 'social life,' and 'mind.'

Of the above septenary divisions, 'strong' metaphors fall into the first six categories, and similarity-based metaphors are considered 'weak metaphors.'

The above-mentioned metaphorical Conceptualization septenary domains in the present study are divided on the basis of 'source concepts' and 'target concepts,' which are grouped accordingly.

5.1 *Based on the Source Concepts*

The metaphorical Conceptualization septenary domains and the subsections of each are given in Figures (1) and (2). Strong metaphors themselves include dual classifications: 'basic level concepts' and 'image schematic' (Figure 1).

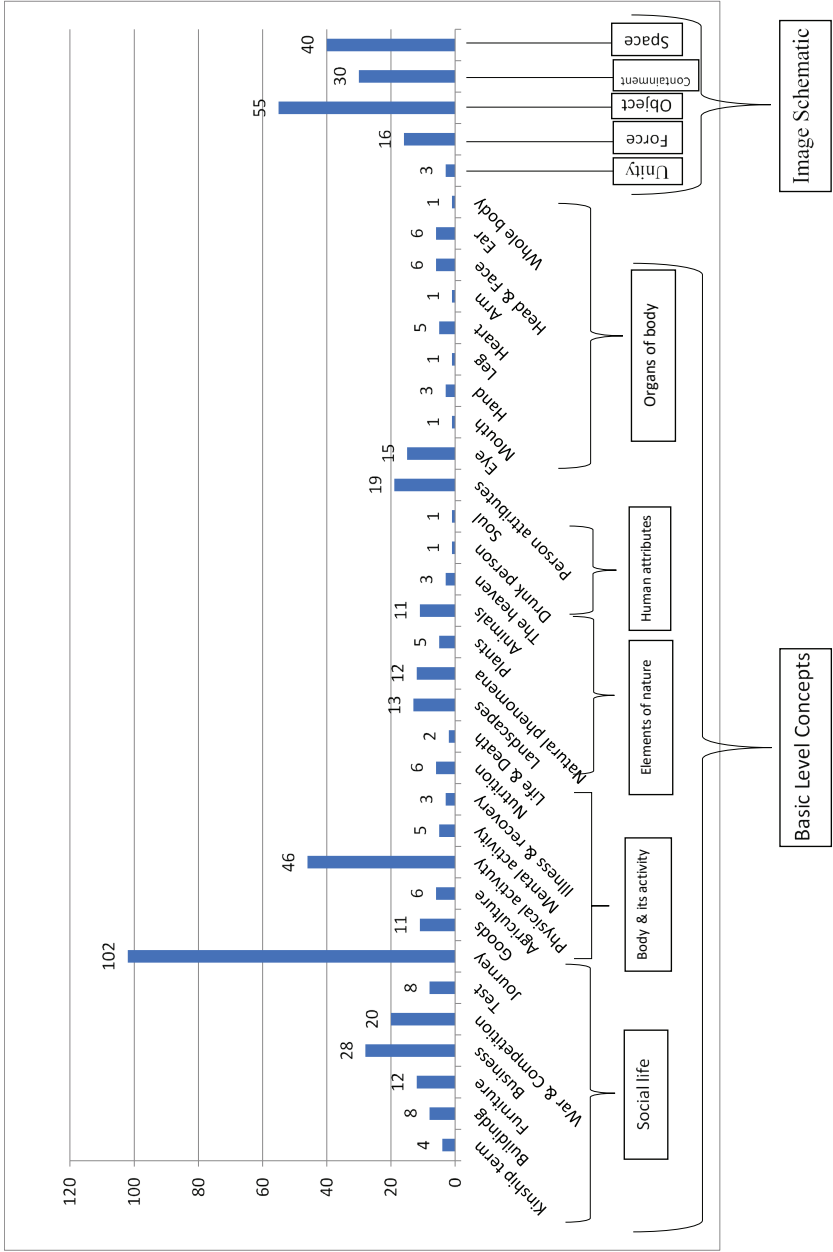


Figure 1. Six source domains of metaphorical Conceptualization of strong metaphors in the last 11 parts of the Holy Qur'an and its subsections

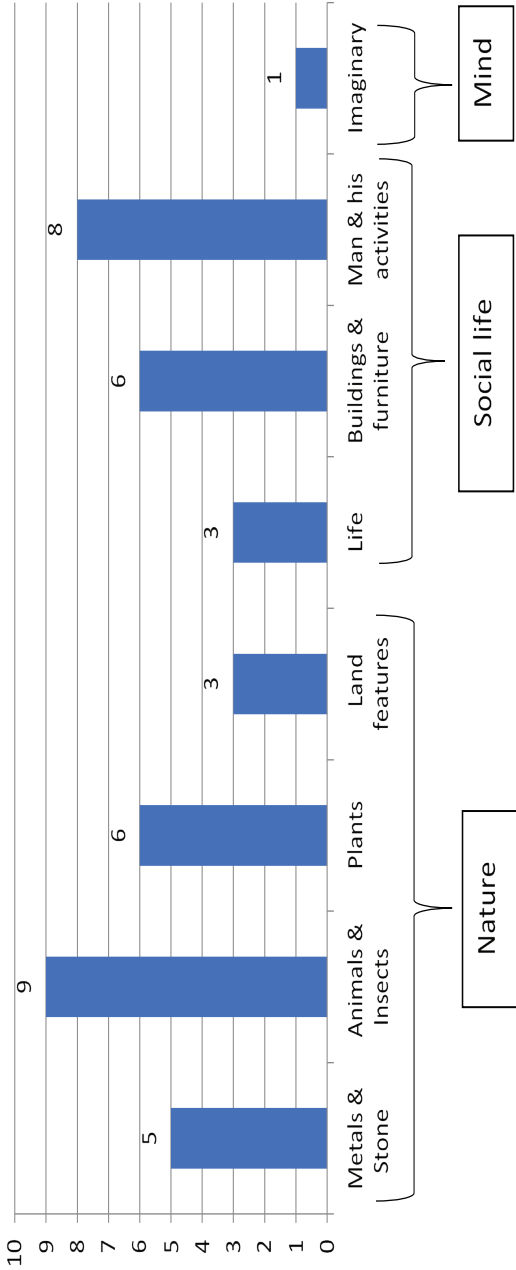


Figure 2. Source domains of metaphorical conceptualization of weak metaphors in the last 11 parts of the Holy Qur'an and its subsections

5-2. *Based on Target Concepts*

Metaphorical 'targets' and their subsections are summarized in each of the septenary areas of research in separate diagrams based on the research findings, and in each, the central circle represents the 'source' and the radii derived from it represent the 'targets.' Here are 2 diagrams as examples for target concepts related to the 'basic level concepts' (related to head and face) source domain and 'image schemas,' and 1 diagram for target concepts related to the 'weak metaphors' source domain (complete diagrams in Talebi Anvari, 2019, 428-453).

The variety of target concepts and the applied frequency of source concepts in this relation show what concepts in the Holy Qur'an were intended to add meaning through metaphorical conceptualization to lead to a new attitude among the Arabs at the time of the revelation of the Qur'an, most of this diversity is seen in journey.

5.2.1. *Strong Metaphors*

5.2.1.1. *Basic Level Concepts*

In showing the target concepts related to the septenary source domains, here is a diagram for 'target concepts related to the head and face' along with a table showing its application in the Qur'anic verse and its metaphorical and metonymic mapping (for more details, see Talebi Anvari, 2019).



Figure 3. *Organs: target concepts related to the head and face*

Table 2. Analysis of target concepts related to head and face

	Metaphorical and virtual mapping	Verse
1	'shame as throwing your head down,' and 'shame as turning your head and legs upside down.'	<p>وَلَوْ تَرَىٰ إِذِ الْمُجْرِمُونَ نَاكِسُوا رُؤُسِهِمْ عِنْدَ رَبِّهِمْ ...</p> <p>Were you to see when the guilty hang their heads before their Lord [confessing] ... (Q.32:12).</p>
2	"having a face/ one whose prayer is accepted (by Allah) as having a face"	<p>... وَكَانَ عِنْدَ اللَّهِ وَجِيهًا.</p> <p>... and he was distinguished in Allah's sight (Q.33:69).</p>
3	'recent time as a nose'	<p>... مَاذَا قَالَ آتِنَا ...</p> <p>...What did he say just now? ... (Q.47:16)</p>
4	'the nose (of the humiliator of islam) as the trunk/snout,' and 'the disgrace of the people (the rebellious aggressor selfish rebellion)' as the mark of their nose; and the conceptual metonymy nose for a person,' and the name of mapping 'generic is specific.'	<p>سَنَسِمُهُ عَلَى الْخُرْتُومِ.</p> <p>Soon We shall brand him on the snout (Q.68:16).</p>
5	The metonymy 'face for (vehicle of) of the whole existence.' The metaphorical mappings 'faith and worship as submission of the face to allah,' and 'faith and benefaction' (righteous deed) as a strong rope (bond)	<p>وَمَنْ يُسَلِّمْ وَجْهَهُ إِلَى اللَّهِ وَهُوَ مُحْسِنٌ فَقَدِ اسْتَمْسَكَ بِالْعُرْوَةِ الْوُثْقَىٰ ...</p> <p>Whoever surrenders his heart to Allah and is virtuous, has certainly held fast to the firmest handle ... (Q.31:22).</p>

5.2.1.2. *Image Schema*



Figure 4. *Target concepts related to the image schematic source domain*

5.2.2. *Weak Metaphors*

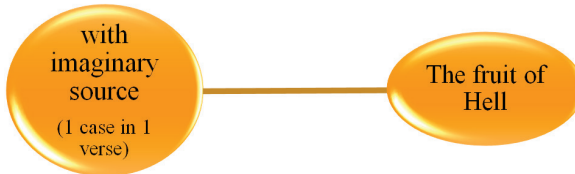


Figure 5. *Target concepts related to the source domain of weak metaphors*

5.3. *The Answers to the Research Questions*

We follow the answers to the research questions here. In response to the research question: Metaphorical mappings in Qur'anic metaphors in the corpus under study are formed on the basis of which empirical-physical domains and what is the frequency of the mappings, the target and source concepts in them?

The results of research in 1347 verses studied in 11 parts of the Holy Qur'an show the appearance of elements of metaphorical mappings (source and target) in the order of frequency of occurrence in the following

septenary physical experimental areas:

1. Social life; 2. Schematic basis; 3. The needs of the body and its activity; 4. Elements of nature; 5. Organs of the body; 6. Similarity basis (weak metaphors); 7. Person.

In these 7 main domains, the highest frequency is in the 'social life' experimental source domain and the lowest frequency is in the person domain which are shown in the table 3 with the number of verses in each domain and the number of items of source and target concepts.

Table 3. Summary of frequency of conceptualizing concepts of metaphor in the last 11 parts of the Holy Qur'an

Field of experience	Total number of the source concepts	Number of verses	Number of the target concepts	Percentage of the target concept (metaphor) in the domain
1. Social life	199	519	329	12/41
2. Schema based	144	384	179	37/22
3. Needs of the body and its activity	62	136	93	62/11
4. Elements of nature	44	117	77	62/9
5. Organs of body	39	80	52	5/6
6. similarity based	41	47	41	12/5
7. Person	21	64	29	62/3
Total	550	1347	800	100

Accordingly, the total frequency of metaphorical concepts in the septenary areas of research is shown in Table 4.

Table 4. Total frequency of metaphorical concepts in seven areas of research scope

Experiential field	Total number of the source concepts	Number of verses	Number of the target concepts
7 domains/areas?	550	1347	800

In the second question of the research, we have sought to find a relationship between the frequency of mappings of the source and target domains with metaphorical entailment, the results of which have shown that:

- ‘Social life’ is the most frequent experimental field with 41.12% of application among the septenary fields of research and among the sources of social life domain; ‘travel’ has the highest frequency with 40.72% occurrence.
- According to Table 3 in the study, the source domain concept ‘journey’ in the field/scope of social life with a frequency of 102, is the main element in constructing 134 metaphor target concepts in 271 sacred verses. Among the 7 domains, the most correspondences are related to the sphere of social life and image schemas.
- Overall, most correspondences relate to the realm of social life, image schemas, and business. This indicates that the higher the frequency of mapping between the source and target domains for a metaphor in a particular text, the more metaphorical entailments that metaphor implies. Accordingly, the journey, object, and business metaphors show the greatest metaphorical entailments.

The percentage of sources in constituting the metaphors in the 11 parts of the Holy Qur’an in the septenary areas studied is as follows.

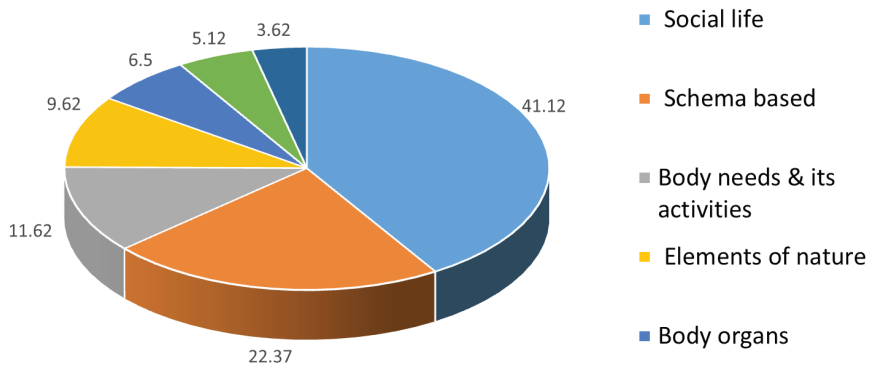


Figure 6. Percentage of sources in constituting the metaphors in the 11 parts of the Holy Qur’an

In the third question, we have been looking for a cognitive and cultural explanation for the source and target concepts in Qur’anic metaphors. In order to achieve this goal, two ‘source’ and ‘target’ domain concepts were

studied in the Qur'anic body:

- In the source concepts domain:
 - Journey, object, physical activity, and spatial concepts with the highest frequency occurrence represent Arab nomadic life.
 - The higher frequency of eye and ear in conceptualization indicates the illiterate and oral Arab society.
 - The greatest human knowledge of the elements and sub-domains of social life and sources in this domain have the greatest role in the abstraction of religious concepts.
 - The least human knowledge is of the behavior of the person, and the soul in this domain (source) and other low frequency source domains.
 - Less importance or role of body, organs words, mind, soul, life and death, and mental activity in Arab life because they are used less frequently in conceptualizations.
 - The septenary experiential areas of the present study provide a conceptual basis for expressing religious experiences.
- In the target concepts domain and the metaphors:
 - The power to select the sieve of Islamic culture and pattern from the sources for conceptualization.
 - Determining the framework of Islamic thought by the sieve of Islamic culture by attributing knowledge to the heart, eyes, and ears.
 - In cases of conflict between the physical experience concept and the target concept, reconceptualization takes place.

The monotheistic belief system directs human embodied experiences in metaphorical conceptualization and imbues them with religious coloring, scents, and attractiveness and finally, the Qur'anic worldview/ideology appears as an Islamic cognitive cultural model in the metaphorical schema of the Qur'an.

The importance of the metaphor targets is due to their coherence with Islamic experiences and beliefs in highlighting aspects and characteristics of the sources to create social, ideological and doctrinal realities as conduct for believers to follow. These highlights are used to 'teach' the belief system to the followers of religion and to create a cultural model of 'worship' and Islamic behavior and conduct universally. Based on the research results, the interaction of culture and conceptual metaphor can be shown in Figure 7.

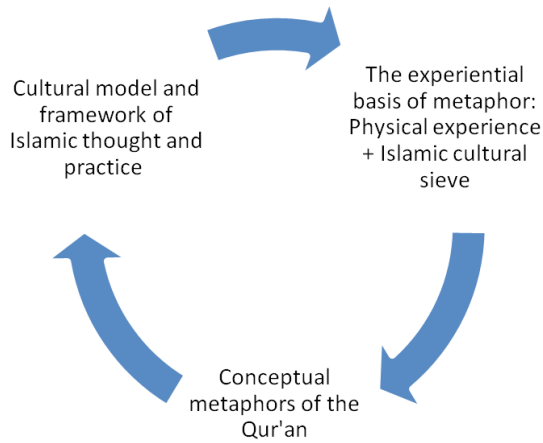


Figure 7. *The interaction of culture and the embodiment of conceptual metaphor in the Qur'an*

6. Conclusion

The present study has been conducted with the aim of extracting and analyzing the target and source concepts in conceptual metaphors in the last eleven parts of the Holy Qur'an. The turning point of the connections and correlations of aspects of the source and target concepts is manifested in a larger way in general concepts. In other words, each source domain is used to conceptualize specific targets. This is shown as a continuum:

- Our tasks, rewards and punishments, situations in the form of '*event structure metaphor*'
- Emotion, morality and thought in the form of '*force*'
- The four relationships of human beings with God, man himself, others, and nature in the form of '*object metaphors*'
- Resemblance-based metaphors for predicting future events-human task and destiny in both worldly and otherworldly life in the form of '*metaphors of life;*' Reports of past episodes of tribes.
- Behavioral and cognitive attributes of human beings in life in metaphors with the source of '*body needs and its activity*'
- Elements of nature in different metaphors for explaining and determining the duties of different participants in human life
- Person based metaphors in event structure (Resurrection) and the concepts of revelation, the Qur'an, the rules, natural phenomena (such as rain), etc. as a factor from God that is conceptualized by mapping the human, behavioral, and voluntary aspects of the person onto targets
- Body organs sources for the purposes of cognition and perception

- In the Qur'anic metaphors, the direct involvement of the Creator of the universe is evident in all stages of life, most Qur'anic metaphors are an extension of conventional metaphors and therefore novel and they have innovations that have not been in any culture and they have created new patterns of behavior.

On this basis, Antunãno's (2013) culture sieve can be considered in line with the results of the present study, which clearly identifies the sources for us and well shows the concepts and cognitive and cultural patterns of the Qur'an with their characteristics. These are on the one hand specific to the Qur'an and on the other hand are 'universal' and are applicable to all human beings, which is a confirmation of Ma'refat's view (2007).

From the point of view of cognitive linguistics, there is the 'semantic development' of metaphor (Evans & Green, 2006, 38) with the maximum use of all linguistic possibilities, parts of speech (adposition, noun, adjective, verb, and adverb) as well as syntax (types of phrases) that has led to new meanings in the Qur'an.

The concepts of 'causality,' 'generic' and 'specific' are abundantly observed in the source and target of Qur'anic metaphors. In these metaphors, 'life' is the most widely used target and source concept, and the relationship between source and target is part-whole (journey is a part of life), and another widely used concept is '*object* metaphors.'

- This reflects the fact that most human knowledge is of the source concepts of life and the characteristics of '*object*' schema; and the least knowledge is of the source concepts of 'soul' to conceptualize 'revelation and the Qur'an,' and of the human attributes of 'person' to conceptualize 'death,' and of the source concept of 'death' to conceptualize 'fear,' 'curse' and 'dryness.' The results indicate the appropriateness of sources and targets. In the *journey* metaphor, verbs of motion and destination express 'goal-orientation' (Charteris-Black, 2004, 74, quoted in El-Sharif, 2011, 127). In this journey, 'people have the freedom to choose the path of their religious life, but they must accept the consequences of their choices' (El-Sharif, 2011, 127).
- Many Qur'anic metaphors (especially metaphors of actions and organs of the body) are derived from the interaction of metonymy, schema, and metaphor (metaphorical mapping), and mostly schemas have transformations and co-occurrences and are not understood separately.
- According to Izutsu (1981), the religious and moral concepts of Islam [and consequently the metaphorical concepts of the Qur'an] "are by no means completely separate from each other but are closely related to each other, and this is due to the fact that the Qur'anic worldview is essentially a 'God-centered' worldview." The most important point in all types of metaphors is "the division of religious and moral concepts into positive and

negative poles" (Izutsu, 1981, 19) and as a result it is possible to 'evaluate' the concepts. "Metaphors tend to convey summarizing, emotional and evaluative aspects of cognition" (Kimmel, 2010, 110).

- As research data have shown, the most frequent mappings and target concepts of 'life' and *object* metaphors are in the form of 'event structure' metaphor. Other Schema-based 'containment' and 'space' metaphors are next in the rank. Applications of these metaphors and metaphors of other domains, in addition to teaching lifestyle, are also used in human behavioral and cognitive patterns. The relationship between concepts is also seen in the use of metaphors due to the God-centered worldview that leads to their evaluation.

Based on this and by determining the target domain concepts and their experiential nature, cognitive and cultural explanations can be obtained in the metaphors used in the Holy Qur'an, and one can acquire the necessary ground for more and better understanding of the worldview presented in the Holy Qur'an in order to provide more efficient interpretations of the Qur'an, and from this, one can achieve a better identification of the behavioral patterns of religion.

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The Authority of Intellect and its Function from the Perspective of the Holy Qur'an

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ABSTRACT:

Original Paper

The Holy Qur'an introduces the concept of intellect as an instrument for thinking and recognizing the facts and in several verses with different expressions, insists on activating the intellect by human. In order to convey this issue precisely and deeply to the audience, The Qur'an has used many synonymous and close concept to intellect, such as tafakur (thinking), qalb (heart), lubb (heart of the matter), nuhā (understanding), hijr (evidence), hilm (reason) and fiqh (realization). The authority of the intellect in recognizing facts has been confirmed in the Qur'an and Islamic traditions. One of the most important subject matters that should be identified by the intellect is the domain of beliefs and theology, which also leads to the perception of the prophetic mission and resurrection. Another issue perceived by the intellect is the realm of recognizing moral virtues. According to several verses and traditions, human intellect can discern good and evil, regardless of religious teachings, although some Islamic sects do not believe in this. It can be said that the power of intellect in human is like an intrinsic prophet whose discernment is authoritative and in agreement with the guidance of the prophets. Thus, from the Qur'an's point of view, the realm of intellect in knowing facts is a vast scope which comprises various subjects such as theology, ontology, anthropology and ethics.

KEYWORDS: The Qur'an and intellect, Authority of Intellect, recognizing the facts, identifying the beliefs, discernment of moral virtues.

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I. Introduction

One of the human characteristics enabling him/her to know the unknown is the power of intellect and thought. The word intellect (*'aql*) is not attested in the Qur'an in an infinitive form but its verbal derivatives have been employed in the Qur'an verses with forms like *na'qilu*, *ta'qilun*, *'aqaluhu*, and *ya'qilun* about 50 times.

In these verses, assuming the concept of intellect as an instrument for thinking and learning about the facts, the holy Qur'an has mostly insisted on activating the intellect, i.e., reasoning (*ta'qqul*). Mentioning thus the wonders of the world of being, it considers them as signs for those who employ their intellect. For example, it is stated in verse (Q.2:164),

“Behold! In the creation of the heavens and the earth, in the alternation of the night and the day, in the sailing of the ships through the ocean for the profit of mankind, in the rain which Allah sends down from the skies, and the life which He gives therewith to an earth that is dead, in the beasts of all kinds that He scatters through the earth, in the change of the winds and the clouds which they trail like their slaves between the sky and the earth (here) indeed are signs for a people that are wise.”

For this very reason, the Qur'an has compared those who have deprived themselves from thinking with animals (Q.8:22):

For the worst of beasts in the sight of Allah are the deaf and the dumb, those who understand not. It announces the result of negligence in applying the intellect to know the facts as ill-fated destiny and arrival into the hell (Q.67:10): They will further say: Had we but listened or used our intelligence, we should not now be among the companions of the blazing fire.

2. Synonyms of Intellect and Related Concepts

Another theme which reveals the position of the intellect in the Qur'an is to pay attention to the synonyms and related concepts with intellect which has a broad and prevailing application in the Qur'an verses.

Some of the most important of these words are:

- Thought (*Fikr*) and Thinking (*Tafakur*):

Then to eat of all the produce of the earth and follow the ways of thy Lord made smooth, there issues from within their bodies a drink of varying colors wherein is healing for men, verily in this is a sign for those give thought (Q.16:69).

- Heart (*Qalb*):
There will be for them therein all that they wish and there is more with us (Q.50:35).
- Heart of the Matter (*Lubb*, singular form of *Albāb*):
Behold, in the creation of the heavens and the earth and the alternation of night and day, there are indeed signs for men of understating (Q.3:190).
- Understanding (*Nuhā*):
Eat for yourselves and pasture your cattle, verily in this are signs for men endowed with understanding (Q.20:54).
- Evidence (*Hijr*):
Is there not in these an adjuration or evidence for those who understand (Q.89:5).
- Reason (*Hilm*, singular form of *Ahlām*):
Does their reason tell them to say this or is it because they are a rebellious people?(Q.52:32)
- Realization (*Fiqh*):
Many are the Jinns and men we have made for Hell: they have hearts wherewith they understand not, eyes wherewith they see not and ears wherewith they hear not. They are like cattle, nay more misguided for they are heedless of warning (Q.7:179).

The symmetrical meaning of these terms with the term ‘intellect’ could be seen in the works by these scholars: Ibn Manẓūr (1989, 1:685), Ibn Fāris (1969, 5:17), Ibn Athīr (1985, 1:433), al-Qummī (1983, 2:419), al-Jawharī (1986, 2:138). The other point in knowing the meaning and the truth of the intellect is paying attention to the antonyms.

The most important antonym to intellect is ignorance (*jahl*), a term widely attested the verses and traditions and for this reason, al-Kulaynī has started his work entitled “The Book of *al-Kāfi* (The Sufficient Book)” with a chapter devoted to Intellect and Ignorance and thereby, he narrates traditions from the religious leaders to show the contradiction of intellect and ignorance.

One of these traditions, is a speech from Imam al-Riḍā (AS) who has stated, *Everyone’s friend is his intellect and his enemy is his ignorance* (al-Kulaynī, 1984, 1:11). It can be said in the contrast of intellect and ignorance that intellect becomes closer to the meaning of knowledge and

those who exhibit the power of intellect in themselves, they are captivated in the bush of ignorance. So, Joseph (Yūsuf) describes his brothers while kidnapping him and throwing him into the well as ignorant: *He said, are you aware of what you did with Joseph and his brother, when you were ignorant?* (Q.12:89).

In some verses and traditions, intellect has been used the opposite of stupidity, for instance those who were disclaiming the religion of Abraham which in the interoperation of the Qur'an have been termed as foolish: *And who turns away from the religion of Abraham but such as debase their souls with folly? Him we chose and rendered pure in this world and he will be in the Hereafter in the ranks of the righteous* (Q.2:130).

In a wise statement, Imam 'Alī (AS) states: *Intellect is a source of proximity to God and stupidity is a source of distance from Him* (Āmidī, 2001, 111).

The last point in this part is that intellect in the Islamic teachings is relative, in that it falls within the two ends of the spectrum. It is such that some of the humans have been depicted as people in lack of intellect and in contrast, some others have been regarded as the wisest of people. Features such as fear of God, being submitted to the divine commandments, avoiding committing sins, tolerance in dealing with people, awareness of one's faults, and adopting silence are the signs of wisdom to the extent that when an individual becomes skilled with these features, he will enjoy a position higher than intellect and wisdom (Āmidī, 2001, nos. 960-976).

3. Authority of the Intellect in Verses and Traditions

The holy Qur'an has been sent down to guide the human and all people are thus addressed by the Qur'an:

Ramadan is the month in which We sent down the Qur'an, as a guide to mankind, also clear signs for guidance and judgment between right and wrong, so every one of you who is present at his home, during that month, should spent it in fasting. But if anyone is ill, or on a journey, the prescribed period should be made up by days later. Allah intends every facility for you. He does not want to put you to difficulties. (He wants you) to complete the prescribed period and to glorify Him. In that He has guided you and perchance ye shall be grateful (Q.2:185).

But it is clear that the wise and the reasonable grasp the messages of the Qur'an faster than others. So, concerning the understanding of the wise

about the facts of the universe, the holy Qur'an states:

Behold, in the creation of the heavens and the earth and the alternation of night and day, there are indeed signs for men of understating (Q.3:190).

In the same manner, in various verses, the Qur'an invites people to pay attention to the existing wonders in the universe – including heavens and the earth and even the existence of human (e.g. 51:20-22, 41:5, 88:17-20, 16:69). Further, the Qur'an rebukes those who have accepted the beliefs based only upon imitation of their fathers, rather than employing their own intellect and wisdom to learn about the facts (Tabataba'i, 1982, 1:420). It states,

And when it is said to them, "Follow what God has sent down," they say, "No, but we will follow such things as we found our fathers doing." What? And if their fathers had no understanding of anything, and if they were not guided? The likeness of those who disbelieve is as the likeness of one who shouts to that which hears nothing, save a call and a cry (a beast) deaf, dumb, blind they do not understand (Q.2:170-171).

According to some of the verses, human can attain the knowledge of facts through two methods: One is to listen to the prophets' and the counsels and guidance of the wise, and the other is to use his own intellect and understanding in learning about the universe and its wonders. Failing to follow these two courses, he will be like animals and will regret in the Hereafter. The infidels are quoted as saying,

They will further say: Had we but listened or used our intelligence, we should not (now) be among the companions of the blazing fire. They will then confess their sins: But far from Allah's mercies are the companions of the blazing fire (Q.67:10-11).

The result of all the verses which were present is that intellect in human existence is a reliable instrument whereby facts may be learned. The Qur'an recognizes the result of human intellect, since the Qur'an invites human to turn towards employing the intellect and think, but the result of his intellect and thought is lack of access to facts which will be of no avail. *The Qur'an is wise (Q.36:1) and it is a book which has been sent down by the wise God (Q.46:2).* With such Qur'anic confirmation of the intellect and reasoning, the intellect in the human existence is converted into evidence, by which human will be questioned on the day of resurrection about his failure to employing his intellect, rather for his obeying his passions and lusts. The holy Qur'an says,

Many are the Jinns and men we have made for Hell. They have hearts wherewith they understand not, eyes wherewith they see not, and ears wherewith they hear not. They are like cattle – nay more misguided for they are heedless of warning (Q.7:179).

Apart from the verses by which the authority of intellect is easily understandable, among the Islamic traditions, there is a unique tradition on the authority of the intellect by the Seventh Imam. In this long tradition which has been included by Muḥammad ibn Ya‘qūb al-Kulaynī in the book of “The Intellect and the Ignorance,” with a reference to the Qur’an verses about intellect, its significance and function in human existence has been discussed.

In a part of the tradition, the Imam announces the philosophy of appointment of the prophets (PBUH) to nurture human intellect.¹ More knowledgeable Individuals will be the best people responding to the call and mission of the prophets and will acquire the highest degrees in the world and Hereafter proportional to their intellect and wisdom (al-Kulaynī, 1984, 1:16). However, the most important phrase of Imam al-Kāzīm’s (AS) tradition is:

God had put two authorities for every human: an apparent authority (outside his being) and Inner authority (inside him), the apparent authority includes the prophets and Imams and the inner authority is the peoples’ intellects (ibid.).

There is a similar tradition from Imam al-Riḍā (AS), when Ibn al-Sikkīt, asks him, “What authority does exist for people today?” the Imam states,

The authority of intellect, because it is in the light of intellect that one who assumes truthfulness towards God and believes in Him is distinguished from one who assumes falsehood towards God and denies Him. Ibn al-Sikkīt says, “By God that this response is true” (al-Ṭabrisī, 1989, 2:433).

4. *The Role of Intellect in Knowing the Facts*

Referring to the verses of the Qur’an and Islamic traditions, the role of intellect and its function in learning about the facts is clarified. The facts which are the subject-matters of knowing the intellect have various branches and diversities of which their main three themes are pointed out below.

1. That is, according to the interpretation of ‘Alī (AS) in *Nahj al-Balāghah* which announces the prophetic mission as “One of the objectives of the prophetic mission was to free the treasures of reason from superstitious” (Sayyid al-Raḍī, 2005, 1st Sermon).

4.1. *The Role of Intellect in Acquiring the Cognition of Beliefs*

The most important field of acquiring the cognition of the facts is the domain of human beliefs and issues which are related to his philosophy of creation, in this domain, theology, ontology in the philosophical sense, perception of the prophetic mission and eschatology exist. Understanding this matter that the universe has a creator and that creator has created the universe based on wisdom and grace and the universe has a course and motion to attain one day to its ultimate location and resurrection, all and all are within the domain of rational cognition (for a detailed discussion, see Sobhani, 2004, 3:299).

According to the verses of the holy Qur'an, theology lies in human innate nature as well as in the material life. Human beings sometimes happen to be forgetful and they sometimes incline towards imaginative idols. It is in these cases that by addressing the recipient of the message, the Qur'an invites them to form a rational judgment,

Then is He who creates like one who does not create? So will you not be reminded? (Q.16:17)

And elsewhere,

Or were they created by nothing, or were they the creators [of themselves]? (Q.52:35)

The first phrase refers to the causality rule and that no phenomenon can be without any cause and the second phrase is referring to the circle and that self-creation results in a vicious circle (Sobhani, 2004, 3:300). Theology in the prophetic missions has also been associated with using the rational reasoning of which one sample is Abraham's monotheism. In facing his tribe, he announced that the setting of stars, the moon and the sun would be the signs of instability and weakness in an object of worship; consequently, he directed his attention towards God who is the creator of heavens and the earth. In confronting with idolatry, he attacked idols by an ax and destroyed them but he left aside the big idol as the annihilators of other idols to make people understand that idols are not able to create profit or damage.

In a debate with Nimrod, asking him to make the sun shine from the west instead of the east, he astonished him in bewilderment (for details see, 6:74-79, 2:258, 21:58-66).

Here a question might arise and that is with regard to the cognition of God through the introduction made by the prophets – what is the role of

intellect in the cognition of the God? Are narrative teachings the bases for acquiring the cognition of beliefs? In response, it can be said that prophets by their prophetic missions and through their miracles have proved their truthfulness and present their teachings to the public. In other words, presenting miracles is the proof for truthfulness of the prophets. But what has been the cause for understanding a miracle as something different from things like magic and magic tricks? Is there any other force apart from the power of intellect to be able to understand the miracle and consequently the truthfulness of the prophets?

Thus, the role of intellect in cognition of beliefs becomes clear. If theology is at the top of the beliefs obtained through rational reasoning, it is possible to consider the perception of other beliefs such as the cognition of the prophet, Imam, and eschatology.

4.2. The Role of Intellect in Acquiring the Cognition of Entity and Nature

There are many verses in the Qur'an encouraging people to think and contemplate on the wonders existing in nature and even human organs. Instances include:

And on the earth are signs for the certain [in faith], And in yourselves. Then will you not see? (Q.51:20-21).

The phrase *then will you not see* is to see with the eye of human's heart and being which is in fact the same rational attitude. From the perspective of the Qur'an, the whole universe is full of the signs of divine omnipotence, e.g.,

And how many a sign within the heavens and earth do they pass over while they, there from, are turning away (Q.12:105).

The method of the Qur'an is to name one or many phenomena on certain occasions and announces that there are signs in these phenomena for the wise. The phenomena about which the Qur'an invites the wise to think include the following:

Creation of heavens and the earth; succession of day and night; movement of ships in the seas; rain generating clouds; winds blowing; raining; revival of nature; germination of flowers and plants; honey bees and their location finding on the heights and producing honey; creation of human and wonders of the creatures in the creation of human, such as various colors and languages (for details, see 2:164, 16:69; 30:20-27, 3:190).

The Qur'anic phrases such as *"Most surely there are signs in this for people who ponder"* or *"Most surely there are signs in this for people who*

reflect” show this reality that by rational thinking about the phenomena of the universe, in addition to access the laws of nature, it is possible to grasp the divine power in the creation of the phenomena and that the world of creation has not been created by accident and in vain.

4.3. *The Role of Intellect in Understanding Ethics and Its Standards*

Another them that falls, from the viewpoint of the Qur'an, within the realm of cognition of the intellect is ethics and its standards. From the Qur'anic perspective, drawing a distinction between the good and evil and distinguishing virtues from vices have been inherently entrusted in human beings. The Qur'an states,

And [by] the soul and He who proportioned it, and inspired it [with discernment of] its wickedness and its righteousness (Q.91:7-8).

Thus, human intellect, irrespective of religious laws and teachings, is able to know the good and bad and, in general, virtues and vices. *And have shown him the two ways?* (Q.90:10) means the two ways of good and evil. This Qur'anic concept was then discussed by Muslim theologians under the topic of “rational goodness and badness.” Some traditionists (*ahl al-hadith*) and Ash'aris considered the denial of competency of intellect in the domain of ethics and distinguish between good and evil, but in contrast, Mu'tazilis and Twelver Shi'is, while confirming the competency of intellect, believe in the rational good and evil (Hasani, 1990, 263).

This means that human intellect can distinguish virtues from vices. In other words, the human intellect considers qualities such as justice, righteousness, staying true to one's word, cooperation with others as affairs being favorable innately and recognizes them as virtues and the religious decree is nothing but confirmation and reinforcement of the rational decree in the domain of ethical issues. This is reflected in verses such as:

Indeed, Allah orders justice and good conduct and giving to relatives and forbids immorality and bad conduct and oppression. He admonishes you that perhaps you will be reminded (Q.16:90).

The command of the Qur'an is to observe the ethical issues and distance from the vices is nothing but emphasizing and innate and rational understanding of human virtues.

Another point is that ethics, in the view of the scientist and scholars, is divided into two theoretical ethics and practical ethics. Theoretical ethics means knowledge about ethical standards and attributes including good

and evil, virtues and vices, and by practical ethics obligation to observe the ethical virtues and distancing from the vices are intended. As intellect has necessary capabilities to distinguish virtues from vices, the decree of intellect, as the inner prophet of human, is to encourage human to observe ethical measures and distance from vices. In other words, the practical ethics in the human character relies upon the command of the practical intellect (For details, see Javadi Amoli, 2008, 44 & 68).

This is the same matter which has been pointed out in the tradition of Imam al-Şādiq (AS) as the definition of intellect: *Intellect is the same power, in light of which, the beneficent God is worshipped and the divine paradise is achieved* (al-Kulaynī, 1984, 1:11).

Finally, it is worth noting that with all competencies and capabilities which is provided for the intellect from the perspective of the Qur'an, the human intellect has certain limits and shortcomings which has not been discussed in this paper. Acquiring cognition and knowledge about the essence of the divine attributes, legislation of religious decrees, understanding the details of the religion and the philosophy of some of the commandments are among the matters which are not within the realm of human intellect, but human accepts them obediently in light of faith in God of the universe (for a detailed discussion on the limits of intellect, see Asef Agah, 2012, 188-195; Javadi Amoli, 2008, 56: Perceptual Restrictions of the Intellect in the Domain of Religion).

5. Conclusion

Reasoning, i.e., employing the intellect and its power in learning the facts of the universe has an important position in the Qur'anic verses.

In the Qur'anic verses and Islamic traditions, the power of intellect in human is like an inner prophet and the decrees and judgments of the intellect are thus valid and authoritative in agreement with the prophets' and Imams' guidance.

The realm of intellect in learning the facts is a vast one that encompasses an array of disciplines such as theology, ontology, anthropology, and ethics, i.e., to distinguish virtues from vices. The practical intellect also directs human to act upon virtues and stay away from vices.

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Rethinking the Word *Farāḍa*: An Inquiry to the Earliest Commentaries and Its Contextual Relevance

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ABSTRACT:

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Some exegetic comments narrated from early scholars do not relate neither to the Quranic context, nor to lexicographical and linguistic evidences. As a case, such irrelevance can be observed for the verb *farāḍa* in the verse (Q.24:1), as well as the verse (Q.28:85). Regarding methodology, this research used both traditional lexicographical and linguistic etymological inquiries. The result of the research is the fact that both verses are speaking of the philosophy of the Quranic surahs being revealed gradually in separate parts appropriate to social occasions and the challenges in prophetic era.

KEYWORDS: Quranic context, Quranic surahs, causes of revelation, gradual revelation, Semitic etymology.

1. Introduction

Certain verses of the Holy Qur'an seem to have a kind of opacity for early commentators; an opacity, which made those verses a subject of debate for a period. Following the early Islamic times to the time of classic exegeses, everything seems to be clear and nobody is concerned about early debates.

The present author is not insisting on any belief that the so-called early commentaries belong to specified known authors or written in some specified time. Methodologically, the departure point of the present

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study is the fact that we approach the time span of exegetic literature quoted by authors of early reliable exegetic works like *Jāmi' al-Bayān* of al-Ṭabarī or resources in other disciplines written from the second half of 3rd / 9th century. Such early commentaries are sometimes attributed to companions of the Holy Prophet, namely Ibn 'Abbās, sometimes to the following generation, termed *Tābi'īs*, and even sometimes to transmitters in further generations until the middle of the 3rd / 9th century.

As case study in this article, I focus on the verb *farada* in two verses: the verse (Q.24:1), which says,

سُورَةٌ أَنْزَلْنَاهَا وَفَرَضْنَاهَا وَأَنْزَلْنَا فِيهَا آيَاتٍ بَيِّنَاتٍ لَعَلَّكُمْ تَذَكَّرُونَ (النور/1)

A surah which we have sent down and which we have ordained in it have we sent down Clear Signs, in order that ye may receive admonition.

The other Verse (Q.28:85) says,

إِنَّ الَّذِي فَرَضَ عَلَيْكَ الْقُرْآنَ لَرَادُّكَ إِلَىٰ مَعَادٍ قُلْ رَبِّي أَعْلَمُ مَنْ جَاءَ بِالْهُدَىٰ وَمَنْ هُوَ فِي ضَلَالٍ مُّبِينٍ (القصص/85)

Verily He Who ordained the Qur'an for thee, will bring thee back to the place of return. Say, 'My Lord knows best who it is that brings true guidance, and who is in manifest error'.

In spite of the clear meaning of this translation, there is apparently a great controversy around the meaning of the verb in question in the two verses in both Qur'anic commentaries and translations. Although the verb *farada* is used in the Holy Qur'an several times, but my focus is restricted to these two verses, since they share an ambiguity regarding these usages, an ambiguity that makes it suitable as a case for conducting the core question of research.

The main question of research is about the fact that the commentators had faced with two choices: 1. Rendering the semantic content of *farada* to meanings not supported by Arabic lexicography; 2. Rendering it to the usual terminological meaning, i.e., 'to ordain decrees' which is not supported by grammar. In this research, I want to show that the problem arises from forgetting the main language and context of the Holy Qur'an, even for commentators who are expected to be the earliest.

Regarding methodology, at first the exegetic opinions are classified on the basis of an analytic typology and then, these opinions are criticized using a combination of traditional lexicography, as well as historical linguistics and etymology.

2. The Verse (Q.24:1) in Early Commentaries

Before beginning the investigation of the commentaries, it is worthy to mention that the word *faraḍnāhā*¹ in the verse is recited in two forms:

- Some recited it with gemination on /r/, as *farrāḍnāhā*, which is narrated of Ibn Kathīr and Abū 'Amr ibn 'Alā', famous reciters of Mecca and Basra, as well as Mujāhid, the famous *Tābi'ī* of Mecca.
- The recitation without gemination as *faraḍnāhā* is preferred by the majority. This majority includes the other seven reciters (*al-Qurrā' al-Sab'a*) as well as some companions like Ibn Mas'ūd and 'Ā'isha, some *Tābi'īs* such as Abū 'Abd al-Rahmān al-Sulamī, 'Ikrima Mawlā ibn 'Abbās and some scholars of further generations including Ḍaḥḥāk ibn Muzāḥim, Ibn Shihāb al-Zuhrī, Abū Ja'far al-Madanī, Abū Ya'mur, Sulaymān al-A'mash and Ibn Abī 'Abla.

Both forms are attributed to Ḥasan al-Baṣrī (Abū Dāwūd, 1950, 4:38; Abū 'Amr al-Dānī, 1930, 161; al-Tha'labī, 2002, 7:63; Ibn al-Jawzī, 1984, 3:27).

A review on the earliest comments concerning the word *faraḍnāhā* shows that there was a serious ambiguity concerning them too as reflected in the following two groups of commentaries:

Group A. According to the opinion attributed to the companion Ibn 'Abbās narrated by Abū Ṣāliḥ the meaning is the following:

فَرَضْنَاهَا (أَي) بَيَّنَّاهَا

(al-Ṭabarī, 1985, 18:66).

The opinion attributed to the same companion narrated by Mujāhid also explains the word as the following:

وَفَرَضْنَاهَا، قَالَ: وَوَبَيَّنَّاهَا

(Ibn Abī Ḥātim, 1999, 8:2516).

In both quotations of Ibn 'Abbās the meaning of the verb *faraḍa* was considered equivalent to the well-known verb in Qur'anic Arabic *bayyana*; the verb which is normally understood as 'to make clear, to explain' (Hana, 1899, 51).

For Mujāhid himself, we know that he recited the word in question with gemination, but we have no evidence to generalize this geminated recitation to his quotation of Ibn 'Abbās and the parallel quotation in

1. فرضناها

this group. Anyway, some scholars in later centuries announced that such commentary is appropriate to the geminated recitation (al-Zajjāj, 1988, 4:27; al-Azharī, 2001, 12:12; Ibn Abī Zamanīn, 2002, 3:217; al-Tha‘labī, 2002, 7:63). This meaning which we call afterwards Ibn ‘Abbās’ comment is repeated in the narrations of *Tābi‘īs* and their disciples such as Qatāda of Basra [d. 118/736] (al-Nahhās, 1989, 4:493) and Muqātil ibn Sulaymān [d. 150/767] (Muqātil, 2003, 2:497).

As a criticism, I should say that there is no evidence for the root *f-r-d* to denote ‘to become clear’ neither in classical Arabic lexicography, nor in modern Semitic etymologies. This comment is repeated as one of the options by some later scholars without any amendment and justification (Ibn Qutayba, 2002, 364; Abū Ishāq al-Shīrāzī, 1983, 95) and was the basis for the very famous Samanid canonical translation of Qur’an in Persian of 4th/10th century (*Tarjuma-yi Tafsīr-i Ṭabarī*, 1977, 5:1110). Just Ibn Abī Zamanīn [d. 399/1008] pointed out that this commentary is appropriate for the recitation of the word with gemination (Ibn Abī Zamanīn, 2002, 3:217).

Some commentators and other scholars from the 3rd/9th century afterwards used the keyword *bayyannā*, borrowed from Ibn ‘Abbās’ comment, but its content was altered by group C (al-Tustarī, 2002, 111; al-Zajjāj, 1988, 4:27; al-Azharī, 2001, 12:12; al-Qushayrī, 2000, 2:354).

Group B. According to the opinion attributed to the reciter and scholar of Basra, Abū ‘Amr ibn ‘Alā’ [d. 154/771] the meaning is as follows:

فَرَضْنَاهَا (أَي) فَصَّلْنَاهَا

(al-Nahhās, 1989, 4:493; idem, 1988, 3:127).

This comment renders the meaning of *farada* to ‘making separation between things.’ We definitely know that Abū ‘Amr recited the word in question with gemination. This meaning will be termed below ‘Abū ‘Amr’s comment.’ Some scholars in later centuries stated that this commentary is in agreement with the geminated recitation (al-Zajjāj, 1988, 4:27; al-Azharī, 2001, 12:12; al-Tha‘labī, 2002, 7:63; Makkī, 2008, 8:5014).

From a critical standpoint, it should be mentioned that the clearest usage of *faṣṣala* can be detected in the verse (Q.41:44) which shows a strong concern with the issue of language and being the Qur’an in a clearly understandable Arabic, rather than a foreign language. This meaning does not seem to be relevant to the word in question in the verse (Q.24:1). In practice, this comment is not supported by later exegetes and in the rare cases of its repeating in further exegetic literature, it just reduced to the word *faṣṣala* referring to the content of the group C (For example,

see: al-Zajjāj, 1988, 4:27; al-Azhārī, 2001, 12:12; Ibn al-Jawzī, 1984, 3:275). Also, it is rarely included in some ancient Persian translation as an option besides other groups of comments, as its translation to 'باز گشادیم' in Maybudī's exegesis (1992, 6:479). A blending of Ibn 'Abbās' comment and that of Abū 'Amr is traceable in al-Tha'labī's exegesis (2002, 7:63).

As said in the introduction, besides these two groups of commentaries, there is another line that would be studied in the following parts of the article; line of comments which renders the word in question to the meaning 'to ordain a decree.'

3. *The Verse (Q.28:85) in Early Commentaries*

Like what mentioned about the verse (Q.24:1), concerning this verse too we come across two groups of earliest commentaries:

Group A. According to the opinion attributed to Ibn 'Abbās narrated by Abū Šāliḥ, the verb *farāḍa* here means 'to send down' (*Tanwīr al-Miqbās*, 416). The serious criticism is based on the fact that there is no basis for such an interpretation in Arabic lexicography and it is just an arbitrary idea of exegetic authorities. Meanwhile, this comment gained the largest agreement in later sources and is approved by some influential exegetes of the 2nd/8th and 3rd/9th centuries (Yaḥyā ibn Sallām, 2004, 2:613; al-Farrā', 1980, 2:33; Abū 'Ubayda, 1962, 2:112). From the next century to the present, it has always remained as the later agreed upon comment, as it is announced by some exegetes. In the 4th/10th century, we see its influence on the Samanid canonical translation in Persian (*Tarjuma-yi Tafṣīr-e Ṭabarī*, 2:366) and in the 5th/11th century, al-Tha'labī announced it as a preference of most of the exegetes (al-Tha'labī, 2002, 7:266).

Group B. According to the opinion attributed to Mujāhid, the Meccan *Tābi'i*, the word *farāḍa* in this verse means 'to give' (Mujāhid, 1976, 2:491; al-Ṭabarī, 1985, 20:123; Ibn Abī Ḥātim, 1999, 9:3025). Concerning this comment too, I can repeat the same criticism that it is not supported by any lexicographical evidence and it seems to be a rough assimilation between giving portion of heritage to the heirs and giving the Qur'an to the Holy Prophet. Among further figures, some like al-Ṭabarī who prefer this comment is rare (al-Ṭaḥāwī, 1987, 14:274) and sometimes it is referred to as one in the list of old proposed comments (al-Māwardī, 2007, 4:274).

As mentioned about the previous verse, here too there is another line narrated from early commentaries, which renders the word to the meaning 'to make a decree'; a line that would be studied in continuation. Although

some lexicographers give the equivalents like *hiba* and *hadiya* for *farḍ* as a noun (al-Khalīl, 1982, 7:28; Ibn Durayd, 1926, 2:365; Abū ‘Umar al-Zāhid, 1984, 112; al-Azharī, 2001, 12:13), but grammatically it should be considered that such a meaning is just approved for the nominal form of the root. Further, the reported meaning is restricted to ‘giving a gift’ and there is no evidence in the Holy Qur’an to call the Qur’an as a gift to the Holy Prophet. Finally, there is no etymological evidence supporting such a meaning for the root and the appearance of this meaning in the Arabic lexicography may be linguistically doubted.

Here, it must be added that in the 4th/10th century, we come across two new proposals about the meaning of *farāḍa* in this verse as an invention which shows no trace in earliest commentaries. The first one is suggested by the Persian mystic Ibn ‘Atā’ [d. 309/921] who arbitrarily interprets the meaning of *farāḍa* with the verb ‘to make easy’ (*yassara*) without any support (al-Sulamī, 2001, 2:112).

The second inventory is that of Ibn Baḥr, seemingly Abū Muslim al-Iṣfahānī [d. 322/934], the famous Mu‘tazili exegete. Inspired by Ibn ‘Abbās’ comment on the verse (Q.24:1), i.e., rendering the meaning of *farāḍa* to the verb *bayyana*, he proposed the same meaning in the verse (Q.28:85). Previously, I discussed this comment as unattested in lexicographical sources. At any rate, the suggestion has not received any acceptance by other exegetes.

As a result, we realize that none of the comments proposed for both verses may be substantiated by traditional Arabic lexicography other than the meaning of ‘to make a decree’ which will be studied in following section.

4. *Farḍ Denoting ‘Make a Decree’*

For people familiar with Islamic jurisprudential terms, the first outgoing meaning understood of the root *f-r-ḍ* is ‘to ordain a decree.’ In fact, using this root, the divine obligations ordained to the people are usually called *farīḍa*. Indeed, commentators of the Qur’an expectedly render the mentioned root in both verses in question to this terminological meaning, although this meaning has roots in pre-Islamic Arabic and other Semitic languages.

There are such commentaries for both verses among narrations from the earliest commentators. Beginning with the verse (Q.24:1), we know such interpretation is attributed to the *Tābi‘īs* of Mecca, Mujāhid [d. 104/722] and ‘Atā’ ibn Abī Rabāḥ [d. 114/732], quoted as saying,

فَرَضْنَاهَا (أي) الأمر بالحلل، والنهي عن الحرام.

We know that Mujāhid recited the word in question with gemination, but there is no evidence to generalize this to all the quotations in this group. The proposed meaning is referred to the root *f-r-d* and can be compatible with both geminated and non-geminated forms. This meaning will be mentioned below as the Meccan Tābi'īs' comment in which *farāda* denotes 'allowed and prohibited deeds,' i.e., divine decrees or prescriptions known as Sharia (for Mujāhid, see: Mujāhid, 1976, 2:436; al-Ṭabarī, 1985, 18:65; Ibn Abī Ḥātim, 1999, 8:2516; for 'Aṭā', see: al-Ṭahāwī, 1987, 14:272). A similar view is narrated from Qatāda of Basra, as his alternative opinion as follows:

فَرَضْنَاهَا (أي) فَرَضَ اللهُ فِيهَا فَرَائِضَهُ، وَأَحْلَ حَالَهُ، وَحَرَّمَ حَرَامَهُ، وَأَمَرَ بِطَاعَتِهِ، وَنَهَى عَنِ مَعْصِيَتِهِ (Ibn Abī Ḥātim, 1999, 8:2516).

The Meccan Tābi'īs' comment is supported by the recitation of Sulaymān al-A'mash [d. 148/765] of Kufa who reads the verse with an insertion as follows:

سورة أنزلناها و فرضناها لكم

(Ibn 'Aṭiyya, 1993, 4:160).

That is, *a surah, which we have revealed and prescribed to you.*

In addition, we can trace the inspiration of this comment in a passage quoted of Ibn Zayd, seemingly 'Abd al-Rahmān ibn Zayd [d. 182/798] (al-Ṭabarī, 1985, 18:66) and in *al-Kitāb* of Sibawayh (1966, 1:143). A blending of these two comments is attested in a revised version of Abū Ṣāliḥ's *Tafsīr*, known under the title *Tanwīr al-Miqbās*:

فَرَضْنَاهَا، (أي) بَيَّنَّا فِيهَا الْحَلَالَ وَالْحَرَامَ

(*Tanwīr al-Miqbās*, 367).

Also, A blending of all the three groups is traceable in Maybudī's translation (compiled in 520/1126):

سورتی است این که فرو فرستادیم آن را و واجب کردیم حکمها که در آن است و باز گشادیم و پیدا کردیم آن را و فرو فرستادیم در آن سخنها و پیغامهای پیدای روشن (Maybudī, 1992, 6:479).

Some additions from the 3rd/9th century and later commentators based on this commentary merely focused on the semantic nuances between recitation with and without gemination (al-Farrā‘, 1980, 3:127; Abū ‘Ubayda, 1962, 2:63; al-Zajjāj, 1988, 4:27).

Shifting to the verse (Q.28:85), a similar position is narrated from the early Meccan *Tāb ‘i*, ‘Aṭā’ ibn Abī Rabāḥ:

فَرَضَ عَلَيْكَ الْكِتَابَ، (أَي) فَرَضَ عَلَيْكَ الْعَمَلَ بِالْقُرْآنِ.

(al-Tha‘labī, 2002, 7:266; al-Baghawī, 1987, 3:458).

In this commentary, ‘Aṭā’ assumes the meaning of ‘deed according to Qur’an’ as the main object of the verb *farada* from which *al-‘amal bi-* is dropped out since it clearly implies the sense in the context. Although this interpretation seems to be mainly supported lexicographically, but there are serious syntactical problems involved here. We know that *farada* in jurisprudential usage denotes ‘to make a decree, to decree a thing or rule, to command an observance, to ratify a treaty or contract.’ Thus, it would be meaningless to make the Qur’an which is none of the expectable objects for this verb as its object. In fact, the existence of such complexity is what led most of the commentators to seek another meaning for *farada* and escape from the analysis suggested by the Meccan *Tābi‘īs* regarding both verses. The other commentators preferred to step beyond Arabic lexicography and render the Quranic usage to jurisprudential term, besides an imaginative arbitrary syntactic analysis. Meanwhile the comment of ‘Aṭā’ on the verse (Q.28:85) has been accepted by some further exegetes, although in a limited extent (Ibn Qutayba, 1978, 286; Abū Bakr al-Sijistānī, 1990, 355; Abū Bakr al-Naqqāsh, narrated by al-Māwardī, 2007, 4:272).

From the 4th/10th century, some scholars consider that this verse implies an obligation of the Holy Prophet, not all the believers, leaning on the role of the possessive adjective or determiner *-ka*. According to them, the mandate of the Holy Prophet is to recite the Holy Qur’an and promote it (Māturīdī, 2005, 8:204; al-Māwardī, 2007, 4:272; al-Jaṣṣāṣ, 1985, 2:145).

5. Connection of the Two Verses

In this section, I the focus on an early comment on the verse (Q.24:1) which, based on reference and linkage to the Verse (Q.28:85), is a narration by Hārūn ibn Mūsā from Ḥasan al-Baṣrī. In this narration, the commentator used the linked verse directly as commentary for the word in question as the following:

فَرَضْنَاهَا (أَي) فَرَضَ عَلَيْكَ الْقُرْآنَ

(Ibn Abī Ḥātim, 1999, 8:2516).

This linkage had been ignored for a long time until the middle of 4th/10th century while it raised a new wave in this concern. In that period, al-Ṭabarānī [d. 360/971] explained that for those who recite the word in question without gemination, it should be understood under the light of the verse (Q.28:85) and the meaning is imposing the decrees of the Qur'an (al-Ṭabarānī, 2008, 4:392). Among his contemporary exegetes, Abū 'Alī al-Fārisī [d. 377/987] totally agreed with al-Ṭabarānī (al-Ras'anī, 1911, 5:178), while some scholars disagreed.

On the contrary, in *wujūh al-Qur'ān* literature, which investigates the polysemy and semantic differences of the vocabulary in the Qur'an, it is usually repeated and agrees with Ibn 'Abbās' comment regarding both verses. Thus, they insisted on the idea that the root *f-r-d r-d* in the verse (Q.24:1) denotes 'to make clear', while in the verse (Q.28:85) has the meaning of 'to send down' (Muqātil, 2006, 67; Abū Hilāl, 2007, 368; al-Dāmaghānī, 1996, 2:123-124). Even exactly in the period which al-Ṭabarānī and Abū 'Alī al-Fārisī tried to link the meaning of *farāḍa* in the two verses, Ibn Khālawayh [d. 370/980] supported the position of the authors of *wujūh al-Qur'ān* literature by distinguishing between two usages in meaning (Abū 'Umar al-Zāhid, 1984, 112).

In general, we can say that the interpretation of the verse (Q.24:1) in the light of the verse (Q.28:85) did not gain enough support and always remained a marginalized commentary in exegetic literature.

6. A Comparative Linguistic Inquiry

From an etymological point of view, the triconsonantal Arabic root *r-d* plus preformative /F-/ > /P-/. Its historical form is constructed as a common Central Semitic root *R-Ṣ-Ṣ'* meaning 'to break into pieces' (Dolgopolsky, 2008, No. 1967). The cognates in different Semitic languages are as follows:

- Arabic رَضَّ (radḍa): to break a thing coarsely, to contuse (Hana, 1899, 247);
- Hebrew רָצַץ (rāṣaṣ): to press, to oppress;
- Pi. to crush in pieces (Gesenius, 1955, 954);
- Aramaic רָצַץ (rāṣaṣ): to press, to squeeze, to crush (Jastrow, 1903, 2:1495);
- Aramaic רָצַץ (rā'a'): to strike against, to shatter, to impair;
- Pi. to shatter, to break (Jastrow, 1903, 2:1488);
- Syr ܕܚܘܢ (√R''):

Pi. to bruise, to bray, to crush

𐤀𐤐𐤂𐤏𐤁 (etp^era') Itpe. to destroy (Dolgopolsky, 2008, No.1967)

The preformative /F-/ > /P-/ has etymologically a particle meaning 'to dig,' rooted in an Afro-Asiatic stem *pa'-/ *paw-/ *pay-, which denotes 'to dig, to bury' (Orel & Stolbova, 1995, No.1910). Now the resultant meaning of combined form of Arabic *f-r-d* according to Semitic etymology is 'to break into pieces with digging inside something.' Concerning this triconsonantal root too, it is worthy of note to make mention of cognates in Semitic languages as follows:

Arabic فَرَضَ (*farada*): to notch (a wood) (Hana, 1899, 548), to make an incision (Leslau, 1991, 167);

Akkadian (*parāšu*): to breach (Black, 2000, 266);

Hebrew פָּרַץ (*pāraṣ*): to break through, to break into, to break out, to break in pieces (Gesenius, 1955, 829);

Ugaritic *p-r-ṣ*: to breach; opening (Del Olmo & Sanmartín, 2003, 683);

Aramaic פָּרַץ (*pāraṣ*): to break through, to make a breach, to invade (Jastrow, 1903, 2:1237);

Syriac ܦܪܐܬ (*praṭ*): to make an incision (Nakhla, 1986, 198), to break, to divide, to split (Costaz, 2002, 287);

Mandaic *p-r-ṣ*: to make a breach, to break through (Drower & Macuch, 1963, 380);

Geez ፈረጸ (*farāṣa*): to break open, to cut open, to split (Leslau, 1991, 167).

Further, it is important to discuss a parallel root in Semitic languages, which have the same form *R-Ṣ-Ṣ*, but with a different semantic value. Although these two roots may be derived from a common origin in ancient times, but in the Semitic languages they occur as just homonyms. The cognate of this second root are as follows:

Arabic فَرَضَ (*farada*): to impose laws (by God), to prescribe a thing (by man) (Hana, 1899, 548);

Akkadian (*parāšu*): to carry out ritual;

paršu: command (Black, 2000, 266; Gesenius, 1955, 823);

Hebrew פָּרַץ (*pāṣar*): to push, to press (Gesenius, 1955, 823);

Syriac ܦܪܐ (*p^era*):

𐤀𐤐𐤂𐤏𐤁 (etp^era') Etpe. to be punished, to be revenged, to avenge oneself upon (Costaz, 2002, 290);

cf. Syriac ܦܪܐܬ (*pareṭ*): to prescribe a thing (Nakhla, 1986, 198);

Geez ፈረጸ (*farada*): to discern, to judge, *fārd*: judgement (Leslau, 1991, 165).

Among early Arabic lexicographers, Ibn al-‘Arābī [d. 231/846] explicitly mentioned the common origin of these two roots and believed that the root $f-r-d_{(prescribe)}$ is derived from $f-r-d_{(break)}$ (Abū ‘Umar al-Zāhid, 1984, 112; al-Azharī, 2001, 12:13). Further, the suggestion is followed by Ibn Fāris [d. 395/1005], a lexicographer who well-known for his speculations about the origins of the Arabic roots. He too believes that the word *faṛd*, meaning ‘ordinance (of God)’ is derived from $f-r-d$ which means ‘to make an incision’ (Ibn Fāris, 1947, 4:488).

Recently, we can see Leslau also explaining under one entree for the Geez root $f-r-d$ stating that the basic meaning of it is ‘to separate, to distinguish’. Then he claims that the meaning of ‘discern, judge’ is a semantics extension of the basic meaning (Leslau, 1991, 165).

There are two evidences which show that these roots are independent from each other in Arabic and its sister languages. The first is different ways of developments of the Semitic phonemes /š/ in Syriac and Geez. The second evidence is a metathesis occurred in Hebrew for $f-r-d_{(prescribe)}$ while there is no metathesis regarding $f-r-d_{(break)}$. Thus, we can say that even if in ancient times there existed any connection between the two roots, the development of those in Semitic languages had occurred in separate processes. On this basis, for the time of Qur’anic Arabic, the two roots definitely were considered as independent.

As resultant of this discussion and coming back to the main question of the article, we should decide about the two verses in question whether the root applied is $f-r-d_{(break)}$ or $f-r-d_{(prescribe)}$.

7. Evaluation of Earliest Commentaries

Among all the earliest commentaries cited for the two verses in question, as discussed above, some like Ibn ‘Abbās’ comments on 24:1 (*bayyana*) and 28:85 (*‘anzala*), Meccan Tābi‘īs’ comment on 28:85 (*‘a‘tā*) and mystics’ comments on 28:85 (*yassara*) were arbitrary without linguistic support. In fact, none of them includes under the two Semitic roots discussed above, Abū ‘Amr’s comment on 24:1 which may be semantically relevant to $f-r-d_{(break)}$ but as discussed above, it is not approvable in comparison to other applications of *faṣṣala* in the Qur’anic language. The Meccan Tābi‘īs’ comment on 24:1 is also relevant to $f-r-d_{(prescribe)}$ but as explained above, it is confronted with some grammatical problems.

Taking into consideration that the surah 24 is a chapter including various topics, some jurisprudential, some theological and some other themes, even if assumed some omissions in the sentence, the whole meaning may not be denoted by the root $f-r-d_{(prescribe)}$. We then need to concentrate on $f-r-d_{(break)}$ to understand the meaning of the two verses. Having concluded that the so-called earliest commentaries do not help to properly understand these verses, we need to use just linguistic evidences besides the context, the internal elements in the Quranic text itself.

Inside the text of the surah 24, we learn that minimally some part of the surah was revealed on the occasion of the event of *ifk*, i.e., an attribution to ‘Ā’isha, the wife of the Holy Prophet and announcing her innocence of the given attribution. The content of surah 24 in the first part focuses on the sexual chastity (verses 1-33), in the second part on the influence of serving God to attract His blessing (verses 34-57), in the third part on chastity and the principles of family (verses 58-61) and in the fourth on the importance of obeying God and His Prophet (verses 62-64).

Taking into consideration such a structure for surah 24, it seems that the word *farāḍnāhā*, connected to ‘anzalnāhā, goes to connect the meaning of division and separation to the meaning of revelation. Then the beginning of the surah speaks about the philosophy of revelation being divided and piecemeal because of the fact that the revelation of the Qur’an is context-sensitive. Verse (Q.25:32) speaks of this nature of the Qur’an which was doubtful for addressees, where it says,

وَقَالَ الَّذِينَ كَفَرُوا لَوْلَا نُزِّلَ عَلَيْهِ الْقُرْآنُ جُمْلَةً وَاحِدَةً كَذَلِكَ لِنُثَبِّتَ بِهِ فُؤَادَكَ وَرَتَّلْنَاهُ تَرْتِيلًا (الفرقان/32)
Those who reject Faith say, "Why is not the Qur'an revealed to him all at once?" Thus (is it revealed) that we may strengthen thy heart thereby and we have rehearsed it to thee in slow well-arranged stages gradually.

The verse implies that such kind of revelation – divided, distributed according to situations, gradually and piecemeal – is more efficient to encourage the Holy Prophet and his companions and all believers to be convinced with divine perpetual supervision and protection. We learn from several passages of the Holy Qur’an such an affection and sensation to events and situations as well. It is known as a character of the Qur’an and was the basis for the concept of *asbāb al-nuzūl* (causes of the revelation) in Qur’anic sciences.

The themes of surah 28 are also strictly connected to the same kind of affecting the souls of the believers. After a short introduction, the content of the surah, in the first part, is focused on the story of Moses from his

birth to his victory over the Pharaoh (verses 3-46), in the second part on the arguments of infidels against the Prophet (verses 47-84) and, in the third part on encouraging the Prophet to resist the infidels (verses 85-88).

Among the known exegetes, it is only al-Māwardī [d. 450/1058] who briefly mentions his understanding of the word *farāḍa* in verse (Q.28:85). After his citation of five known comments of early commentators, al-Māwardī added a sixth one, which seems to be his own viewpoint; a comment that has not drawn the attention of further exegetes at all. He says in his added sixth comment,

فَرَضَ أَي قَدَّرَ عَلَيْكَ إِزْوَاجَهُ فِي أَوْقَاتِهِ، لِأَنَّ الْفَرْضَ التَّقْدِيرَ.

Farāḍa means that God divided His revelation to you in measures fitting to the occasions, because *farḍ* means to divide in measures (al-Māwardī, 2007, 4:272). Then we can say that the last comment of al-Māwardī is the most appropriate and up the point explanation about the verse, in spite of the fact that he did not insist on the relevance of his suggestion, nor did he show any evidence or support for it.

8. Conclusion

Having classified the contents of all the early commentaries on verses (Q.24:1) and 28:85, the present author evaluates them on the basis of lexicographical and etymological evidence. The result is that, except for al-Māwardī's marginalized and ambiguous comment, none of the earliest commentators nor their successors produced any proper comment on the two verses.

It is suggested in the present study that *farāḍa* in both verses is derived from the root *f-r-d*_(break) and denotes 'to divide; crush.' The form within the context of the Qur'anic surahs implies 'to make more efficient' and 'encourage the Prophet and the believers.' According to the verse (Q.25:32), the gradual revelation of the Qur'an was a source of doubt for non-believers.

As reflected in the introduction to the article, the two verses were just a case study and a wider goal of this essay is to show that sometimes the commentaries attributed to the companions of the Holy Prophet, or *Tābi'īs*, and their disciples are detached from the context of the Quranic language and context. Then, it creates doubts to recognize their relevance to the earliest decades of the Islamic era.

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Panpsychism in Philosophy of Mind, Transcendent Philosophy and the Qur'an

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ABSTRACT:

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Panpsychism in philosophy of mind is the view that mentality is fundamental and ubiquitous in the natural world. The view has a long and venerable history in philosophical traditions – both Eastern and Western – and has recently enjoyed a revival in analytic philosophy. Thus, in conjunction with the widely held assumption that fundamental things exist only at the micro-level, panpsychism entails that at least some kinds of micro-level entities have mentality, and that instances of those kinds are found in all things throughout the material universe.

We can see something like this in Mullā Ṣadrā's Transcendent Philosophy. Mullā Ṣadrā claims that all things enjoy some kind of intelligence and understanding. On the other hand, many verses of the Holy Qur'an either explicitly or implicitly assert the presence of understanding and intelligence in all things. In this article, I will explain all three issues (Panpsychism, Mullā Ṣadrā's view, and relevant verses of the Holy Qur'an), then I will make it clear that Mullā Ṣadrā's view and Qur'anic statements are consistent with at least some versions of the Panpsychism.

KEYWORDS: Panpsychism, mentality, fundamental, Transcendent Philosophy, intelligence.

I. Introduction

The world is awake. That can stand as a slogan for *panpsychism* (Seager 1991) and the result of some major ontological principles from the point of view of Mullā Ṣadrā (known as Transcendent Philosophy) as well as the explicitness of some verses of the Holy Qur'an.

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The panpsychism literally means that everything has a mind. However, in contemporary debates it is generally understood as the view that mentality is fundamental and ubiquitous in the natural world. Thus, in conjunction with the widely held assumption that fundamental things exist only at the micro-level, panpsychism entails that at least some kinds of micro-level entities have mentality, and that instances of those kinds are found in all things throughout the material universe.¹

But it should be kept in mind that, as Chalmers says,

“They are not committed to the thesis that the number two has a mind, or that the Eiffel tower has a mind, or that the city of Canberra has a mind Instead, we can understand panpsychism as the thesis that some fundamental physical entities have mental states. For example, if quarks or photons have mental states, that suffices for panpsychism to be true, even if rocks and numbers do not have mental states. ... The line here is blurry, but we can read the definition as requiring that all members of some fundamental physical types (all photons, for example) have mental states (Chalmers, 2016, 1).”

On the other hand, it seems that a large number of verses of the Holy Qur'an testify to the consciousness and awareness of all things in the universe. It means, however, that everything that is considered as a thing is aware including the elementary particles, and therefore shares this with the theory of panpsychism. But as mentioned above, it seems that the panpsychism has no obligation to the consciousness of complex objects such as mountains, trees and rocks, and hence seems as if contrary to the Qur'anic view which emphasizes the consciousness of complex objects such as mountains and firmament.

Just as you know, lack of commitment to existence of some things does not mean commitment to its non-existence. So, we can say that panpsychism is not inconsistent with the related verses of the Qur'an, in principle. In addition, you will see soon that some readings of panpsychism accept the emergence of consciousness in ordinary objects as well as in some fundamental physical entities.

Eventually, Mullā Ṣadrā, on the ground of the principles established by himself, urged that there is some kind of consciousness in all kinds of beings

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1. Notice that, I take, in this article, having a mind or mentality as almost equivalent to being conscious, and that consciousness as a phenomenal (or, in some terms, qualia) versus functional one. So, this kind of minimal consciousness is not 'self-consciousness' or 'transcendental subjectivity', or awareness of the self as a subject, or awareness of one's own mental states, or the ability to conceptualize one's own mental states as such. Consciousness is simply sentience, or the way things are present (to the mind).

in the world. In this way, you can see that traditional Islamic philosophy and contemporary analytic philosophy and the Qur'an (the sacred religious text) are in the same direction. And this is what I will try to explain in this article.

Finally, I would like to remind you again that my aim in this article is only to show that the issue of the universal consciousness of beings, mentioned in various ways in the Holy Qur'an, is philosophically defensible (especially in contemporary philosophy) and therefore, it is also acceptable from a non-confessional point of view. Thus, here I will suffice with a brief report of the two philosophical views related to this discussion (panpsychism and Mullā Ṣadrā's view) without treating the reasons for the pros and cons. I will also speak of variant perspectives on the panpsychism as far as my purpose in this article requires.

2. *A brief Overview of Panpsychism*

There is no denying that panpsychism is intuitively implausible or contrary to intuition, hence being frequently subject to derision by philosophers and being labeled 'absurd' (Searle 2013) and 'ludicrous' (McGinn 1999, 97). Even sympathizers have qualms. Thomas Nagel worries that panpsychism carries the taint of 'the faintly sickening odor of something put together in the metaphysical laboratory' (1986, 49). So why have some of these people accepted such a view and tried to argue in its favor? One of the most important reasons is the failure or even disappointment of finding any adequate solution to the hard problem of consciousness.

The core of the problem is the apparent mismatch between the nature of the physical world as we understand our fundamental theories to have revealed and the subjective, 'what it is like' aspect of minimal conscious experience. It feels like something to be awake and this just seems utterly foreign to how we regard or how we *ought* to regard the material world. The explanatory gap is exactly the problem of how a world which is supposed to be completely described at the fundamental level by a science which has no place or need for subjectivity nonetheless somehow includes the subjective aspect of the world we call 'consciousness.'

One can highlight several prominent philosophers of mind to illustrate why we have tied ourselves in knots over such problem: William Seager has claimed that we have no idea whatsoever *how* consciousness 'emerges' from matter (1991, 195). Jaegwon Kim has held that we have reached a 'dead end' regarding the mind-body problem (1993, 367). Colin McGinn has alleged that we will *never* be able to understand the emergence of consciousness from

the brain (1991, 1–2, 7). John Searle has suggested that most of mainstream philosophy of mind is ‘obviously false’ (1992, 3). And Galen Strawson has maintained that only a ‘revolutionary’ new way of thinking will enable us to respond adequately to the mind-body problem (1994, 92, 99).

The inability of various mind-body theories to solve this problem left great philosophers such as Thomas Nagel and David Chalmers with the only solution to say that consciousness is fundamental and ubiquitous. Otherwise stated, lacking an explanation of consciousness in physical terms and lacking any conception of material reality beyond the structural, the panpsychist steps into the opening and suggests that perhaps the fundamental reality of the physical world itself partakes of some aspect of subjective consciousness. Again, this does mean merely that minimal, unsophisticated and unreflective consciousness is much more common than its opposite. All the panpsychist needs to posit is that some form of subjectivity, some kind of primitive feeling, is at the foundation of the physical world.

Panpsychism promises to integrate our scientific and ‘personal’ view of the world and do so in a way that respects both the completeness of the physical picture of the causal structure of the world it investigates and the role of consciousness itself. The price one has to pay is admission of subjectivity into the foundation of the world as one of its fundamental features.

2.1. The View in History of Philosophy

As mentioned above, the view has a long and venerable history in philosophical traditions, so that it was sometimes emphasized that ‘it is an ancient concept, dating back to the earliest days of both Eastern and Western civilizations’ and urged that ‘until the past hundred years or so, panpsychism was a respected and widely held viewpoint. In many cases it was regarded as obvious and in no need of defense’ (Skrbina 2017, 2). Then he offers a long list of philosophers – from the past to the present – and claims that all of them have more or less embraced panpsychism.

Certainly, Plato is one of the most famous and important ancient philosophers, as Alfred North Whitehead writes, ‘The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to Plato’ (Whitehead 1978, 39). Thus, it can be said that Plato is perhaps the first famous figure in the history of philosophy to be considered a *panpsychist*.

I followed Daniel Dombrowski (2019) in this claim, ‘there is ... evidence in favor of the claim that the ... panpsychist option may be the best clue we have to understanding Plato’s overall view ... In Plato’s dialogues we learn

that soul is the universal cause (*aitias tou holou – Epinomis* 988d), that it is (metaphysically rather than chronologically) prior to body (*presbyteras e somatos – Laws* 892a), that bodies are derived from soul (*soma de deuteron te kai hysteron – Laws* 896c), that we receive our being from soul (*Laws* 959a), and that soul is the primary source of all things (*psychei genesin hapanton einaiprotan – Laws* 899c). So, although Plato could not fully understand the full significance of panpsychism in that he lived over two thousand years before the discovery of cells and other microscopic centers of power, it would be a mistake to think that he was totally ignorant of such significance by defending dualism *simpliciter*' (Also see *Philebus* 28d, 29a-31b; and *Timaeus* 30b-c, 31a, 40b-e, 69c-70e, 77b).

Other philosophers on Skrbina list include: Spinoza, Leibniz, Arthur Schopenhauer, Gustav Fechner, Hermann Lotze, William Clifford, Samuel Butler, Ernst Mach, Haeckel, Morton Prince, Josiah Royce, C. S. Peirce, William James. And, of course, among the philosophers of the last century are Thomas Nagle and David Chalmers.

2.2. *An Initial Distinction: Panexperientialism and Pancognitivism*

At the first consideration we can distinguish between two important characteristics of human minds – *thought* and *consciousness*. According to the definition of consciousness that is dominant in contemporary analytic philosophy, something is conscious just in case there is something that it's like to be it; that is, if it has some kind of experience, no matter how basic. Humans have incredibly rich and complex experience, horses less so, mice less so again.

Standardly, the *panexperientialist* holds that this diminishing of the complexity of experience continues down through plants, and through to the basic constituents of reality, perhaps electrons and quarks. If the notion of 'having experience' is flexible enough, then the view that an electron has experience – of some extremely basic kind – would seem to be coherent. Thus, *Panexperientialism* is the view that *conscious experience* is fundamental and ubiquitous.

Thought, in contrast, is a much more sophisticated phenomenon. The traditional view in analytic philosophy is that thoughts are mental states that can be modeled as psychological attitudes towards specific propositions. Believing that "Tehran is the capital of Iran," hoping that "war is over," fearing that "there will be another financial crisis" are some examples of thought. Although many doubt the possibility of ascribing it to non-human animals, never-mind fundamental particles, pancognitivist claims that thought is fundamental and ubiquitous. That's why Panpsychism is

often caricatured as the view that electrons have hopes and dreams, or that quarks suffer from existential angst. However, whilst there have been some defenders of pancognitivism in history, it is panexperientialist forms of panpsychism that are taken seriously in contemporary analytic philosophy. So, it is not a miserable if I consider panpsychism and Panexperientialism as one and the same thing hereinafter (Goff, Seager & Sean, 2017).

3. *Mullā Ṣadrā's View*

Mullā Ṣadrā, based on the principles he explained and defended in his philosophy, insisted that a kind of consciousness is present in all beings in the world. In the first place, he argues that since 'existence' is *principal* for all things, so it exists in all things, and consequently *existential attributes* exist in all things.

By existential attributes he means attributes such as knowledge, power, volition and life, as opposed to attributes such as ignorance and inability and death. He claims that after thinking about this second group, you can clearly see that these show things that do not really exist. Take 'ignorance,' for example. What does this word really mean? Does it indicate the existence of an attribute in man (or other objects) or does it indicate that there is no such thing as knowledge in man? Obviously, 'ignorance' is nothing but lack of knowledge, rather than having the attribute of ignorance. For a person to be ignorant, he does not have to do anything special (such as going somewhere to be taught ignorance), but it is enough that he makes no effort to acquire knowledge. This is unlike the first group.

In the second stage, he goes on to argue that since existence is not only principal but also graded – that is, it exists in all beings at a different level and with different grading – so existential attributes in objects also have degrees.

Mullā Ṣadrā writes,

“Just as the Existence is a unique fact which flows in all beings in a different and gradation way as perfection and/or imperfection, so the true attributes of Existence, namely, knowledge, power, volition and life, as *who firm in knowledge* know, flow in all things, just like the flow of being itself. So, all beings, even inanimate objects, are alive, praising God, testifying to the existence of their Lord, and knowing their creator (Mullā Ṣadrā, 1981, 6:117).”

In order to understand Mullā Ṣadrā's theory, we need to become more familiar with the two main concepts in his view, the principality of existence and the gradation of existence.

By the principality of existence, he means that – comparing with quiddities – it is existence (*wujūd*) which bestows reality upon things and that the quiddities (*māhiyyāt*) are literally nothing in themselves and are abstracted by the mind from the limitations of a particular act of being. Roughly speaking, by principality of existence we mean to say that a horse exists, following common sense, we think that the horse is a reality to which existence is added. In reality, however, what we are perceiving is a particular act of existence which through the very fact that it is manifested is limited to a particular form which we perceive as a horse. For those who have realized the truth, the fact that a horse exists becomes transformed into the reality that the act of being has manifested itself in a particular form which we call horse.

Reality is then nothing other than existence which is at once 'one and graded,' existentiating the reality of all things. Existence is not only one but also graded. And it is not only graded but also principial or that which bestowed reality upon all quiddities, which in themselves possess no reality at all (Nasr & Leaman, 1996, 648).

In light of his first principle, Mullā Ṣadrā can say that the existence is a unique fact which flows in all beings and concludes that the true attributes of existence flow in all things, just like the flow of being itself. And in the light of the second, he says that existence flows in all beings in a different and graded manner as perfection and/or imperfection and concludes that because the existence of some objects is extremely weak these attributes do not manifest themselves.

Existence (*wujūd*) is in its varying degrees the same as knowledge, ability, will and other existential attributes, but existence in some things is extremely weak and these attributes do not appear from these because of their limitations and their mixing with flags and darkness, and to that, God indicated by saying *And there is not a thing that does not glorify Him with praise, but you do not understand* (Mullā Ṣadrā, 1981, 6:139-140).¹

In view of all the above, it is obvious that Mullā Ṣadrā is not only a proponent of panpsychism, but also it is a natural consequence of his philosophical principles. But, which of these two approaches in panpsychism, namely panexperientialism and pancognitivism, can be attributed to Mullā Ṣadrā? It can be argued that Mullā Ṣadrā's words suggest that he took both approaches, since he claims that everything has conscious experience even at the fundamental level of matter and at the same time everything can think even at that level.

1. ان الوجود على تفاوت درجاته عين العلم و القدرة والارادة و سائر الصفات الوجوديه لكن الوجود في بعض الاشياء في غاية الضعف لا يظهر منه هذه الصفات لغايه قصورها و مخالطتها بالاعلام والظلمات والى ذلك اشار بقوله «و ان من شىء الا يسبح بحمده ولكن لاتفقهون»

Here I do not have the opportunity to discuss in detail Mullā Ṣadrā's view, and especially his view of panpsychism, so I will end this discussion here and look for panpsychism in the Holy Qur'an.

4. Holy Qur'an and Panpsychism

It can be reasonably claimed that many verses of the Qur'an explicitly or implicitly confirm the existence of understanding in everything. At the first glance, the verses related to this subject can be classified into five groups:

I. Verses indicating that some parts of body will testify on the Day of Judgment.

This group of verses explicitly demonstrate the testimony of some parts of the human body on the Day of Judgment. But they implicitly say that these parts of the human body were already aware of what they had witnessed, since it is essential that every witness who really witnesses an event is aware of that event and keeps it in its memory. Thus, it can be concluded that this group of verses affirms the existence of consciousness at least in some seemingly unconscious objects, that is, some parts of the human body.

1. «يَوْمَ تَشْهَدُ عَلَيْهِمْ أَلْسِنَتُهُمْ وَأَيْدِيهِمْ وَأَرْجُلُهُمْ بِمَا كَانُوا يَعْمَلُونَ»

On the day when their tongues and their hands and their feet testify against them as to what they used to do (Q.24:24).¹

2. «الْيَوْمَ نَخْتِمُ عَلَىٰ أَفْوَاهِهِمْ وَتُكَلِّمُنَا أَيْدِيهِمْ وَتَشْهَدُ أَرْجُلُهُمْ بِمَا كَانُوا يَكْسِبُونَ»

This day We seal up their mouths, and their hands speak out to Us and their feet bear witness as to what they used to earn (Q.36:65).

3. «حَتَّىٰ إِذَا مَا جَاءُوهَا شَهِدَ عَلَيْهِمْ سَمْعُهُمْ وَأَبْصَارُهُمْ وَجُلُودُهُمْ بِمَا كَانُوا يَعْمَلُونَ وَقَالُوا لَوْلَا جُلُودُهُمْ لَمْ شَهِدْتُمْ

عَلَيْنَا قَالُوا أَنْطَقَنَا اللَّهُ الَّذِي أَنْطَقَ كُلَّ شَيْءٍ وَهُوَ خَلَقَكُمْ أَوَّلَ مَرَّةٍ وَإِلَيْهِ تُرْجَعُونَ وَمَا كُنْتُمْ تَسْتَكْبِرُونَ أَنْ

يَشْهَدَ عَلَيْكُمْ سَمْعُكُمْ وَلَا أَبْصَارُكُمْ وَلَا جُلُودُكُمْ وَلَكِنْ ظَنَنْتُمْ أَنَّ اللَّهَ لَا يَعْلَمُ كَثِيرًا مِمَّا تَعْمَلُونَ»

Till, when they reach it, their ears and their eyes and their skins testify against them as to what they used to do. And they say unto their skins, "Why testify ye against us?" They say, "Allah hath given us speech Who giveth speech to all things, and Who created you at the first, and unto Whom ye are returned." Ye did not hide yourselves lest your ears and your eyes and your skins should testify against you, but ye deemed that Allah knew not much of what ye did (Q.41:20-22).

1. Marmaduke Picktall's English translation of the verses of the Holy Qur'an has been adopted in this article (Ed).

Exegesis. These verses declare the testimony of the tongue and the limbs against the guilty man on the Day of Judgment. These organs will report what the sinner has done. This scene shows that a person's tongue and limbs were aware of what he/she had done in this world. Therefore, their testimony is valid on the Day of Judgment, otherwise, if the tongue and body in everyday life did not have the knowledge and ability to understand the actions of a guilty person, they would not be considered valid evidence. Note that in the third part of the verses He (God) also added eyes, ears and skin to the witnesses of the Day of Judgment. Therefore, it can be concluded that all the organs of the body can testify on that day and it can be said that according to the Holy Qur'an, (at least) all parts of the body are aware.

II. Verses indicating that some inanimate objects are in awe of Allah.

This group of verses explicitly tells us that things like the earth, mountains, and stones are fearful of God and have a sense of fear besides the greatness of God. Further, it is impossible to have such a feeling without knowing God and His greatness. Therefore, these verses tell us about the awareness of some inanimate objects.

1. «وَمِنْ آيَاتِهِ أَنْكَ تَرَى الْأَرْضَ خَاشِعَةً فَإِذَا أَنْزَلْنَا عَلَيْهَا الْمَاءَ اهْتَزَّتْ وَرَبَّتْ إِنَّ الَّذِي أَحْيَاهَا لُمُحْيِي الْمَوْتِ إِنَّهُ عَلَى كُلِّ شَيْءٍ قَدِيرٌ»

And of His portents (is this) that thou seest the earth lowly, but when We send down water thereon, it thrilleth and groweth. Lo! He Who quickeneth it is verily the Quickener of the Dead. Lo! He is Able to do all things (Q.41:39).

2. «لَوْ أَنْزَلْنَا هَذَا الْقُرْآنَ عَلَى جَبَلٍ لَرَأَيْتَهُ خَاشِعًا مُتَصَدِّعًا مِنْ خَشْيَةِ اللَّهِ وَتِلْكَ الْأَمْثَالُ لَضَرِبُهَا لِلنَّاسِ لَعَلَّهُمْ يَتَفَكَّرُونَ»

If We had caused this Qur'an to descend upon a mountain, thou (O Muhammad) verily hadst seen it humbled, rent asunder by the fear of Allah. Such similitudes coin We for mankind that haply they may reflect (Q.59:21).

3. «ثُمَّ قَسَتْ قُلُوبُكُمْ مِنْ بَعْدِ ذَلِكَ فَهِيَ كَالْحِجَارَةِ أَوْ أَشَدُّ قَسْوَةً وَإِنَّ مِنَ الْحِجَارَةِ لَمَا يَتَفَجَّرُ مِنْهُ الْأَنْهَارُ وَإِنَّ مِنْهَا لَمَا يَشَقَّقُ فَيَخْرُجُ مِنْهُ الْمَاءُ وَإِنْ مِنْهَا لَمَا يَهْبِطُ مِنْ خَشْيَةِ اللَّهِ وَمَا اللَّهُ بِغَافِلٍ عَمَّا تَعْمَلُونَ»

Then after that your hearts hardened. They were as rocks, or even harder. For there are some rocks from which rivers gush out, and others that splinter and water come out from them, and others that sink in awe of Allah. Allah is not unaware of what you do (Q.2:74).

Exegesis. The first verse (Q.41:39) indicates that the earth is in a mental state of fearing which requires consciousness.

Regarding the second verse (Q.59:21) a point which can undoubtedly be made here is that the Qur'an can only descend upon beings who are capable of understanding it and that the verse "If We had caused this Qur'an to descend upon a mountain" shows that descending of the Qur'an on the mountain is possible. Therefore, the result is that the mountain has the power to understand the Qur'an. In the following, this verse reminds us that because of the greatness of the Qur'an, if the Qur'an were revealed to the mountain, it would have collapsed. This point also tells us about the high degree of understanding of the mountains.

The third verse (Q.2:74) "and others [the rocks] that sink in awe of Allah" indicates that some of rocks fall down in fear of Allah. It thus indicates that the rocks are aware.

Muhammad Husayn Tabataba'i, one of the most important commentators on the Qur'an in recent times, who, in addition to his skill in interpreting the Qur'an, is a great and important philosopher explains this verse as follows,

Surely there are some of them (i.e., stones or rocks) which fall down for fear of Allah: We see how the rocks and stones fall down – big rocks on the summits of mountains crack up, and then an ordinary earthquake is enough to dislodge them causing an avalanche. Also, the cracks fill up with ice and snow during winter, then the warmth of spring melts the ice sending the streams down the valleys. This phenomenon is related to its natural causes, yet Allah says that the rocks fall down from fear of Allah. Why? Because all the natural causes ultimately return to the First Cause, that is, Allah. Rocks, when they fall down because of the natural causes, are in fact obeying the divine decree which put them under the influence of those secondary causes. It may, therefore, be said that they understand the command of their Lord – an understanding created in nature. They obey the decree of Allah inasmuch as they are thus molded by Him. Allah says, *"And there is not a single thing but glorifies Him with His praise, but you do not understand their glorification"* (Q.17:44); *"all are obedient to Him"* (Q.2:116). Fear too is based on perception, as are glorifying and obeying. It may therefore be said that rocks fall down for fear of Allah. This verse falls into the category of verses like *"And the thunder declares His glory with His praise, and the angels too for awe of Him"* (Q.13:13); *"And whoever is in the heavens and the earth makes obeisance to Allah only, willingly and unwillingly, and their shadows too at morn*

and eve" (Q.13:15). Here the sound of thunder has been counted as the declaration of divine glory and the shadow is said to prostrate for Allah. There are many verses of the same style and all are based on the above-mentioned analysis."(Tabataba'i, 1972, vol.1)

III. The verses in this category show that everything on earth and in heaven is obedient to God and prostrates to Him, as well as the earth and the heavens can cry, and that the heavens and the mountains refused to bear *al-amānah*.¹

It is clear that everything on the earth and in the heavens obeys and prostrates to God because of their understanding of God. In one of these verses, God states that neither the heavens nor the earth wept for the sinners who suffered. This means that heavens and the earth were able to recognize the torment that befell the sinners and they could weep, but they did not weep for the sinners. In another verse, God says that the heavens and mountains refused to bear the burden of the trust given to them. This means that the heavens and mountains both had the ability to understand that trust as well as the power to accept or reject it. That is, in addition to consciousness, they also have free will. Pay close attention to these verses:

1. «... بَلْ لَهُ مَا فِي السَّمَاوَاتِ وَالْأَرْضِ كُلُّهُ قَانِتُونَ»

... *But whatsoever is in the heavens and the earth is His. All are subservient unto Him* (Q.2:116).

2. «أَلَمْ تَرَ أَنَّ اللَّهَ يَسْجُدُ لَهُ مَنْ فِي السَّمَاوَاتِ وَمَنْ فِي الْأَرْضِ وَالشَّمْسُ وَالْقَمَرُ وَالنُّجُومُ وَالْجِبَالُ وَالشَّجَرُ وَالدَّوَابُّ وَكَثِيرٌ مِنَ النَّاسِ...»

Do you not see that whoever is in the heavens and whoever is in the earth; and the sun, and the moon, and the stars, and the mountains and the trees and the (moving) animals and many of the mankind prostrate themselves to Allah... (Q.22:18).

3. «فَمَا بَكَتْ عَلَيْهِمُ السَّمَاءُ وَالْأَرْضُ وَمَا كَانُوا مُنْظَرِينَ»

And the heaven and the earth wept not for them, nor were they relieved (Q.44:29).

4. «إِنَّا عَرَضْنَا الْأَمَانَةَ عَلَى السَّمَاوَاتِ وَالْأَرْضِ وَالْجِبَالِ فَأَبَيْنَ أَنْ يَحْمِلْنَهَا وَأَشْفَقْنَ مِنْهَا وَحَمَلَهَا الْإِنْسَانُ إِنَّهُ كَانَ ظَلُومًا جَهُولًا»

Truly, we did offer al-amānah to the heavens and the earth, and the mountains, but they declined to bear it and were afraid of it. But man bore it. Verily, he was unjust (to himself) and ignorant (of its results) (Q.33:72).

1. The trust, moral responsibility, honesty and all the duties ordained by Allah.

Exegesis. Because, as God has informed us in the first verse (Q.2:116), everything in the heavens and the earth, including inanimate objects, is obedient to God, and since they cannot obey Him without understanding His commands, so they are all free-willed creatures. Because when a person could say that he has obeyed someone's command which he could also disobey it, that is, he has the power to choose between obedience and sin. This means that he must have free will. 'Obedience' is an optional act and is only logical if it is done by an autonomous agent.

The second verse (Q.22:18) clearly states that everything in the world – whether living or inanimate – including the sun, moon, stars, mountains, trees, and animals, prostrates to God. And since the prostration of someone / something for someone / something else is impossible without understanding oneself (self-consciousness) and one's environment and without having any understanding of the object of worship. The verse thus implies that everything in the world has consciousness – at least in lowest level – (and even self-consciousness).

Undoubtedly, someone who can cry for something must be in possession of considerable knowledge and cognitive abilities. For example, he must be aware of the objects and events around him and be able to understand complex concepts such as profit and loss, obedience, sin and heavenly torment and the like. He must also have very complex cognitive abilities, such as perceiving joy and sorrow, and be able to display reactions such as laughter and crying. The third verse (Q.44:29) shows that heaven and earth, being in possession of the ability to cry have the required knowledge and cognitive abilities. Accordingly, the heavens and the earth are conscious.

According to the fourth verse (Q.33:72), He offered the heavens and the earth and the mountains to bear *al-amānah*, but they declined to bear it and were afraid of it. The divine purpose of *al-amānah* in this verse can be something like the trust, moral responsibility, honesty and all the divinely ordained duties. Whatever *al-amānah* is, it shows that the heavens, the earth, and the mountains are capable of understanding very complex issues that even humans may not be aware of (see the last part of the verse that says humans who carry *al-amānah* were very cruel to and ignorant of themselves). This is indeed a great degree of awareness.

IV. Verses that show that all beings obey and praise God.

1. «ثُمَّ اسْتَوَىٰ إِلَى السَّمَاءِ وَهِيَ دُخَانٌ فَقَالَ لَهَا وَلِلْأَرْضِ ائْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَا أَتَيْنَا طَائِعِينَ»

Then turned He to the heaven when it was smoke, and said unto it and unto the earth: Come both of you, willingly or loth. They said, "We come, obedient" (Q.41:11).

2. «يَوْمَئِذٍ تُحَدِّثُ أَخْبَارَهَا بِأَنَّ رَبَّكَ أَوْحَىٰ لَهَا»

That day she (Earth) will relate her chronicles. Because thy Lord inspireth her (Q.99:4-5).

3. «أَلَمْ تَرَ أَنَّ اللَّهَ يُسَبِّحُ لَهُ مِنْ فِي السَّمَاوَاتِ وَالْأَرْضِ وَالطَّيْرِ صَافَّاتٍ كُلُّ قَدْ عَلِمَ صَلَاتَهُ وَتَسْبِيحَهُ وَاللَّهُ عَلِيمٌ بِمَا يَفْعَلُونَ»

Hast thou not seen that Allah, He it is Whom all who are in the heavens and the earth praise, and the birds in their flight? Each [of them] has known his prayer and the praise; and Allah is Aware of what they do (Q.24:41).

4. «وَسَخَّرْنَا مَعَ دَاوُودَ الْجِبَالَ يُسَبِّحْنَ وَالطَّيْرَ وَكُنَّا فَاعِلِينَ»

...And we subdued the mountains and the birds to hymn (His) praise along with David. We were the doers (thereof) (Q.21:79).

5. «وَلَقَدْ آتَيْنَا دَاوُودَ مِنَّا فَضْلًا يَا جِبَالُ أَوِّبِي مَعَهُ وَالطَّيْرَ وَآلْنَا لَهُ الْحَدِيدَ»

And assuredly We gave David grace from Us, (saying): O ye mountains and birds, repeat his psalms of praise! And We made the iron supple unto him. (Q.34:10).

Exegesis. The first verse (Q.41:11) clearly demonstrates that heaven and earth – after their being created – *agreed* to obey the command of God *willingly*, not with coercion or reluctance. As mentioned above, they *are* free-willed creatures.

Here I would like to draw the reader's attention to the interesting point that this verse seems to show that the heaven which is a set of celestial bodies and the earth which is composed of various elements and objects, each having an independent and unique existence so that (at least God) can address them and talk to them. And this can lead us to the idea that the set of some objects can have an identity independent of their members and can be considered as an individual or even a person.

The second verse (Q.99:4-5) shows that the earth is aware of what is happening to it and somehow preserves it (that is, it has a very strong memory so that can memorize events in detail until the Day of Judgment) and is just waiting for God to Command it to describe the events.

Notice this part of the third verse (Q.24:41): *Each [of them] has known his prayer and the praise* and see how God explicitly says that all beings in the heavens and the earth and even birds in flight pray and praise God and with full awareness know what to do and what to say.

The fourth and the fifth verses (21:79; 34:10) tell us that when the Prophet David prayed to God and praise him, the mountains and the birds sang with him and repeated his prayer.

V. God's Command to some inanimate beings.

1. «قِيلَ يَا أَرْضُ ابْلَعِي مَاءَكَ وَيَا سَمَاءُ أَقْلِعِي وَغِيضَ الْمَاءِ»

And it was said, "O earth! Swallow thy water and, O sky! be cleared of clouds! And the water was made to subside (Q.11:44)."

2. «قُلْنَا يَا نَارُ كُونِي بَرْدًا وَسَلَامًا عَلَىٰ إِبْرَاهِيمَ»

We said, "O fire, be coolness and peace for Abraham (Q.21:69)."

Exegesis. The first verse (Q.11:44) tells us that God (in the event of the flood of Noah) commands the earth to swallow the water on the surface of the earth and commands the sky not to rain anymore and they obey, and in the second verse God says that He ordered fire to do something contrary to its nature, that is, not to burn, and it obeyed.

VI. Other cases.

1. «قَالَتْ نَمْلَةٌ يَا أَيُّهَا النَّمْلُ ادْخُلُوا مَسَاكِنَكُمْ لَا يَحْطِمَنَّكُمْ سُلَيْمَانُ وَجُنُودُهُ وَهُمْ لَا يَشْعُرُونَ»

Till, when they reached the Valley of the Ants, an ant exclaimed, "O ants! Enter your dwellings lest Solomon and his armies crush you, unperceiving" (Q.27:18).

Exegesis. This verse narrates the story of an ant who quite intelligently alerts his friends to a potential danger and advises them to return to their nests lest they be trampled by Solomon and his army.

2. «وَقَالُوا اتَّخَذَ الرَّحْمَنُ وَلَدًا ... تَكَادُ السَّمَاوَاتُ يَتَفَطَّرْنَ مِنْهُ وَتَنْشَقُّ الْأَرْضُ وَتَخِرُّ الْجِبَالُ هَدًّا»

And they say, "The Beneficent hath taken unto Himself a son ... Whereby almost the heavens are torn, and the earth is split asunder and the mountains fall in ruins (Q.19:88-90).

Exegesis. This verse clearly shows that the heavens and the earth and the mountains are so distressed by the words and beliefs of the polytheists that they reach the point of explosion.

Finally, it should be noted that the verses categorized and described above in the five categories are not the only examples of the verses from which the consciousness of all things can be deduced. Therefore, with a little care and patience, it is possible to find many other verses in the Qur'an that refer to the same thing.

5. *Conclusions*

Accordingly, we may make the following conclusions:

1. It can be said with some degree of certainty that the Holy Qur'an demonstrates and emphasizes the existence of consciousness in all animate and inanimate things in the world.
2. Many philosophers, whether in the East or in the West, materialist or immaterial, theist or atheist, accept the existence of consciousness in all things in our world.
3. Therefore, what the Qur'an emphasizes – that is, the existence of consciousness in everything – is not an absurd notion but is accepted by many philosophers of the world.
4. From the previous point, it can also be concluded that we can somehow accept the literal meaning of the above-mentioned verses – that is, the existence of consciousness in everything – and therefore it is not necessary to show any other meaning other than the literal meaning of the verses (an approach adopted by some commentators).
5. Before we say that everything has consciousness, we must correctly define the meaning of being an object and determine what can be philosophically considered a *single* object. For example, the Qur'anic presupposition that mountains are conscious is that each mountain is a single object. But can it be claimed that 'the mountain is a single object?' Is it a logically sound argument? This is an open question that needs to be answered elsewhere.
6. Finally, if we can claim that the Holy Qur'an, in harmony with philosophers, accepts the existence of consciousness in all things, we cannot accept it as a scientific miracle of the Qur'an, since in addition to the fact that this issue was an accepted fact among thinkers at the time of the revelation of the Qur'an, it is not agreed upon by all contemporary scholars.

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Transliteration System

ء	'	خ	kh	ش	sh	غ	gh	ن	n
ب	b	د	d	ص	ṣ	ف	f	ه	h
ت	t	ذ	dh	ض	ḍ	ق	q	و	w
ث	th	ر	r	ط	ṭ	ک	k	ی	y
ج	j	ز	z	ظ	ẓ	ل	l	ة	h
ح	ḥ	س	s	ع	'	م	m		

Short Vowels	
اَ	a
اُ	u
اِ	i

Long Vowels	
اَآ	ā
اُū	ū
اِī	ī

Diphthongs	
اَو	aw
اِی	ay
اِیّ	iyy
اُوّ	uww

Persian Letters	
پ	p
چ	ch
ژ	zh
گ	g



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Contemporary
Thoughts
Press

Contemporary
Thoughts Press