

«مقاله پژوهشی»

تعامل روش‌شناسی روایات تفسیری در تبیین واژه‌ها و عبارات آیات زمین‌شناسی

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چکیده

شناخت نظم‌یافته روش‌های تفسیری معصومان (ع) در تفسیر آیات زمین‌شناسی و مساعی آنان در فرایند فهم آیات قرآن و رسیدن به مراد خداوند از طریق تبیین علمی، می‌تواند روش‌هایی کارآمد در استنتاج قرآن در این‌گونه آیات باشد. اهل بیت (ع) و صحابه در تفسیر آیات علمی قرآن غالباً سه رویه تبیین لغوی، تفسیر مفهومی و استناد به قرآن را پیش گرفته‌اند؛ البته تفسیر مفهومی فراوانی بیشتری را دارا بوده و تبیین لغوی بیشتر به معناشناسی واژگان اختصاص یافته است، ایشان ضمن توجه به آیات دیگر قرآن و استدلال عقلی خود به تبیین قرآن پرداخته و به آیات آفاقی و انفسی آن مانند؛ فرورانش، عدم معدومیت ماده، و موارد دیگر اشاراتی داشتند. آنچه این نوشتار به آن پرداخته، دستیابی به نحوه مطالعه و رفتار ائمه طاهرين (ع) درباره آیات زمین‌شناسی قرآن کریم است که با روش تحلیل محتوایی و گردآوری کتابخانه‌ای روایات را مورد واکاوی قرار داده و با سنجش آیات زمین‌شناسی و روایات علمی و علوم طبیعی به این نتیجه رسیده که معصومان (ع) نه تنها به علم روز زمان خود توجه داشتند؛ بلکه به بیان مواردی پرداختند که اندیشمندان آن زمان از آن آگاهی نداشته و قرن‌ها بعد توسط دانشمندان کشف گردیده است. آنان برای رساندن مفهوم آیات علمی از طرق مختلفی مانند، توضیح معنایی، تصویرسازی و بیان علت، تأویل مفهومی و غیره بهره جسته‌اند.

واژه‌های کلیدی

آیات علمی، زمین‌شناسی، روایات معصومان (ع)، روایات صحابه، روش‌شناسی.

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ORIGINAL ARTICLE

Methodology of Interpretive Narrations in Explaining Geological Terms and Phrases of the Quran

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ABSTRACT

Recognizing the organized system of the impeccable Imams' (AS) interpretive methods in explaining geological verses, and their efforts in the process of understanding the Quranic verses and reaching God's intent through scientific explanation, can provide effective methods for interrogating the Quran in this type of verse. The Ahl al-Bayt (AS) and the Companions, in interpreting the scientific verses of the Quran, generally adopted three approaches: "Linguistic explanation, conceptual interpretation, and reference to the Quran itself." However, conceptual interpretation was more prevalent, and linguistic explanation was mostly dedicated to the semantics of words. While paying attention to other verses of the Quran and using their own rational arguments, they explained the Quran and eluded to its cosmic and internal signs, such as subduction, the non-annihilation of matter, and other matters. The present study explores how the Imams (AS) studied and approached the geological verses of the Holy Quran. Through content analysis and library-based data collection, the narrations are examined. By comparing the geological verses, scientific narrations, and natural sciences, it is concluded that the Impeccable Imams (AS) not only paid attention to the science of their time but also addressed issues that were unknown to the thinkers of that era and were discovered by scientists centuries later. They employed various methods to convey the meaning of scientific verses, such as semantic explanation, imagery, stating the cause, conceptual interpretation, and so on.

KEYWORDS

Scientific Verses, Geology, Narrations of the Impeccable Imams (AS), Narrations of the Companions, Methodology.



Introduction

In line with their divine mission, the Ahl al-Bayt (AS) strived to interpret the depths of the verses of the Holy Quran to the extent that the cultural and social exigencies of the time allowed. The scope of their explanations encompassed diverse themes and topics from the divine revelation, and they employed innovative methods in each of these discussions. Among the areas they focused on was the interpretation of the scientific verses of the Quran, especially those related to geology.

Just as the Holy Quran explicitly refers to "The Earth and its various phenomena, and many topics related to geological sciences," it did so in an era when human knowledge in this field was very limited (Saeedi Razavi, 2013 AD/1393 SH: 102). The interpretive methods employed concerning the geological verses of the Quran play a significant role in the accurate understanding and correct interpretations of these verses. Recognizing these methods can have a profound impact on a deeper understanding of the verses, the interpretation of the Quran, and even the natural sciences. The absence of this knowledge is clearly felt in the various dimensions of research that have been conducted.

Books and articles that have addressed scientific verses and traditions in the field of geology are as follows: In some sermons of *Nahj al-Balāghah* by Imam Ali (AS), there are scientific references to geological verses, such as Sermon 211, which is about the creation of mountains, and Sermon 91, known as the Sermon of the Phantoms, which explains how springs and clouds are formed and the function of mountains, etc.

- The book *al-I'jāz al-'Ilmī 'ind al-Imam Ali* (AS) (2010 AD/1390 SH) by *Labīb Bayḍūn*, translated by Hasan Riḍā Riḍā'ei under the title

"Scientific Wonders and Miracles in the Words of Imam Ali (AS)." This book reveals a glimpse of the knowledge of Imam Ali (AS).

- The article "An Analysis of *Wa min al-Arḍi Mithlahunna* in Verse 12 of Surah *al-Ṭalāq* with Emphasis on Razavi Narrations" by Ali Sharifi and Zahra Besharati, published in (2016 A/1396 SH) in issue 19 of the Razavi Culture Quarterly. The article examines the scientific interpretive narrations of Imam Riḍā (AS) and investigates the documentation of these narrations.

- The article "The Perspective of the Quran and *Nahj al-Balāghah* on the Earth," by Behzad Saeedi Razavi, published in the *Siraj al-Munir* Quarterly in (2013 AD/1393 SH), issue 15. The article examines how the semantic processing of geological verses in the Quran and *Nahj al-Balāghah* is carried out and examines the sciences present in these texts regarding origin, existence, and compares them with modern geology.

- The article "The Application of Geology in the Interpretation of the Holy Quran," by Abdolhossein Kongaziyan, Akram al-Sadat Mir Momtaz, Sara Bahrami, and Azam Noorgostari, published in (2013 AD/1393 SH) in the Journal of Quranic Studies, issue 19. Authors evaluated the word "*al-Arḍ*" (the Earth) in Quranic verses and concluded that, out of 115 verses concerning the Earth, 44 verses are not related to geological concepts or related sciences, and recourse to these sciences should not be made when interpreting those verses.

- Few books and articles have been written on the scientific methodology of the Imams (AS). Among them is Rezaei Esfahani's book, "Hadith and New Sciences (Logic of Understanding Scientific Hadiths, 2013 AD/1393 SH)." In the fourth and fifth chapters of this book, he examines specific examples of

scientific hadiths in the fields of natural sciences and humanities.

- The article "The Position of Scientific Interpretation Method in the Narrations of Imam *Ṣādiq* (AS)" by Mohsen Rafiei, Masoumeh Sharifi, and Masoumeh Hafezi, was published in issue 26 of the scientific journal "Quran and Science" in the year 2019 AD/1399 SH, and is based on several scientific narrations of Imam *Ṣādiq* (AS). Furthermore, some Shia and Sunni narrative interpretations have analyzed scientific verses and related narrations, which can be utilized.

- The article "Study of the Scientific Hypotheses of Geology in the Words of Amir (AS) and its Compatibility with Earth Sciences" by Rouhollah Naderi, was published in the journal "Dirasat Haditha fi Nahj al-Balāghah," Volume 6, Number 1, in Esfand 2022 AD/1401 SH. This article examines some sermons from *Nahj al-Balāghah*, along with Amir al-Mu'minin's (AS) scientific evidence in the branch of geology and based on the study of the planet Earth, considering the statements of geologists who have proven geological scientific propositions with the help of modern tools.

The existing writings, except for a few cases, often either have not paid sufficient attention to the methodology of the Imams' (AS) narrations, or have simply passed over geological narrations. This article's approach is a meticulous examination of the style of expression of the Imams (AS) and some companions in the interpretation of geological verses. By placing the narrations on the scale of analysis, this approach reveals the distinction of this discourse from other similar research. Accordingly, attention is paid to narrations that specifically address the topics of geology, and they are examined and analyzed as much as possible,

considering definitive scientific findings and credible interpretations.

Scholarly narrations can be divided into two categories: direct and indirect. Direct narrations explicitly interpret a verse, while indirect narrations focus on hidden meanings and implicit allusions within the verse. This article will focus solely on direct geological narrations. Furthermore, narrations transmitted from *Ibn 'Abbās*, one of the companions who benefited greatly from the scientific knowledge of the impeccable Imams (AS) and was endorsed by them, will be utilized.

1. Conceptualization

A brief consideration of some concepts before delving into the main discussions seems necessary. These concepts include exegesis, science, method, and scientific exegesis from the perspective of experts.

1.1. Exegesis

Lexicographers have defined interpretation as meaning explanation and clarification, separation and elucidation of something that is concealed (Farāhīdī, n.d.: 7: 247; Ibn Durayd, 1987: 2, 718; Jawharī, 1989 AD/1410 AH: 2, 781; Suyūṭī, 1995 AD/1416 AH: 2, 460). Some have defined interpretation as uncovering the intended meaning of a linguistically complex term (al-Azharī, 2000 AD/1421 AH: 12, 283; Firuzabadi, 2005 AD/1426 AH: 2, 192), while others have chosen expressing rational meanings and uncovering those meanings as the definition of interpretation (Rāghib, 1991 AD/1412 AH: 636; Dhahabī, n.d.: 1, 12). In terminological usage, interpretation is the science that explains the true meanings of the verses of the Quran according to human capacity and in accordance with the linguistic, morphological, syntactic, and rhetorical rules of

Arabic in order to reveal God's intention in the Quran (Moein, 2002 AD/1381 SH: 471). It is also the explanation of God's word and the clarifier of the words of the Quran and its meaning (Dhahabī, n.d.: 1, 12). Interpretation also refers to the act of the interpreter and the book written in explanation of the verses of the Quran, and it is the science that familiarizes a person with the meanings and purposes of the verses, as well as the sources, foundations, methods, criteria, and rules (Rezaei, 2013 AD/1393 SH: 19, 1-20). Therefore, interpretation clarifies the words of the Quran, some of which are familiar and easily interpreted, and some of which are hidden and problematic, which are uncovered through unveiling and explanation.

1.2. Science

Science is the opposite of ignorance (Farāhīdī, n.d.: 2, 152) and is the perception of the truth of something (Rāghib, 1991 AD/1412 AH: 1, 580-582). Acquiring knowledge is being scientifically aware of it (Muṣṭafawī, 1996 AD/1375 SH: 8, 206-207). It is also accurate knowledge and recognition of everything, and mastery and certainty about it is science (Dehkhoda, 1998 AD/1377 SH: 10, 12379). Science is something that every rational person knows within themselves and their conscience (Bukhārī Qannūjī, 2002 AD/1423 AH: 31).

A collection of general principles and issues concerning something is also knowledge, like the science of cosmology. In common parlance, what requires experience, seeing, and experimentation is termed "Science," such as natural science and astronomy (Ebrahim Anis, 2012 AD/1392 SH: 1, 1336-1337). "Science is the discovery of laws through observation, experience, experimentation, and the retrieval of repeatable and verifiable causal relationships" (Sarukhani, 2013 AD/1393 AH:

1, 29 and 8) and "A collection of true propositions that can be proven through sensory experience is also science." (Misbah, 1999 AD/1378 SH: 1, 64)

Therefore, science is the discovery and precise knowledge of anything, and the more you know about something, the more your knowledge increases. And when this knowledge is the discovery of laws through observation, experience, and experimentation, its retrieval is repeatable and verifiable.

1.3. Method

A method refers to the set of ways, rules, or tools used in research to lead the researcher from the unknown to the known. Technically, it is the collection of methods and measures used to recognize the truth and avoid error. Descartes considers method to be the path that must be taken to reach the truth in the sciences (Sarukhani, 2013 AD/1393 SH: 1, 26-29). The word "Method" in Arabic is "*Manhaj*," and methodology is "*Manhajīyyah*." In its literal meaning, method means "Manner, way, rule, law, proof, and path." (Nafisi, 1975 AD/1355 SH: 3, 1707; Dehkhoda, 1998 AD/1377 SH: 8, 12378) "Style, manner, way, type, and tradition" are synonyms of method (Dehkhoda, 1998 AD/1377 SH: 8, 12378). Therefore, to discover the unknowns of any science, a specific set of methods, tools, and techniques within that science is needed. One of the meanings of method is tradition; hence, some of the traditions of the Prophet (PBUH) and the Ahl al-Bayt (AS) are their method in explaining the interpretation of the Quran.

1.4. Scientific Exegesis in Terminology

Scientific exegesis in terminology is "The application of the Quran to the empirical sciences." (Sultan Mohammadi, 2008 AD/1388 SH, introduction) Rizaie defines scientific

exegesis as "The method of using empirical sciences as a tool for interpreting the Quran." (Rezaei Esfahani, 2006 AD/1385 SH: 22) In *Rūmī's* view, scientific exegesis is "The interpreter's endeavor to discover the relationship between the verses of the Quran and the discoveries of the empirical sciences, in such a way that the miracle of the Quran becomes evident and established, and it has validity for all times and places." (Rūmī, 1986 AD/1407 AH: 2, 549) Therefore, scientific interpretation is a descriptive combination of contemporary interpretive methods that serve to explain the verses of the Quran.

A selected definition of scholars in scientific interpretation: "A method for a better understanding of scientific verses of the Quran by using empirical sciences as a tool in interpretation."

1.5. Geological Verses

Geology, the study of the Earth or geology is a science that discusses the creation of the Earth and how its different layers and parts are (Amid, 1978 AD/1357 SH: 576). "Geology is a science that is based on the study of the planet Earth and the complexities of its formation, and the branches of geology are discussed." (Naderi, 2023: 67) Some define geology as the science of studying the Earth, its constituent materials, the structure of those materials, and the processes that act upon it. An important part of geology is studying how the Earth's materials, structures, processes, and organisms have changed over time.¹ Geological verses are verses that directly or indirectly refer to the science of the Earth, such as the movement of the Earth, the formation of continents, earthquakes, the movement of water, the

formation of mountains, types of dams, mines, the shape of the Earth, the number of earths, plants, etc., and the advancement of geology is effective in better understanding these types of verses.

2. Interaction of Narrations with Geological Verses

Knowledge of method in every science, especially natural sciences, is essential. The verses of the Quran refer to some new sciences, especially geology, which emphasizes the miraculous nature of this book, and its explanation was the responsibility of the Imams (AS). "The interpreter's familiarity with the text and the author will lead to a deeper understanding." (Fakhkhari, 2013 AD/1392 SH: 26) The present study addresses the interaction of interpretive styles of narrations in explaining and interpreting scientific verses of the Quran related to geology in three areas: "Vocabulary, concepts of verses, and reference to the Quran."

2.1. Explanation of Words in Narrations

In some narrations, the words of scientific verses are explained. "In the lexical conceptualization of narrations, sometimes only one word is interpreted with its synonymous word, and in some narrations, the words of scientific verses are explained. Or simpler words are used to explain the word. This method can be called lexical semantics, which is more like a lexical explanation." (Rostamnejad, 2009 AD/1388 SH: 18)

2.1.1. Mount Sinai

Imam Bāqir (AS), referring to the verse "*Wa Shajaratan Takhruju min Ṭūr Saynā'*: And a tree springing out of Mount Sinai, which produces oil...", (al-Mu'minūn: 20) interprets the word "*Ṭūr*" as mountain and "*Sinai*" as tree,

1. Anze Chen, Young Ng, Erkuang Zhang, Mingzhong Tian. (2020). Dictionary of Geotourism. Springer, Singapore.

emphasizing that "The tree that produces oil is the olive tree. *Wa Shajaratan Takhruju min Ṭūr saynā'a fal Ṭūru al-Jabal al-Saynā'u al-Shajarah wa Ammā al-Shajaratu Allatī Tanbutu bidduhni fa Hīya al-Zaytūnu.*" (Qummī, 1983 AD/1404 AH: 2, 91; Baḥrānī, 1994 AD/1415 AH: 4, 21; and Barazesh, 2014 AD/1394 SH: 10, 50)

"Ṭūr means mountain, and Ṭūr Sinai is a mountain in the Levant," (Farāhīdī, n.d.: 7, 304; Ḥusaynī Zabīdī, 1993 AD/1414 AH: 7, 148; and Jawharī, 1989 AD/1410 AH: 5, 2141) and "Ṭūr, when added to Sinai, refers to a tree." (Jawharī, 1989 AD/1410 AH: 5, 2141)

The Imam (AS) interprets Ṭūr as mountain and Sinai as tree (specifically, the olive tree). Therefore, his interpretive method can be considered a lexical semantic analysis of the word "Ṭūr" and an instance-based exegesis of the word "Sinai" as tree. Most lexicographers define Tur as mountain, whether accompanied by Sinai or not. The scientific point that the Imam (AS) refers to is not only the fruit but also the tree itself—the tree that produces oil. This implies that the tree itself, like its fruit, has benefits. Scholars have enumerated many benefits for olive tree leaves, including the fact that "This plant contains polyphenolic compounds that are beneficial in the treatment of various cancers, cardiovascular diseases, rheumatic inflammations, and gastrointestinal diseases." "Olive leaf is effective in reducing blood sugar and blood lipids. The olive plant prevents the progression of type 1 diabetes with autoimmune origin."¹ "Olive leaf extract can inhibit the growth of microorganisms such as *Helicobacter pylori*, *Staphylococcus aureus*, and *Campylobacter jejune*, and can also affect

the bacterial flora of the gastrointestinal tract in this way."

Research has shown that the combination of oleuropein and caffeic acid has a significant effect on the gram-positive bacteria *Bacillus cereus* and *Staphylococcus*, and the gram-negative bacteria *Escherichia coli* and *Damonella enteritidis*² (Sajjadi Kaboudi et al., 2019 AD/1398 SH: 67-68). Therefore, the olive tree is described as a symbol of healing, especially through its oil and leaves. The verse seems to imply that the tree with such characteristics comes from Mount Sinai, meaning that Mount Sinai must be the local name for the place where the tree grows. Thus, the meaning of "Tree" for "Sinai" is a specific instance of the word, not its literal meaning.

2.1.2. Subsidence

Ibn 'Abbās, in interpreting the verse "Say, have you considered: if your water was to become sunken [into the earth], then who would bring you flowing water?" (al-Mulk: 30) interprets "Flowing water" as "Running water." (Barghani, 1851 AD/1271 AH: 16, 112, cited from Barazesh, 2015 AD/1394 SH: 16, 460) In dictionaries, "Flowing" (*Ma'īn*) is derived from "*Ma'n*" meaning "Running" (Rāghib, 1991 AD/1412 AH: 771; Ṭurayḥī, 1955 AD/1375 AH: 6, 317; and Ghazanfari, 2020 AD/1399 SH: 236). Some interpretations state that "Sunken" (*Ghawr*) means "Depth" and "*Ghār al-Mā'*" refers to water hidden deep in the earth, while "Flowing water" (*Ma'īn*) refers to visible running water

1. Visioli F, Galli C. The Effect of Minor Constituents of Olive Oil on Cardiovascular Disease: New Findings. *Nutrition reviews*. 1998; 56(5): 142-7.

Covas MI. Olive Oil and the Cardiovascular System. *Pharmacological Research*. 2007; 55(3): 175-86.

2. Nazari H, Yavarmanesh M, Khodaparast MHH. In Vitro Study to Evaluate the Antibacterial Effect of Pistacia khinjuk Stocks oil as Compared With Olive Oil on Food Borne Pathogenic Bacteria (*Staphylococcus Aureus*, *Escherichia Coli*, *Listeria Monocytogenes*). *Journal of Essential Oil Bearing Plants*. 2016; 19(1): 125-33.

Yordanov D, Boyanova L, Markovska R, Ilieva J, Andreev N, Gergova G, et al. Influence of Dietary Factors on *Helicobacter Pylori* And CagA Seroprevalence in Bulgaria. *Gastroenterology Research and Practice*. 2017.

from springs due to its abundance (Modarresi, 1998 AD/1419 AH: 16, 184). *Kāshifī* interprets "Sunken" (*Ghawr*) as "Sunken into the earth" and "Flowing" (*Ma'īn*) as "Running water or visible and exposed to viewers." Allamah also interprets "*Ma'īn*" as visible and flowing (Kāshifī, 1990 AD/1369 SH: 1, 1281 and Tabāṭabā'ī, 1996 AD/1417 AH: 19, 365). Since "Water sinking deep into the earth under various conditions and circumstances causes various phenomena, including the formation of underground water tables or the occurrence of the subduction phenomenon;" Geologists analyze the cause of water sinking deep into the earth as follows: "Surface water can penetrate deep into the earth due to the subduction of mantle layers. Since the depth of water penetration is a very great and high temperature and pressure condition led to the combination of water with minerals and a change in its nature, or it becomes inaccessible to humans, this verse is therefore an example of scientific prediction." (Vahdat Azar et al., 2018 AD/1397 SH: 83)

Consequently, according to linguistic and exegetical books, (*Ma'īn*) means flowing water that is visible due to its abundance. Therefore, the apparent meaning of the aforementioned scientific verse, based on the narration of *Ibn 'Abbās* and its application to modern science, is expressed as follows: If the water you use undergoes a change in nature due to subsidence into the depths of the earth and cannot be recovered, who can make the flowing water flow on the surface of the earth again? Consequently, this narration, as a scientific narration, is stated directly and using the method of linguistic semantics. This is because many waters sink into the ground and can be reused through wells and springs, but if they sink deeper into the ground, the probability of

their recovery is greatly reduced, and sometimes a change in nature prevents access to the water.

2.2. Conceptual Exegesis

In the conceptual exegesis of the verse, the narration deals with the meaning and concept of the verse or its scientific vocabulary, and the concept are opposed to the explicit wording. "Some scholars of this art have used the term to explain key concepts related to the verse." (Masoudi, 2015 AD/1395 SH: 1, 27) In this type of exegesis, instead of emphasizing words, the explanation of sentences and methods of deriving meaning are addressed. For example:

2.2.1. Semantic Explanation

In this type of interpretation, "Instead of stating words, it explains the sentence and removes ambiguity from it, and explains God's intention and presents the meaning of the word or words of the verse or the relationship between them." (Ayazi, 2009 AD/1388 SH: 141-151)

2.2.1.1. Extraction of Iron from Mines

In a narration, Amir al-Mu'minin (AS) describes the stages of building the first dam by *Dhul Qarnayn* and recites the verse "Bring me pieces of iron," until when he had leveled [them] between the two mountain sides, he said, "Blow [with bellows]," until when he had made it [like] fire, he said, "Bring me, that I may pour over it molten copper," (al-Kahf: 96) and says that this is the meaning of God's word: "By the order of *Dhul Qarnayn*, large pieces of iron were brought and piled on top of each other until they completely covered the space between the two mountains. Then, by melting the iron and pouring copper on it, the gap was completely blocked."

He then commanded them to bring iron, and they brought it. He placed it between the two mountain sides (meaning between the two mountains) until he leveled them. Then he commanded them to bring fire, and they brought it. They blew under the iron until it became like fire. Then he poured molten copper upon it until it sealed it. This is what He meant by, "Until when he had leveled [the wall] between the two mountain sides, he said, 'Blow,' until when he had made it [like] fire..." (Qummī, 1983 AD/1404 AH: 2, 41; Majlisī, 1982 AD/1403 AH: 12, 178-179; and Barazesh, 2014 AD/1394 SH: 8, 628)

Another narration from the Imam (AS) with more details than the aforementioned narration states: "Dhul Qarnayn went to excavate a mountain of iron to build that dam, and they extracted pieces of iron in the shape of raw bricks from that mountain for him, and Dhul Qarnayn piled the bricks on top of each other between the two mountains. After gathering firewood and lighting fire on them, they placed blacksmith's bellows beside them and blew on the fire with them. When the iron became molten, Dhul Qarnayn said, "Bring me *Qitr* (red copper)." Dhul Qarnayn was the first person to build a dam on the earth. So a mountain of iron was dug for him, and they extracted pieces like bricks for him, and he placed some of them on top of others... and it mixed with it." (Ḥuwayzī, 1994 AD/1415 AH: 3, 298; 'Ayyāshī, 1960 AD/1380 AH: 2, 343) In these two narrations, in addition to explaining the meaning of the verse, the Imam (AS) has provided a linguistic semantic analysis of the two words "*Qitr*" and "*Ṣadafān*."

Lexicographers consider one of the meanings of "*al-Qitr*" to be copper (Ibn Manẓūr, 1993 AD/1414 AH: 5, 105), and some define it as molten copper (Farāhīdī, n.d.: 5, 95; and Rāghib, 1991 AD/1412 AH: 1, 677).

"*Ṣadaf*" is defined as anything high like a mountain (Ibn Manẓūr, 1993 AD/1414 AH: 9, 188), and "*Ṣadafān*" is defined as the meeting point between two mountains (Farāhīdī, n.d.: 7, 102). *Ṭabarī*, quoting *Ibn 'Abbās* and *Mujāhid*, states that "*al-Ṣadafān* means the space between two mountains, and *al-Qitr* means copper," (Ṭabarī, 1991 AD/1412 AH: 7, 93) which aligns with the meanings provided by lexicographers and the aforementioned narrations. A good scientific point that Makarem has pointed out and that has been proven in modern science is that "Copper does not rust, but iron does and loses its strength after a while." Therefore, pouring a layer of copper prevents this corrosion (Makarem, 1995 AD/1374 SH: 12, 535-536).

Probably for this reason, *Dhul Qarnayn* ordered copper to be poured over the iron to protect it from rusting. On the other hand, the dam mentioned in the verse is a robust and impenetrable technology, a type of binding connecting iron and copper, which is now considered one of the accepted scientific innovations. The use of this technology in non-potable water dam walls could also be considered a possible application for waterproofing and providing special reinforcement to the walls (Miri and Akbari, 2014 AD/1393 SH: 25).

Thus, in these two overlapping narratives, the Imam (AS) accurately describes the stages of dam construction. In the second narrative, when it is said, "He went to explore a mountain of iron...", it implies that copper and iron are extracted from the mountains. According to today's science, in the early stages, these materials are available as ore and need to be purified to become bricks. Therefore, *Dhul Qarnayn* must have had access to these facilities and knowledge. Another point that stands out in this narrative is the effectiveness

of copper in protecting iron and preventing it from rusting. This scientific point, which is also discussed in engineering today, demonstrates the Imam's (AS) deep understanding of dam construction technologies and raw materials in his time. Furthermore, this narrative indicates that *Dhul Qarnayn* was not only a military commander but also a prominent engineer who was familiar with the techniques of building a strong dam. Accordingly, the Imam's (AS) interpretive style in these narratives involves explaining the meaning of the verses along with presenting scientific points.

2.2.1.2. Formation of Continents

In the interpretation of the verse "It is Allah who has created seven heavens, and of the earth, their like. [His] command descends among them," (al-Ṭalāq: 12) there is a narration from Ibn 'Abbās that interprets the concept of "Seven Earths" as seven pieces of land.

Accordingly, *Ibn 'Abbās* believes that the seas separate these lands and they are all under one sky: "They are seven lands, not one above the other, separated by the seas, and all are overshadowed by the sky." (Majlisī, 1982 AD/1403 AH: 57, 74; Barazesh, 2014 AD/1394 SH: 16, 374)

This narrative clearly refers to the pieces of the Earth that are now called "Continents." Continents are large, continuous landmasses that include parts of dry land and parts beneath the ocean surface (Safarbeygiyan, 2012 AD/1392 SH). According to new classifications, the continents are divided into seven parts: Asia, Africa, North America, South America, Europe, Antarctica, and Australia (Kazemi, 2021 AD/1400 SH). With this interpretation, *Ibn 'Abbās* directly addresses the meaning of the verse and also states the scientific point of the verse.

Ali ibn Ibrahim also says in his interpretation that the mentioned verse is evidence of the existence of land under every sky: "His saying, "Allah is the one who created seven heavens..." is evidence that under every heaven there is a land." (Qummī, 1983 AD/1404 AH: 2, 375; Barazesh, 2014 AD/1394 SH: 16, 372) According to *Qummī*'s interpretation, under each of the seven heavens or galaxies, there is also a land. This indicates the existence of more lands that are habitable, whether inhabited or not. Similarly, *Sha'rānī* also points out in his interpretation that "God created the earth in seven layers like the heavens, but some of these lands may be under each other." He, by bringing a narration from *Ibn Khālid* quoting from the interpretation of *Manhaj al-Ṣādiqayn*, says; "The meaning of seven lands is planets like the Earth that are surrounded by a sky." *Sha'rānī* considers this narrative to be consistent with the new astronomy (*Sha'rānī*, 1966 AD/1386 AH: 3, 1260). *Suyūṭī* narrates another narration from *Ibn 'Abbās* in which he refers to the existence of different lands in the sky and says that "The master of the lands is the land on which we are located." (*Suyūṭī*, 1983 AD/1404 AH: 6, 239) This narration also confirms the existence of many lands in the sky, although it provides less information about their nature and habitability.

Ultimately, the examination of various narrations and interpretations concludes that the aforementioned verse describes the existence of many celestial bodies in the heavens, which are similar to the Earth and are also habitable. As *Ali ibn Ibrahim* and *Sha'rānī*, as well as *Suyūṭī*, with mentioning another narration from *Ibn 'Abbās*, are attentive to this view, but the first narration of *Ibn 'Abbās*, which calls "Seven Lands" seven pieces of land, refers to the continents of our inhabited Earth.

Of course, there is a narration from Imam *Riḍā* (AS) which is mentioned in the depiction section on page 11 of the same article in the interpretation of verse 12 of Surah *al-Ṭalāq* (Divorce), which confirms the views of the interpretations and the second narration of *Ibn ‘Abbās* and *Ibn Khālīd*.

2.2.2. Clarifying Instances

A significant portion of the interpretations of Quranic verses is dedicated to explaining the apparent and hidden instances of the verses. "Some interpretive narrations, instead of unraveling the general concepts of the verses, speak of a limited, external instance or instances. It seems that the purpose in such narrations is not 'interpretation,' but rather listing a number of apparent or hidden instances of the Quranic expressions in question." (Rostam Nejad, 2009 AD/1388 SH: 29)

2.2.2.1. Sending Down Iron

There are narrations in the interpretation of the verse "And We sent down iron..." (al-Ḥadīd: 25) that address the issue of the descent of iron and its meaning. Among them is a narration from Amir al-Mu'minin (AS) who interprets the meaning of the verse as weapons and instruments of war: "We sent down iron, in which is great might, meaning weapons and other things." (Ibn Bābawayh, 1977 AD/1398 AH: 266; Majlisī, 1982 AD/1403 AH: 90, 138; Ḥuwayzī, 1994 AD/1415 AH: 5, 250) This interpretation indicates that the verse refers to the existence of iron-made war instruments; therefore, some of its instances are mentioned.

Ibn ‘Abbās believes that iron descended from Paradise with Adam (AS) and introduces tools such as the anvil, hammer, and tongs that descended with Adam (AS): "He sent down with Adam from iron the *al-‘Alāh*, which is the anvil, the *kalbatān* (tongs), and the *Miṭraqah*

(hammer)." (Majlisī, 1982 AD/1403 AH: 77, 113-114; Barazesh, 2015 AD/1394 SH: 15, 608) "Sending down" means coming from top to bottom, which may refer to the same scientific point that will be mentioned. This narration refers to the descent of raw materials for making tools with Adam, which does not contradict the narration of Amir al-Mu'minin (AS) who says, "Its descent is His creating it," (Majlisī, 1982 AD/1403 AH: 90, 114; Ḥuwayzī, 1994 AD/1415 AH: 5, 250; Barazesh, 2015 AD/1394 SH: 15, 606) because His Holiness did not mention whether the making of iron was on earth or in the heavens. Therefore, *Ibn ‘Abbās* also mentions instances of iron tools that descended with Adam (AS) and speaks of the descent of iron with Adam (AS) to better understand that iron came from somewhere else or that its primary molecule was sent by God Himself.

Therefore, *Ibn ‘Abbās* utilized the method of analogy and illustrative examples to interpret the verse. In another narration, the Prophet of God (PBUH) refers to the descent of four things from the heavens, one of which is iron: "Indeed, God sent down four blessings from the heavens to the earth: "He sent down iron, water, fire, and salt" (Baḥrānī, 1994 AD/1415 AH: 5, 480; Ḥuwayzī, 1994 AD/1415 AH: 5, 250; Barazesh, 2014 AD/1394 SH: 5, 606). The Prophet (PBUH) states that iron is one of the heavenly blessings that descended from above, thereby explaining the scientific concept and point of the verse.

"Confirmed by scientists, iron atoms are formed in stars larger than the sun and transported to Earth along with cosmic dust. For example, Strokh, an American scientist at NASA, says that iron atoms have a distinct composition and could not have been formed on Earth because the electrons, protons, and neutrons in an iron atom require a great deal of

energy to unite, four times the total energy in the solar system. Therefore, iron must be a foreign element that came to Earth." (Fayyūmī, 2003 AD/1424 AH: 75-76) Similarly, Darach Watson, an astrophysicist at the Niels Bohr Institute in Copenhagen, stated that iron atoms require a very large amount of energy to form, and according to the periodic table, elements heavier than lithium up to iron were formed in the core of stars billions of years after the Big Bang (Arjmand, 2018 AD/1398 SH, summarized). Considering this scientific point, the esteemed Messenger (PBUH) revealed a scientific discovery by stating this narration. As mentioned, other narrations have also alluded to the same scientific point, because the level of understanding of the people, even scientists, was not at a level where they could grasp these scientific points; therefore, it was expressed indirectly and figuratively. Of course, this does not conflict with the fact that iron ore resources also exist on Earth. Because God states that the initial creation of man was from dust and then from semen, and the descent of iron can also be like this.

Sadeghi Tehrani interprets the sending down of iron as "From the upper divine position to the lower earthly positions" and, referring to the verse "So your sight today is sharp," (Qāf/22) says in this verse, "*Ḥadīd* (iron) means insight;" therefore, they "Applied *Ḥadīd* to non-iron and any sharp object, including all cold and hot material and spiritual weapons, and advanced weapons within the word *Ḥadīd* and its severe might." (Sadeqi Tehrani, 2009 AD/1388 SH: 5, 230) Consequently, the interpretative narrations of Amir al-Mu'minin (AS), the Prophet Muhammad (PBUH), and *Ibn 'Abbās* point to the heavenly origin of iron, which is also consistent with modern science. Therefore, the method of expression in the Hadiths of the

Impeccable (AS) can be considered as exemplary explanation and semantic clarification, and the narration of *Ibn 'Abbās* as a representative interpretation that is directly stated.

2.2.3. Conceptual Interpretation

Conceptual interpretation deals with the hidden meanings of the verse and falls within the domain of *Ta'wīl* (esoteric interpretation), but the impeccable (AS) directly explains it through *Ta'wīl*. Therefore, it ultimately connects to conceptual explanation, which is a division of direct interpretation.

2.2.3.1. Creation of Iron

Narrations have been reported in the interpretation of the verse "And We sent down iron..." (al-Ḥadīd: 25), including a narration from Amir al-Mu'minin (AS) stating that the meaning of sending down iron is the same as creating it. "We sent down iron... its sending down is its creation." (Ṭabrisī, 1983 AD/1404 AH: 1, 250; Majlisī, 1982 AD/1403 AH: 90, 114; Baḥrānī, 1994 AD/1415 AH: 5, 304; Barazesh, 2014 AD/1394 SH: 15, 606) This means that iron is one of the primary resources that God created, not something that came into existence due to certain factors. Consequently, the Imam (AS) expresses the conceptual interpretation of the verse with these explanations, which is one of the methods of interpretation, and these concepts are not derived from the apparent meaning of the verse. As previously stated, there is no contradiction with the idea that iron was first created in the heavens because the place of creation is not mentioned.

2.2.3.2. Non-Annihilation of Matter and Energy

In the exegesis of the verse, "And there is nothing concealed in the heaven and the earth but it is in a clear book," (al-Naml: 75) Imam *Ṣādiq* (AS), in addition to emphasizing God's encompassing knowledge of everything, refers to the preservation of the soul and body in their respective places. He specifically emphasizes the preservation of the body's components in the soil from which they were created, even after these components have been eaten by predators and insects and expelled from their bodies.

In this regard, he states: "...The body becomes dust from which it was created, and what predators and vermin throw out from their bellies, whatever they have eaten and torn apart, all of that is preserved in the dust with Him from who not even the weight of an atom in the darkneses of the earth escapes..." (Majlisī, 1982 AD/1403 AH: 7, 38; Barazesh, 2014 AD/1394 SH: 12, 302)

"Mazzaqa" means to tear, disintegrate, and scatter (Farāhīdī, n.d.: 5, 94; Jawharī, 1989 AD/1410 AH: 4, 1554; Kharazmi, 2007 AD/1386 SH: 255).

This statement of Imam *Ṣādiq* (AS) aligns with scientific principles in thermodynamics, especially the law of conservation of mass and energy, which states that energy and mass are not destroyed but transformed from one form to another (Yousefi, 2023 AD/1402 SH). Therefore, the narration of Imam *Ṣādiq* (AS) is not only consistent with contemporary scientific findings but also provides an accurate scientific prediction of the matter cycle in nature. A significant point in the Imam's (AS) statement is the distinction between the soul and the body. While the soul retains its identity and form after separating from the body, the body decomposes and is recycled in the cycle of nature.

Since the body needs something from its original source for renewal and resurrection towards the Day of Judgment, something must remain in the soil, and God is aware of everything that exists in the darkness of the earth and soil, and it is preserved in His knowledge. In this regard, attributing the preserved components in the soil to stem cells is a strong possibility. This is because these cells have the ability to self-renew and differentiate into various cell types (Barati, 2024 AD/1403 SH, Articles) and can play an important role in the reconstruction and renovation of body structures. This interpretation shows that the Imams (AS), using deep knowledge and methods of interpretation, were able to explain the verses of the Quran accurately and clearly and express their esoteric meanings with a profound and scientific perspective.

2.3. Exegesis Based on the Quran

In this type of exegesis, the Imam (AS), to interpret a scientific verse, brings another verse or verses to provide a clearer explanation of a word or the entire verse, and citing divine verses, mentions the reason for his statement or confirms his statement.

2.3.1. Explanation of the Reason

In this method, the Imam (AS) explains the ruling or wisdom behind the events mentioned in the verse.

2.3.1.1. The Reason for Transformations in Nature and Creation

It is narrated from Imam *Riḍā* (AS): "He was asked: "What is the origin of water?" He said: "The origin of water is the fear of God." (Majlisī, in explaining this, says: "First, God created a gem and looked at it with an angry gaze, and that gem melted into water out of awe

and fear of God") (Majlisī, 1982 AD/1403 AH: 57, 180)

Part of the water, as a result of rain from the sky and its flow in surface springs and subsurface aquifers, flows in underground springs, and part of it has lands located on it. But the root of both is one place, which is sweet and palatable. He asked: "How do springs of oil, sulfur, tar, salt, and the like emerge from them?" The Imam (AS) said: "The essence of the earth changes the water, like the transformation of grape juice into wine and from that into vinegar, just as pure milk comes from digested food and blood." He was asked: "Where do these essences come from?" The Imam (AS) replied: "As a result of changes, just as a sperm turns into a clot and then into a lump of flesh, and it is created from the combination of the four opposites in the body." He was asked: "How was the earth created from water, while water is cold and wet, and the earth is dry and cold soil?" He said: "Its moisture is gone, and it becomes dry." (Majlisī, 1982 AD/1403 AH: 6, 112; Ibn Shahr Āshūb, 1959 AD/1379 AH: 4, 354)

In this narrative, Imam *Riḍā* (AS) answers key questions about the origin of water creation, geological transformations, and how hydrothermal and hydrocarbon mineral resources are formed. By utilizing verses from the Quran and vivid analogies, he explains complex concepts in a clear and understandable manner. After water, oil is another liquid to which humans are most dependent. Hydrocarbon reservoirs refer to underground reserves of crude oil and natural gas. Natural gases, alone or together with oil, form a deposit, in which case the gases are dissolved within the oil.

"A necessary condition for oil and gas deposits is the presence of layers rich in organic

matter within the sedimentary basin; such layers are called source rocks. Because the source rock must preserve the organic matter and prevent it from oxidizing, the source rock is formed in specific sedimentary environments and must be placed in special conditions for oil and gas production." (Afshar Harb, 2007 AD/1386 SH: 43)

"Oil is the most important reservoir fluid. Crude oil is dark brown to black with a shade of reflected light in green, and its odor depends on the amount of volatile light hydrocarbons and the amount of sulfur. It is a mixture of different hydrocarbons; therefore, their physical and chemical properties and the percentage of distillation at constant temperature intervals are not the same; under the influence of different temperatures and pressures with a fixed hydrocarbon composition, different types of oil and gas reservoirs are created." (Afshar Harb, 2007 AD/1386 SH: 174-175 and 197) "Hydrothermal mineral resources are important geological formations that are created from the interaction of hot water with minerals in the Earth's crust. Minerals that precipitate from hydrothermal fluids can form various reserves of valuable resources, including metals such as gold, silver, copper, and others. Thermal processes in hydrothermal systems can lead to the production of hydrocarbons and the formation of oil reservoirs. The proximity of hydrothermal mineral deposits to oil reservoirs can indicate a favorable geological environment in which both mineral resources and hydrocarbons are present. Hydrothermal activity can lead to the alteration of organic matter and the production of bitumen, which eventually turns into asphalt." (Kaikai Li and society, 2023)

The Imam (AS) points to the essence of the earth and similar instances, explaining the

processes of change and transformation they undergo. He likens the emergence of these essences to changes akin to the stages of fetal development (from sperm to zygote to embryo), indicative of fundamental transformations in the structure of matter. The narration indirectly alludes to the importance of groundwater and its role in the formation of vital resources, such as oil. By stating that the essence of the earth transforms water into other materials, the Imam (AS) implicitly refers to the complex geological and chemical processes that lead to the formation of oil and other underground resources. The Imam's (AS) explanations regarding the transformation of materials and the formation of resources are consistent with current scientific findings in geology, particularly concerning the origin of oil and its derivatives. Imam *Riḍā* (AS) employs conceptual descriptions and answers the cause of these changes by citing several verses. He not only elucidates scientific matters but also broadens the semantic horizons of the Quranic verses, establishing a profound connection between religious concepts and natural phenomena. Considering scientific advancements, this interpretation not only aids in a better understanding of the verses but also demonstrates the scientific miracle of the Quran and the prophetic truthfulness of the impeccable Imam (AS) regarding the structure of the universe.

2.3.2. Visualization

Visualization is one of the methods of interpreting the Quran, in which the Imams (AS) use tangible and understandable images for the audience to clarify profound and complex concepts. This method can be particularly helpful in cases where the content of the verse is unfamiliar to the audience or difficult to understand.

2.3.2.1. Number and Distance of the Earths

In response to a question about the structure of the heavens and the earths, Imam *Riḍā* (AS) provides a depiction of them using his hands. Relying on a verse from the Quran, he elaborates on the details of this structure. The Imam (AS) opened his left hand as the earth and his right hand as the lowest heaven and said: "The heavens of this world are like a dome above it, and the second earth is above the heavens of this world, and the second heaven is like a dome above it, and the third earth is above the second heaven, and so on... and the Throne of the Most Compassionate God is above the seventh heaven, and this is the word of God, the Almighty and Glorious, who says: "He who created seven heavens in layers, layer upon layer, and of the earth, a like thereof. The command descends between them." It was asked: "So, beneath us, there is only one earth?" He said: "Beneath us, there is only one earth, and the six earths are above us." "... He then spread his left palm, then placed his right palm upon it and said: This is the earth of this world, and the heaven of this world is above it like a dome, and the second earth is above the heaven of this world... He said: There is nothing beneath us except one earth, and the six are above us." (Qummī, 1983 AD/1404 AH: 2, 328; Majlisī, 1982 AD/1403 AH: 75, 75, 80; Ḥuwayzī, 1994 AD/1415 AH: 5, 366; Baḥrānī, 1994 AD/1415 AH: 5, 414-415; Barazesh, 2014 AD/1394 SH: 16, 374)

Therefore, the Imam (AS) explains the position and distance of the earths and heavens with precise and tangible imagery. This imagery is such that each earth has a separate heaven that surrounds it, and each has its own gravitational force. Here, the authenticity and difference of the various earths and the existence of life on them are depicted. According to researchers, "After the tenth

century AH, it was established that the earth is not limited to the earth we inhabit. Regarding the multiplicity of earths, two categories of narrations have been received, some of which refer to the existence of intelligent inhabitants on them. The other category of narrations does not specify whether the inhabitants of those earths are intelligent or not." (Rizaei, 2013 AD/1393 SH: 240)

Ṭabarī narrated a tradition from the Holy Prophet (PBUH) who said: "There are seven heavens above this heaven and seven earths beneath this earth, the distance between each being 500 years." (*Ṭabarī*, 1991 AD/1412 AH: 28, 99)

This narration emphasizes the vastness of the universe and the presence of God everywhere. Perhaps the narration was expressed in this way according to what the people of that time understood.

Ṭabrisī, in an attempt to refute the theory of those who introduce the seven earths as being connected (like continents), states; those seven lands are not connected to each other; rather, they are scattered in the sky like other celestial bodies; for if they were joined and connected to each other, they would be one land, not seven. He (the narrator) also refers to the existence of creatures in those lands (*Ṭabrisī*, 1952 AD/1372 AH: 10, 467).

Consequently, *Ṭabarī* and *Ṭabrisī*, by citing narrations from the Impeccable (AS) in their interpretations, have alluded to the scientific points of the verse as well. The aforementioned narration from Imam *Riḍā* (AS) explicitly refers to contemporary science, as he states that beneath us there is only one land and those six lands are above us. It is evident that all celestial bodies, including lands and other planets, are in the sky and located in different directions around our Earth.

As Imam Khomeini, considering the verse "Indeed, We have adorned the nearest heaven with an adornment of stars" (al-*Ṣāffāt*: 6) and based on the theory of substantial motion, states: "Contrary to the Ptolemaic system, all planets and stars are in the first heaven, and the Quran also states that all stars and planets are in the nearest heaven." According to his view, "Whatever has been discovered in modern sciences regarding planets and stars are all lower than the first heaven, and the first heaven begins after these stars; therefore, he says: after these stellar details, there is another arrangement." (Khomeini, 2002 AD/1381 SH: 3, 429)

Therefore, the interpretation of Imam *Riḍā* (AS) and other commentators demonstrate a deep connection between modern science and religious texts, which is still worthy of reflection and discussion. The Imam (AS), by providing a scientific interpretation of the mentioned verse, directly and explicitly, has utilized the method of interpreting by relying on the Quran and has revealed the scientific secret of the Quran.

2.3.3. Ultimate Statement

"Some religious teachings are such that believing in them or acting upon them results in a consequence for the believers or those who act upon them. This consequence is called the ultimate goal." (Ma'aref and Ojaghlo, 2006 AD/1385 SH: 160)

2.3.3.1. The Movement of Mountains or the Earth

In a narration from *Ibn 'Abbās*, to support his interpretation of the verse "And when the mountains are moved," (al-*Takwīr*: 3) he refers to the verse "Scattered dust" (al-*Wāqī'ah*: 6) and states...

The movement of mountains means they become like a mirage, eventually scattering like dust (Ṭabarī, 1991 AD/1412 AH: 30, 42). *Ibn 'Abbās*, in fact, interprets the aforementioned verse with the help of another verse from the Quran. In interpreting the verse "You see them as solid, yet they pass as the passing of clouds," (al-Naml: 88) *Ibn 'Abbās* only defines the word "*Jāmidah*" (solid) as "*Qā'imah*," (standing, upright) and does not comment on the rest of the verse (Ṭabarī, 1991 AD/1412 AH: 20, 15 and Ibn Abi Ḥātam, 1998 AD/1419 AH: 9, 2933). *Qurṭubī* narrates from *Ibn 'Abbās* a more complete explanation: "Meaning standing upright while moving rapidly," i.e., they are moving swiftly (Qurṭubī, 1944 AD/1364 AH: 13, 242). When the Earth's rotation and the occurrence of day and night, as well as gravity, were discovered by scientists, the rotation of mountains and everything else on Earth was also discovered along with the Earth's rotation, while they appear to be stationary. Objects are not separated from the Earth by gravity to remain suspended in space, but rotate with the Earth.

Ali ibn Ibrahim uses the aforementioned verse (al-Naml: 88) to support his interpretation of the previous verse. He states: "When the mountains are set in motion." (al-Takwīr: 3) "That is, the mountains, like this verse "You see them as solid, yet they pass as the passing of clouds," (al-Naml: 88) appear motionless while moving swiftly." (Majlisī, 1982 AD/1403 AH: 7, 107; Barazesh, 2014 AD/1394 SH: 11, 120)

The verses of Surah *al-Takwīr* depict a time when everything is transformed to prepare for the events before and after the Day of Judgment. One of those conditions is the transformation of the mountains into a new form, to which *Ali ibn Ibrahim* has also paid attention. Consequently, although he seems to envision the meaning of the verse in the conditions of the Day of Judgment, as stated in

the previous verse, he does not say that this verse is exclusively related to the Day of Judgment. Rather, it is understood from his words that he refers to the verse (al-Naml: 88) to approximate the concept of the movement of mountains.

Suyūṭī, by citing the aforementioned narration from *Ibn 'Abbās*, interprets "The solidity of the mountains to mean their uprightness." (Suyūṭī, 1983 AD/1404 AH: 5, 118)

Makarem considers verse 88 of *al-Naml* to be related to this world, not the events of the Resurrection. In this discourse, "The Mountains are moving with great speed, and along with the movement of the mountains, the lands connected to them are also moving."

Consequently, (the earth moves like the movement of clouds), and the movement of clouds is consistent with mechanical movement, although the context of the verse is suitable for the Day of Judgment. He considers the reason why the mountains are the focus of discussion in the verse to be their heaviness and stability in people's view, and considers this verse to be one of the scientific miracles of the Quran, because "Galileo Galilei of Italy and Copernicus of Poland were among the first scientists who discovered the movement of the Earth in the early 17th century, while the Quran revealed this scientific truth more than a thousand years ago, which is the mechanical movement of the Earth around itself and the sun." (Makarem, 1992 AD/1371 SH: 15, 569-570)

Lady *Amin* also states, "Not only is the verse not restricted to the Day of Judgment, but according to verse 5 of Surah *al-Qiyāmah*, the mountains have already been scattered and destroyed during the Resurrection, and there are no more mountains left at the time of the blowing of the trumpet (27:87)." (Amin, n.d.: 9, 374) Therefore, she considers the verse to be related to the world and one of the Quranic

miracles. Of course, some argue about the presence of scientific miracle in the verse, "Because even before Galileo, some like Pythagoras and Archimedes, who lived before Christ, believed in the Earth's movement, and a scientific miracle is when it is stated for the first time." (Rezaei Esfahani, 2008 AD/1387 SH: 15, 242) In all these interpretations, the Earth's axial rotation is mentioned.

As a result, the commentators also referred to the movement of the mountains, but Makarem and Amin had a better and more complete conclusion from this movement. This is probably because the movement of the Earth was discovered by scientists during the time of these two commentators, and they interpreted and understood the meaning of the verse based on the definitive discoveries of scientists. Therefore, a commentator, by benefiting from new sciences, can better understand the true meaning of the scientific verses of the Quran and better understand the Quran's relevance in all ages, according to the narration of Imam *Ṣādiq* (AS).¹

Conclusion

The interpretative examples of the Imams (AS) and the Companions regarding the scientific verses of the Quran indicate that in this interpretative journey within the field of geology, among the three interpretative styles – linguistic explanation, conceptual interpretation, and reliance on the Quran – the method of conceptual interpretation was used more often to present their ideas.

The Imams' (AS) special attention to the scientific points in the Quranic verses and their clarification of those points with the help of other Quranic verses and rational reasoning were among other findings of this research, which were manifested in examples such as subsidence, extraction of iron from mines, sending down of iron, the emergence of continents, the non-annihilation of matter and energy, the number and distance of earths, the cause of natural transformations, and other instances.

From the exploration of geological verses, scientific narrations, and natural sciences, it became clear that the Imams (AS), in addition to paying attention to the natural sciences discovered in their time, stated matters that were discovered centuries later. They not only kept the verses that alluded to such sciences secret but also used various methods to convey them, such as imagery, stating the ultimate purpose, conceptual interpretation, specifying examples, semantic explanation, explaining vocabulary, and so on. Islamic scholars and commentators throughout history have strived to reconcile religious beliefs with the scientific discoveries of their time.

The statements of the Imams (AS) in interpreting the geological verses of the Quran have a significant role in the correct understanding of these verses and are considered one of the most important foundations of Quranic interpretation.

Religious teachings and scientific findings are not only not in conflict with each other but are complementary in better understanding the world and the place of humans in it. A careful examination of the narrations shows that these teachings contain precise scientific points and are compatible with the findings of the modern world.

1. "The Quran is alive, it has not died. It flows like the night and day, and like the sun and the moon. It flows upon our last generation as it flowed upon our first." The Quran is eternal, flowing and renewing itself like night and day, and the moon and the sun. Just as it flowed upon the people at the time of its revelation, it also flows upon the groups of people who will come into existence in the future ('Ayyāshī:2, 204; cf. Bahjatpour: 122).

Religious teachings and scientific findings are not in conflict with each other, but rather complement each other in order to better understand the world and humanity's place in it. Careful examination of narrations reveals that these teachings contain precise scientific points that can be adapted to the latest global findings.

In some cases, the scientific allusions made by the impeccable Imams (AS) have surpassed the discoveries of scientists. Perhaps discovering scientific realities from their narrations will not only draw scientists' attention to those sciences but also lead to an understanding of these revered figures beyond religious circles.

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