



Atmospheric Water in the Qur'anic Perspective: A Linguistic and Scientific Analysis of the Concept of *ar-Raj'* in Surah Ath-Thariq Verse 11

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Abstract. This article examines the concept of *ar-raj'* in Surah At-Tariq verse 11 through a semantic and scientific analysis to reveal the Qur'anic description of atmospheric water. Semantically, *ar-raj'* derives from the root meaning "to return" but also encompasses the notion of "storage" or "containment," as interpreted by classical Arabic lexicons and exegetes. This indicates the sky's function not only in returning rain to Earth but also in serving as a reservoir that holds and manages water vapor before releasing it as rain. Scientifically, this corresponds with the atmospheric processes in which the sky acts as a massive system for storing, condensing, and precipitating water, reflecting the water cycle understood in meteorology. The study uses a qualitative library research method combining semantic analysis of the Qur'anic term with scientific data on atmospheric water systems. The findings show that the Qur'an's use of *ar-raj'* encompasses both *i'jaz bayani* (the linguistic eloquence and precision of expression) and *i'jaz 'ilmi* (the scientific miraculousness), illustrating natural phenomena with terms that convey layered and multifaceted meanings. This research contributes to contemporary Qur'anic studies by highlighting the integrated relationship between divine revelation, language, and empirical science.

Keywords: *Ar-raj'*, Atmospheric Water, *I'jaz bayani*, *I'jaz 'ilmi*, Scientific Miraculousness, Semantic Analysis

1 Introduction

Along with the advancement of time and technology, humans are increasingly able to understand the knowledge contained in the Qur'an more deeply. This is one proof of the miracle of the Qur'an in the modern era, which has been recognised by various researchers and scientists. However until now, orientalist still doubt the authenticity of the Qur'an while for the adherents, the Qur'an is believed as a guideline and instruction for the pious people. Charles J. Adams (1924-2011 AD) who was a former professor of Islamic studies at McGill University said that the belief that the Qur'an is authentic from Allah is only due to dogmatic factors and cannot be proven by facts and historical studies. the understanding of the Qur'an is purely from Allah and free from the human element, which is the attitude of traditional and orthodox Muslims. Because

for him, the concept of the Qur'an is similar to the Bible, namely "reception of revelation", which is the inspiration of revelation which then words are formulated by the Prophet Muhammad pbuh.

In fact, the Qur'an itself challenges anyone who doubts the origin of its divinity in six verses (QS. al-Baqarah [2] : 23, an-Nisa [4] : 82, Jonah [10] : 38, Hud [11] : 13-14, Al-Isra' [17] : 88, At-Thur [52] : 33-34) to make a similar counterpoint. However, since the time of the Prophet Muhammad until now, no human being has been able to create a work comparable to the Qur'an. Kementerian Agama RI, *Air Dalam Perspektif Al-Qur'an Dan Sains* (Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2011), p. xix The inability of humans to imitate the Qur'an is scientific evidence that the Qur'an is not the work of man, but the word of Allah, the Lord of the universe. The Qur'an contains aspects of miracles in every detail of its verses, both visible and invisible, as mentioned in his book that the miraculous aspect of the Qur'an is found in every sentence and every verse. Abdul Hamid, *Pengantar Studi Al-Qur'an* (Jakarta: Kencana, 2016), p. 3 This statement can be proven through scientific signs that are in accordance with the verses of the Qur'an and relevant to the development of the times.

The scientific interpreter, Zaghul An-Najjar, explains that the Qur'an contains many verses that hint at the universe, the process of creation, and cosmic phenomena governed by the *sunnatullah*. Understanding the scientific facts in the Qur'an deepens faith in Allah and proves the truth of the Prophet Muhammad as His messenger. All of these are valuable lesson about God's wisdom and perfection, which encourages people to have more faith in Him.

Many scientific clues are contained in the Qur'an or verses that direct humans to contemplate the creation of the universe and everything in it. These verses are not only intended to inspire an understanding of nature, but also to return humans to the nature of monotheism to Allah. Not only that, the language of the Qur'an is of great beauty and is full of precision in the choice of words and their meanings. This makes it comfortable to read and able to reassure the hearts of the listeners. This feature is one of the rhetorical miracles in the Qur'an.

Therefore, the miracles of the Qur'an can be studied through the linguistic aspects of the Qur'an. Al-Sayyid Al-Jamilī, *Al-I'jāz Al-'Ilmī Fī Al-Qur'Ān* (Beirut: Dār wa Maktabah Al-Hilālī, 1992), p. 10 One of them is the process of atmospheric water formation by analyzing the word *ar-raj'u* in Surah At-Thariq verse 11 which shows how the scientific process is closely related to every word in the Qur'an and has harmony with modern science. Nādiyāh Tayyārah, *Mawsū'at Al-I'Jāz Al-Qur'Ānī Fī Al-'Ulūm Wa Al-Ṭibb Wa Al-Falak* (Abu Dhabi: Dār al-Yamāmah li al-Ṭibā'ah wa al-Nashr, 2007), p. 35 In Surah At-Thariq verse 11, the use of appropriate words plays an important role in revealing the nature of scientific processes occurring in the universe, including the phenomenon of atmospheric water. In the linguistic study of the Qur'an, the correct choice of words is the key to understanding the scientific miracles hidden within it. Sujiat Zubaidi, *'Ilmu Ad-Dalālah Al-Qur'Āniyyah*.

Classical mufasirs, such as Ibn Kathīr in *Tafsīr Al-Qur'ān Al-'Azīm*[11] or Al-Zamakhsharī in his tafsir book *Tafsīr Al-Kashshāf* have explained that the term *ar-raj'u* refers to the rain that descends from the sky after going through the process of evaporation from the earth, then returns again in the form of rainwater with Allah's permission. However, critical questions arise from a linguistic and semantic point of view: If the meaning of the expression *raj'u al-samā'* is simply rain, why does the

Qur'ān choose the word *al-raj'u* rather than *al-maṭar*? Why does the Qur'ānic oath not use this expression: *wa al-samā' i dhāti al-maṭar* instead of *aa al-samā' i dhāti al-raj'?* This question, as posed by Dr. Zaghoul Al-Najjar, leads to further exploration of the beauty of the Qur'ānic language (*Al-I'jaz al-Bayani*) as well as opening up the possibility of a connection with scientific miracles (*Al-I'jaz Ilmi*) so that it is clear that the word *ar-raj'u* in this verse has a broader meaning than just rainfall, although rain is essential for the survival of life on earth.[13] So, what exactly is meant by *ar-raj'u* in this noble verse?

In addition, water vapour affects the global climate by transporting energy and adding to the greenhouse effect, as warmer air holds more water vapour, amplifying global warming in a positive cycle. As a result, temperatures rise, more water evaporates, and extreme rainfall, floods or droughts occur, disrupting weather patterns. The increase in Earth's temperature is mainly caused by human activities, such as greenhouse gas emissions, fossil fuel combustion, land change, and industrial activities. Although essential to the hydrological cycle, excess water vapour due to global warming can trigger climate imbalances that have significant impacts on life on Earth.

The problem raised in this research is related to an atmospheric phenomenon that people are rarely aware of, namely the existence of water in the form of vapor in a very thin layer of the atmosphere with a major influence on the climate and weather on Earth. It is important to understand how water in the atmosphere can process until it becomes rain that falls to earth. This research aims to reveal how the concept of atmospheric water stored in Surah At-Thariq verse 11 relates to the scientific explanation of the water cycle in the atmosphere.

With this background, the question arises on how the explanation of atmospheric water in the Qur'an can be integrated with modern scientific knowledge? Researchers are encouraged to examine the meaning of water stored in the sky in Surah At-Thariq verse 11 through linguistic approaches and scientific miracles. The linguistic approach is used to understand the meaning of words and language structures in the verse, while the scientific miracle theory is based on the views of the *mufasssirs* and scientific findings related to the process of water in the atmosphere. This research is expected to reveal the relationship between the concept of atmospheric water in the Qur'an and modern scientific knowledge, thus further strengthening the understanding of the miracle of the Qur'an in explaining natural phenomena.

2 Method

A research method is the procedural steps for obtaining scientific knowledge. This research uses library research which collects data from written materials such as books, manuscripts, documents, images, and Qur'anic interpretation. Data sources are divided into primary sources as the main reference and secondary sources as supporting data relevant to the topic. Data collection is done through documentation, namely tracing and analyzing books, journals, catalogues, and other related writings. In the analysis of data, the analytical method is used, namely organizing and grouping data into certain patterns or categories to find meaning, as well as the descriptive method, namely describing and interpreting data in detail and systematically, both reflectively and

comparatively, in order to obtain a clear understanding of the interpretation of Qur'anic verses.

3 Results and Discussion

3.1 The Concept of *Al-I'jaz* in the Qur'an: *al-Bayani* and *al-'Ilmi*

This study is a research that focuses on discussing the aspects of relationship or interrelationship between language miracles and scientific miracles in the Qur'an. Linkage is defined as a word that connects two ways, such as: connecting and uniting between the two, "connecting between two cities, hearts, thoughts, events-connecting one person with another," Umar Muhammad Mukhtār 'Abd Al-Ḥamīd, Mu'jam Al-Lughah Al-'Arabiyyah Al-Mu'Āsirah (Beirut: 'Ālam al-Kutub, 2008), p. 845 The relationship discussed in this research is a reciprocal relationship or something that has cause and effect.[20]

Al-I'jāz Al-Bayānī is a method of interpretation that highlights the beauty of the structure of the Qur'ān. This method can be used to understand the Qur'ān from the point of view of language as a part of arts. By understanding the miracles in terms of language, literature, structure, and rhetoric, we can understand scientific signals in the Qur'ān. Abd al-'Azim Ibrahim Muhammad Al-Muṭ'ani, Khaṣā'ish Al-Ta'bīr Al-Qur'ānī Wa Simātuh Al-Balāghiyah (Kairo: Maktabah Wahbah, 1992), p. 137 Linguistic miracles include everything related to the expression of words in the Qur'ān.[23] Through semantic analysis and *al-i'jaz al-bayani*, the meaning of the word *ar-raj'* can be interpreted not only lexically as "the returner" but also in relation to atmospheric water cycle phenomena such as evaporation, condensation and precipitation. This approach opens up the insight that the Qur'ān not only conveys a spiritual message but also contains scientific cues that are relevant to the discoveries of modern science. Thus, semantic studies are key in connecting the linguistic meaning of Qur'ānic verses with the scientific phenomena contained therein. Wahyu Hanafi Putra, Linguistik Al-Qur'an: Membedah Makna Dalam Konvensi Bahasa (Indramayu: Penerbit Adab, 2020), p. 2

In addition, the foundation in examining the meaning of the Qur'anic verses related to natural phenomena in this study is science interpretation. Science interpretation is an approach in the interpretation of the Qur'an that seeks to reveal the content of the Qur'anic verses related to natural phenomena and science. This approach combines textual understanding of the Qur'an with modern scientific findings to show that the Qur'an does not only talk about spiritual and legal aspects, but also contains hints about the laws of nature and the creation of the universe. It aims to reinforce the belief that science and religion do not contradict but rather complement each other. Science interpretation or interpretation based on scientific methods consider historical and cultural context in which the Qur'ān was revealed. Many Qur'ānic verses have a historical background and specific conditions at the time of the Prophet Muhammad and the early Muslims. Therefore, an interpretation that understands this context will provide a better understanding of the original intent of the verses.

The scientific signs found in the Qur'an are commonly called *i'jaz ilmi* or miracles of Allah revealed through scientific discoveries in modern times [29]. Science in the

Qur'an is part of the scientific *i'jaz* in the Qur'an, namely information about natural sciences that were not yet known at the time the Qur'an was revealed or in the Prophet Muhammad ﷺ era. However, what has been mentioned can be proven in the modern era. This is proof of Allah's power in perfecting the universe.[30]

Researchers in this study focus on linguistic and scientific approaches with a deep understanding of the scientific *i'jaz* in the Qur'an. This approach is relevant to the views of the *mufasssirs* who developed *bayani* interpretation and scientific interpretation in interpreting the *kauniyah* verses. Through the application of these two approaches, it is expected to strengthen the understanding of the meaning contained in Surah At-Thariq verse 11 as the subject of this research. With a comprehensive understanding, it is expected that the secret of the miracle of the Qur'an related to the phenomenon of atmospheric water can be revealed, thus producing information beneficial for the development of science and mankind.

3.2 Atmospheric Water: A Scientific Overview

Water in the atmosphere is found in gaseous form (vapour) as a result of evaporation of seawater, puddles, streams, and transpiration of plants due to heating by sunlight. Its content, called air humidity, varies from place to place. Kementerian Agama RI, Air Dalam Perspektif Al-Qur'an Dan Sains, p. 56 Water vapour itself plays a very important role in the climate system. As water vapour is a greenhouse gas, warming will continue to increase the amount of water vapour in the air until a balance of water vapour concentration is reached.

Atmospheric water refers to the entire water content of the Earth's atmosphere, primarily in the form of water vapour, but also including liquid water droplets in clouds and ice crystals in the higher layers of the atmosphere. Although water vapour only accounts for about 0.25% of the total mass of the atmosphere, it plays a vital role in sustaining life on earth, regulating climate and driving the hydrological cycle.

Water vapour mainly comes from the evaporation of seawater, lakes, rivers, and soil moisture, coupled with plant transpiration, collectively called evapotranspiration.³⁵ After evaporating, water vapour rises with warm air currents. On reaching the colder layers of the atmosphere, the water vapour condenses, forming cloud droplets or ice crystals depending on the temperature and atmospheric pressure. These droplets then combine and grow until they eventually fall as rain, snow, hail or drizzle, returning water to the Earth's surface.³⁶

Atmospheric water also serves as a powerful greenhouse gas, affecting the Earth's heat balance. Water vapour absorbs and emits infrared radiation, contributing to the natural greenhouse effect that maintains global average temperatures suitable for life. In addition, the latent heat released during condensation and absorbed during evaporation is critical in the transfer of energy within weather systems, influencing wind patterns, storm formation and regional climate phenomena. The amount of water

³⁵ Evapotranspiration is a combination of two processes, namely evaporation and transpiration. Evaporation is the process of evaporation or loss of water from soil and water bodies (abiotic), while transpiration is the process of water leaving the plant (biotic) due to the process of respiration and photosynthesis.

³⁶ [32], p. 2

vapour in the atmosphere varies greatly depending on temperature, location and air pressure. In tropical regions, the concentration is much higher, resulting in cloud formation and abundant rainfall. In contrast, polar regions have little water vapour due to low evaporation rates.

Modern meteorological science uses advanced tools such as radiosondes, microwave radiometers and satellite remote sensing (e.g. NASA's Aqua satellite and ESA's MetOp) to measure atmospheric moisture profiles, cloud water content and precipitation levels globally. An understanding of atmospheric water dynamics is critical for accurate weather forecasting, climate modelling, drought assessment and sustainable water resources management. Overall, atmospheric water is an important link in the hydrological cycle, functioning simultaneously as a reservoir, medium and carrier of the earth's water resources, thus sustaining ecosystems, agricultural productivity and human survival.

3.3 Linguistic and Scientific Analysis of *Ar-Raj'* in Surah Ath-Thariq Verse 11

The word *ar-raj'u*, according to Ibn Manzur in *Lisān Al-'Arab* means *maḥbas al-mā'* (water reservoir),³⁹ while Majduddin Fairuzabadi in *al-Qāmūs Al-Muḥīṭ* explains that "*ar-raj'u*" means *mumsik al-mā'* (the place where water is stored). This meaning implies that there is water in the atmosphere stored under proper conditions before it is brought down to the earth. The amount of water in the atmosphere is only 0.25% of the total mass of the atmosphere. If converted into liquid form, this amount is equivalent to the 2.5 cm thick layer of water that covers the entire surface of the Earth. Most of the water in the atmosphere (about 99.5%) is in the form of water vapor, while the rest is in the form of water droplets or ice crystals in clouds. In comparison, the water in Earth's oceans has an average depth of 2.8 km, much greater than the amount of water in the atmosphere. The process of water vaporization from oceans and rivers rising to the atmosphere, forming clouds, and finally falling as rain is a natural cycle. Thus, Ibn Manzur and Fairuzabadi's understanding of the word *ar-raj'u* confirms that the Qur'ān has indirectly described atmospheric phenomena and the water cycle scientifically understood in the modern era.

Scientifically, atmospheric water refers to the water vapor present in the atmosphere as part of the hydrological cycle. The scientific process involving evaporation, condensation (the turning of water vapor into liquid droplets in the form of clouds), and precipitation (the falling of water back to earth in the form of rain or snow) illustrates how water is stored and moved in a repeating cycle. The choice of words used in this verse, such as "*ar-raj'u*," illustrates the repetitive or cyclical process of water occurring in the atmosphere before returning to the earth's surface.

Fakhruddin Ar-Razi, in his tafsir book, *Mafāṭīḥ Al-Ghayb*, interprets "*ar-raj'u*" by "*yatakarraru*" which leads to the meaning of repetition or rotation. Similarly, Hasan Izudin Jamal, in *Maḥṭūṭah Al-Jamal: Mu'Jam Wa Tafsi'r Lughawī Li Kalimāt Al-Qur'ān*, also gives the meaning of "*ar-raj'u*" as "*i'ādah*" or repetition. Throughout these meanings, the word "*ar-raj'u*" can be understood as a representation of a natural process that repeats itself in the hydrological cycle, indicating that water is temporarily

³⁹ Ibnu Mazhur, *Lisān Al-'Arab* (Beirut: Dar Shadir, 1990), p. 120

stored in the atmosphere before returning to the earth in the form of precipitation. The use of the word *ar-raj'u*, which means repetition or rotation is in line with the process of the hydrological cycle that involves evaporation, condensation and precipitation. Based on this, it is clear that the phenomenon of atmospheric water occurs through various scientific stages that are implied in the choice of words in the Qur'an.

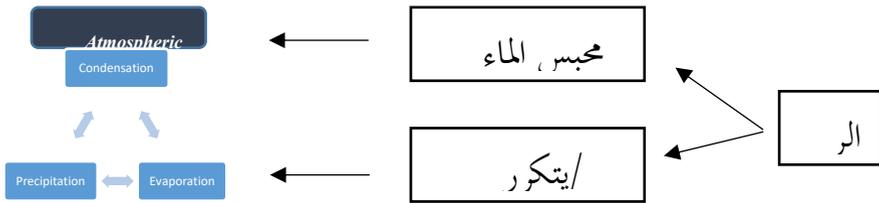


Fig. 1. Scientific Stages

3.4 Scientific Interpretation of Surah Ath-Thariq V zere 11: Correlation with Modern Science

The verse '*wa al-samā'i dhāti al-raj'*' located in the middle of Surah At-Tariq is one of the oath verses in the Qur'an. According to Ibn Ashur, a surah that begins with an oath is to emphasize the truthfulness of the Qur'an in proclaiming the resurrection and other things in the form of guidance. Therefore, the oath with the heavens is repeated as it was with them at the beginning of this surah. In this case, Allah swears by the sky which has the property of '*al-raj'*', which is the property of returning or reflecting. Most classical *mufasssirs* interpret '*al-raj'*' in this verse as rain, because the water vapour is the one that rises from the earth to the sky then returns in the form of rain repeatedly. Rain is considered '*raj'*' because it returns to the earth after the evaporation process, and is part of the continuous cycle of life.[43, p. Hal. 293]

In the book of tafsir *Fath al-Qadīr* by Imam ash-Shukani, he interpreted Surah Ath-Thariq verse 11 which reads '*wa al-samā'i dhāti al-raj'*' by using *lughawi* (linguistic) and contextual approaches. The word '*ar-raj'*' (الرَّجْع) based on his explanation comes from the root word '*ra-ja-'a*' which means to return or restore. Ash-Shukani also explained that what is meant by '*raj'*' here is the rain that continuously falls from the sky then evaporates and returns again in the form of repeated rainfall. In his explanation, it states: 'أي ذات المطر الذي يرجع مرة بعد مرة', which means '(the sky) that has rain which returns repeatedly.' This shows that the meaning of '*raj'*' is not limited to a single event, rather it refers to a repetitive process, i.e. (the water cycle) that occurs continuously.

Sayyid Qutb also gave an explanation in his interpretation of Surah At-Thāriq verse 11 in the book *Fī Zilāl al-Qur'ān*. He explained that this verse has a connection with the verse after it, namely the meaning of '*raj'*' here is water (rain) that keeps returning from the sky repeatedly which forms a cycle, while '*ṣad'*' is a plant that grows so that it divides the surface of the earth. These two phenomena illustrate an orderly and repetitive system of life: Water that descends from the sky and plants that grow from the earth which reflect a general process of life just as semen emanates from the *sulbi* and *tarā'ib*, then later produces a fetus that grows in the womb. Sayyid Qutb also

emphasises that life in this universe runs on a fixed pattern and system, indicating the existence of one Creator (Almighty), who is unequalled in His creation.

However, the Qur'an's choice of the word '*al-raj*' instead of directly using the term '*al-maṭār*' (rain), carries a broader and deeper meaning. In Arabic, the word '*raj*' means to return, restore, repeat, reflect and respond. According to Zaglul An-Najjar, the term '*al-samā' dhāti al-raj*' mentioned in Surah At-Tāriq (verse 11) can scientifically refer to physical phenomena that take place in the layers of the earth's atmosphere as well as the natural structure of the cosmos at large. If '*al-samā'*' refers to the earth's atmosphere, then contemporary scientific studies show that the atmosphere functions as a returning system for various forms of matter and energy. The atmosphere that covers the earth up to an altitude of $\pm 1,000$ km consists of several layers: troposphere (0-16 km), stratosphere (16-50 km), mesosphere (50-90 km), thermosphere (90-500 km), and exosphere (>500 km). After that there are The Radiation Belts, two curved belts that surround the earth, containing protons and electrons trapped by magnetic fields. The inner belt is at an altitude of 3,200 km, and the outer belt at 25,000 km. Al-Najjar, p. 299-301

Zaglul An-Najjar continued that there are seven forms of *raj' al-samā'* that reflect the scientific wonders in QS. Firstly, *raj' ihtizāzī* (the reflection of air vibrations) allowing the spread of sound and echoes through the air which consists of 78% nitrogen and 21.95% oxygen at a speed of 340 m/s at sea level. Secondly, *raj' mā'ī* (water cycle) describing the circulation of 380,000 km³ of water that evaporates and returns in the form of rain, maintaining global water stability. Third, *raj' ḥarārī* (heat reflection) showing the role of the atmosphere and clouds in absorbing and reflecting infrared radiation, protecting the earth from temperature extremes. Fourth, *raj' al-ghāzāt wa al-ghubār* (reflection of gas, vapour, and dust) explaining how volcanic particles and dust return to earth through atmospheric dynamics influenced by pressure, topography, and earth's rotation. Fifth, *raj' al-ash'a'ah al-fawq banafsaḥiyah* (reflection of UV rays) by the ozone layer protecting living things from harmful radiation such as skin cancer. Sixth, *raj' al-mawāj al-rādīwīyah* (reflection of radio waves) by the ionosphere (100-400 km) allowing long-distance communication. Seventh, *raj' al-ash'a'ah al-kawnīyah* (reflection of cosmic rays) by the Van Allen radiation belts and the earth's magnetic field, guarding the earth from high-energy particle attacks.⁵¹

The meaning conveyed by Zaglul An-Najjar shows that there are scientific signals in the Qur'an. Zaglul interprets the meaning of '*ar-raj*' as something that returns from the heavens to the earth. If explored more deeply, the meaning of '*Ar-Raj*' is something that returns from the heavens to the earth. That the word *ar-raj'u*, according to Ibn Manzur in *Lisān Al-'Arab* means *Maḥbas al-Mā'* (water reservoir),⁵² and Majduddin Fairuzabadi in *al-Qāmūs Al-Muḥīṭ* explains that "*ar-Raj'u*" means *Mumsik al-Mā'* (the place where water is stored). Majduddin Muhammad bin Ya'qub Fairuzabadi, *Al-Qāmūs Al-Muḥīṭ* (Mesir: Dar al-Hadits, 2008), p. 621 This meaning implies that there is water in the atmosphere stored under proper conditions before it is brought down to the earth. The amount of water in the atmosphere is only 0.25% of the total mass of the atmosphere. If converted into liquid form, this amount is equivalent to the 2.5 cm thick layer of water that covers the entire surface of the Earth. Adarsh Deepak

⁵¹ Al-Najjar, p. 301-308

⁵² Ibnu Mazhur, *Lisān Al-'Arab* (Beirut: Dar Shadir, 1990), p. 120

Thomas D. Wilkerson and Lothar H. Ruhnke, *Atmospheric Water Vapor* (New York: Academic Press, 1980), p. 164 Most of the water in the atmosphere (about 99.5%) is in the form of water vapor, while the rest is in the form of water droplets or ice crystals in clouds. In comparison, the water in Earth's oceans has an average depth of 2.8 km, much greater than the amount of water in the atmosphere. The process of water vaporization from oceans and rivers rising to the atmosphere, forming clouds, and finally falling as rain is a natural cycle that has been arranged by Allah. Thus, Ibn Manzur and Fairuzabadi's understanding of the word *ar-raj'u* confirms that the Qur'an has indirectly described atmospheric phenomena and the water cycle that have only been scientifically understood in the modern era.

Water in the atmosphere is found in gaseous form (vapor) as a result of evaporation of sea water, puddles, streams, and transpiration of plants due to heating by sunlight. Its content, called air humidity, varies from place to place. Kementerian Agama RI, *Air Dalam Perspektif Al-Qur'an Dan Sains*, p. 56 Water vapor itself plays a very important role in the climate system. As Zaglul An-Najjar explains in his tafsir, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*, that every year, the earth's water evaporates in large quantities. Zaglul explains:

Wa mā'u al-arḍi yatabakkharu minhu sanawiyyan 380.000 kilomītar kubik, aghlabuhā (320.000 km³) yatabakkharu min asṭiḥati al-muḥītāti wa al-biḥār, wa al-bāqī (60.000 km³) min saṭḥi al-yābisa.

This suggests that evaporation is an important part of the hydrological cycle that maintains the Earth's water balance. The process of transporting water from the Earth's surface cools the surface and warms the atmosphere by an average of about 80 W m. Lennart Bengtsson, "The Global Atmospheric Water Cycle," *Environmental Research Letters*, 2010, p. 6 Water vapor is the result of evaporation from oceans, rivers and land, as well as plant transpiration. This process moves water into the atmosphere, allowing the formation of clouds, rain and snow. Without water vapor, the hydrological cycle would be disrupted, and life on earth would be threatened. Water vapor transfers heat energy (latent heat) from the tropics to higher latitudes, creating weather patterns and regulating Earth's temperature. Water vapor helps keep Earth's temperature stable and habitable. Without water vapor, the Earth would be much colder.

In addition to this, water vapour also affects global climate dynamics through the transport of energy and the distribution of water vapour in the atmosphere. Water vapour increases with higher temperatures, as warmer air holds more water vapour. This water vapour amplifies the greenhouse effect, further increasing the Earth's temperature (positive cycle). Sari Marlina, *Dampak Perubahan Iklim Pada Kesehatan Masyarakat* (Pekalongan: NEM, 2022), p. 11 As temperatures rise, more water evaporates, amplifying global warming. In fact, increased water vapour in the atmosphere can lead to more intense rainfall, flooding or drought in certain regions, disrupting global weather patterns. Eddy Elminsyah Jaya, *Pengembangan Sumber Daya Air* (Brebis: UMUS Press, 2024), p. 7 Of course, the Earth's temperature is rising mainly due to human activity itself, which increases the concentration of greenhouse gases in the atmosphere. The main factors causing the Earth's temperature rising include greenhouse gas emissions, land use change, fossil fuel combustion, industrial activities,

increased human population, and positive feedback from natural cycles.[47] This shows that while water vapour plays an important role in the hydrological cycle and the sustainability of ecosystems, its excessive presence due to rising temperatures can also trigger climate imbalances, resulting in significant impacts on weather patterns

4 Conclusion

This study concludes that the term *ar-raj'* in Surah At-Tariq verse 11 has multiple meanings that include linguistic and scientific dimensions. Semantically, *ar-raj'* does not only mean 'return' but also contains the meaning of "shelter" or 'containment,' which represents the function of the atmosphere as a place to store and regulate water vapour before it is sent down to the earth as rain. This meaning is in line with the explanations of classical Arabic dictionaries such as *Lisān al-'Arab* and *al-Qāmūs al-Muḥīṭ*, as well as the interpretations of renowned *mufasssirs* such as Ibn Kathīr and al-Zamakhsharī.

Scientifically, this verse is closely related to the modern understanding of the atmospheric water cycle, which involves the recurring and regular processes of evaporation, condensation and precipitation. The integration of *i'jaz bayani* (linguistic miracle) and (scientific miracle) in this verse demonstrates the precision of word choice in the Qur'ān that not only provides spiritual guidance, but also contains empirical truths newly discovered by modern science.

Thus, this study confirms that the Qur'ān as divine revelation presents a holistic understanding of the universe that transcends temporal knowledge. Its beautiful language structure contains profound scientific cues, emphasising its miraculousness across various disciplines. Future research is recommended to examine other Qur'anic terms related to natural phenomena in order to strengthen the integration of Qur'anic studies and modern science in building an Islamic worldview that is both spiritual and empirical.

References

- [1] A. M. Sulaiman, *Tuhan dan Sains*. Jakarta: Serambi Ilmu Semesta, 2001.
- [2] I. Warraq, *The Origins of the Koran: Classic Essays on Islam's Holy Book*. Prometheus Books, 1998.
- [3] M. J. Scanlon, *Fidelity to Monotheisme*. Syracuse: Syracuse University Press, 1987.
- [4] Kementerian Agama RI, *Air dalam Perspektif Al-Qur'an dan Sains*. Jakarta: Lajnah Pentashihan Mushaf Al-Qurān, 2011.
- [5] A. Hamid, *Pengantar Studi Al-Qur'an*. Jakarta: Kencana, 2016.
- [6] Z. An-Najjār, *Al-Madkhal Ilā Ad-Dirāsāt Al-I'jāz Al-'Ilmī fī Al-Qur'ān*. Beirut: Dar Al-Ma'rifah, 1999.
- [7] A. Mardatillah, E. Dewi, and K. Anwar, "Ayat-Ayat Kauniyah dan Qur'aniyah dalam Perspektif Epistemologi Ilmu," *Lancah J. Inov. dan Tren*, vol. 3, no. 1, 2025.

- [8] A.-S. Al-Jāmilī, *Al-I'jāz Al-'Ilmī fī Al-Qur'ān*. Beirut: Dār wa Maktabah Al-Hilālī, 1992.
- [9] N. Ṭayyārāh, *Mawsū'at al-I'jāz al-Qur'ānī fī al-'Ulūm wa al-Ṭibb wa al-Falak*. Abu Dhabi: Dār al-Yamāmah li al-Ṭibā'ah wa al-Nashr, 2007.
- [10] Sujiat Zubaidi, *Ilmu ad-Dalālah al-Qur'āniyyah*. Yogyakarta: Kurnia Kalam Semesta Press, 2019.
- [11] A. al-F. I. bin 'Umar bin K. al-Q. al-B. thumma Al-Dimashqī, *Tafsīr al-Qur'ān al-'Azīm*, 8th ed. Bayrūt: Dār al-Kutub al-'Ilmiyyah, 1999.
- [12] M. bin 'Umar bin M. Al-Zamakhsharī, *Tafsīr al-Kashshāf*, 4th ed. Beirut: Dār al-Kutub al-'Ilmiyyah, 1995.
- [13] Z. An-Najjār, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*, 3rd ed. Kairo: Maktabah al-Shurūq al-Dawlah, 2010.
- [14] S. Marlina, *Dampak Perubahan Iklim pada Kesehatan Masyarakat*. Pekalongan: NEM, 2022.
- [15] E. E. Jaya, *Pengembangan Sumber Daya Air*. Brebes: UMUS Press, 2024.
- [16] G. Maulani, Nur Cahyadi, and Sugiharti, "Metode Penelitian." Rey Media Grafika, Batam, 2024.
- [17] N. Baidan, *Metodologi Penelitian Khusus Tafsir*. Yogyakarta: Agama Islam Negeri Surakarta, 2015.
- [18] A. A. M. Afdhal Chatra P, Komang Ayu Henny Achjar, Ningsi, Muhamad Rusliyadi, A. Zaenurrosyid, Nini Apriani Rumata, Iin Nirwana, *METODE PENELITIAN KUALITATIF: Panduan Praktis untuk Analisis Data Kualitatif dan Studi Kasus*. Jambi: Sonpedia Publishing Indonesia, 2023.
- [19] U. M. M. 'Abd Al-Ḥamīd, *Mu'jam al-Lughah al-'Arabiyah al-Mu'āṣirah*. Beirut: 'Ālam al-Kutub, 2008.
- [20] Departemen Pendidikan Nasional, *Kamus Besar Bahasa Indonesia*. Jakarta: Balai Pustaka, 2007.
- [21] F. S. As-Samarrai, *Ṭarīq al-Tafsīr al-Bayānī*. Rasyīqah: Jāmi'ah Rasyīqah, 2022.
- [22] A. al-'Azim I. M. Al-Muṭ'ani, *Khaṣā'is al-Ta'bīr al-Qur'ānī wa Simātuh al-Balāghiyah*. Kairo: Maktabah Wahbah, 1992.
- [23] S. Z. Ṣāliḥ and 'Ināyah Al-Mawlā, "Al-I'jāz al-Lughawī fī al-Qur'ān 'inda Badī' al-Zamān Sa'īd al-Nursī," *Kalimah*, vol. 16, no. 1, 2018.
- [24] W. H. Putra, *Linguistik Al-Qur'an: Membedah Makna dalam Konvensi Bahasa*. Indramayu: Penerbit Adab, 2020.
- [25] A. Rosa, *Islam dan Sains dalam Kajian Epistemologi Tafsir Al-Qur'an: At-Tafsīr Al-'Ilmī Al-Kaunī*. Serang: Penerbit A-Empat, 2021.
- [26] A. F. Luqoni, "Paradigma Integrasi Keilmuan dalam Tafsir Salman," Universitas PTIQ Jakarta, 2024.
- [27] I. Goldziher, *Madāhib al-Tafsīr al-Islāmī*. Kairo: Maktabah al-Sunnah al-Muḥammadiyah, 1955.
- [28] A. Sahidin and M. Muslih, "Al-I'jaz al-'Ilmi Al-Qur'an dan Pengembangan Sains," *Konf. Integr. Interkoneksi Islam dan Sains*, 2022.
- [29] L. Erlina and A. Saputra, "Pure Science dalam Wacana Tafsir 'Ilmi Dan I'jaz 'Ilmi," *ZAD Al-Mufasssirin*, vol. 5, no. 1, 2023.
- [30] H. Hidayat, A. R. M. P. J, M. Nazirel, I. Attallah, M. Idris, and M. Seto, "Mu'jizat dan I'jaz Al - Qur'an," *J. Kaji. Islam Dan Sos. Keagamaan*, vol. 1,

- no. 4, 2024.
- [31] O. R. Pinontoan, O. J. Sumampouw, and J. E. Nelwan, *Perubahan Iklim Dan Pemanasan Global*. Sleman: Deepublish Publisher, 2022.
- [32] V. Te Chow, D. R. Maidment, and L. W. Mays, "Applied Hydrology." McGraw-Hill, New York, 1988.
- [33] J. M. Wallace and P. V. Hobbs, *Atmospheric Science: An Introductory Survey*. London: Academic Press, 2006.
- [34] F. K. Lutgens, E. J. Tarbuck, and R. L. Herman, *The Atmosphere: Introduction to Meteorology*. New Jersey: Pearson Education, 2019.
- [35] S. Q. Kidder and T. H. V. Haar, *Satellite Meteorology: An Introductio*. New York: Academic Press, 2019.
- [36] M. M. bin Y. Fairuzabadi, *Al-Qāmūs al-Muḥīṭ*. Mesir: Dar al-Hadits, 2008.
- [37] A. D. T. D. Wilkerson and L. H. Ruhnke, *Atmospheric Water Vapor*. New York: Academic Press, 1980.
- [38] B. Stevens and S. Bony, "Water in the Atmosphere," *AIP Publishing*, Jun-2013.
- [39] A. S. Al-Azizi, *Islam Itu Ilmiah*. Yogyakarta: Laksana, 2018.
- [40] N. C. of E. R. and Training, *Fundamentals of Physical Geography*. New Delhi: Nova Publications, 2020.
- [41] H. I. bin H. bin A. al-F. A. Jamal, *Maḥṭūṭah al-Jamal: Mu'jam wa Tafṣīr Lughawī li Kalimāt al-Qur'ān*. Kairo: al- Hay'at al-Mashriyah al-'Ammah li al-Kutub, 2008.
- [42] M. al-Ṭāhir bin M. bin M. al-Ṭāhir bin 'Āshūr Al-Tūnisī, *al-Taḥrīr wa al-Tanwīr*. Tūnis: al-Dār al-Tūnisiyyah li al-Nashr, 1984.
- [43] Z. R. M. Al-Najjar, *Min Āyāti al-I'jāz al-'Ilmī: al-Samā' fī al-Qur'ān al-Karīm*, Cetakan Ke. Beirut, Lebanon: Dar al-Ma`rifah, 2005.
- [44] M. bin 'Alī bin M. bin 'Abd A. Asy-Syaukānī, *Faṭḥ al-Qadīr al-Jāmi' bayna Fannay ar-Riwāyah wa ad-Dirāyah min 'Ilm at-Tafṣīr*, 4th ed. Beirut: Dār al-Ma`rifah, 2007.
- [45] Sayyid Qutb, *Fii Dzīlal Al-Qur'an*, 1st ed. Beirut: Dar Asy-Syuruq, 2003.
- [46] L. Bengtsson, "The Global Atmospheric Water Cycle," *Environ. Res. Lett.*, 2010.
- [47] J. Kurniawan *et al.*, "Pemanasan Global: Faktor , Dampak dan Upaya Penanggulangan," *J. Sains dan Teknol.*, vol. 3, no. 6, 2024.
- [48] Ibnu Mazhur, *Lisān al-'Arab*. Beirut: Dar Shadīr, 1990.

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