

Reassessing the Interpretation of the Moving Mountains in Qur'an 27:88: An Epistemological Analysis through A. J. Ayer's Verification Principle

Wardaniyanti

Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia

E-mail: wardaniyanti8@gmail.com

Abstract

The interpretation of the "moving mountains" in Qur'an 27:88 has long generated debate within Qur'anic exegesis. Classical exegetes predominantly understand the verse as describing the cosmic events of the Day of Judgment, whereas a number of contemporary scholars interpret it as a scientific indication of the Earth's motion and geological dynamics. Although these interpretations have been extensively discussed from theological and scientific perspectives, limited attention has been devoted to examining their epistemological validity through the framework of modern philosophy of science. This study aims to reassess the interpretation of Qur'an 27:88 by applying Alfred Jules Ayer's verification principle as an epistemological framework for evaluating the scientific claims associated with the verse. Employing qualitative library research, the study analyzes primary Qur'anic commentaries, philosophical works on logical positivism, and contemporary scientific literature concerning Earth's rotation and geological processes. The analysis distinguishes between empirically verifiable propositions and metaphysical propositions in accordance with Ayer's concepts of meaningfulness, analytic and synthetic propositions, and strong and weak verification. The findings demonstrate that the proposition describing the apparent movement of mountains can be interpreted as an empirically meaningful statement when understood in relation to the Earth's rotational motion, whereas theological assertions concerning divine perfection remain beyond empirical verification and belong to the domain of metaphysical discourse. Rather than reducing the Qur'an to a scientific text, this study proposes an epistemological framework that clarifies the limits and possibilities of scientific interpretation within Qur'anic exegesis. By integrating Qur'anic studies, philosophy of science, and contemporary scientific knowledge, this research contributes a critical perspective for evaluating scientific interpretations of the Qur'an while preserving the distinction between empirical inquiry and metaphysical belief.

Keywords: Scientific Exegesis; Alfred Jules Ayer; Verification Principle; Logical Positivism; Epistemology.

Abstrak

Penafsiran mengenai "gunung yang berjalan" dalam QS. An-Naml [27]:88 telah lama menjadi perdebatan dalam kajian tafsir Al-Qur'an. Para mufasir klasik umumnya memahami ayat tersebut sebagai gambaran peristiwa kosmik pada Hari Kiamat, sedangkan sebagian mufasir kontemporer menafsirkannya sebagai isyarat ilmiah mengenai pergerakan bumi dan dinamika geologi. Meskipun kedua kecenderungan penafsiran tersebut telah banyak dibahas dari perspektif teologis dan saintifik, kajian yang mengevaluasi validitas epistemologisnya melalui perspektif filsafat ilmu modern masih relatif terbatas. Penelitian ini bertujuan untuk menilai kembali penafsiran QS. An-Naml [27]:88 dengan menggunakan prinsip verifikasi Alfred Jules Ayer sebagai kerangka epistemologis dalam mengevaluasi klaim-klaim saintifik yang dikaitkan dengan ayat tersebut. Penelitian ini menggunakan pendekatan kualitatif berbasis

studi kepustakaan dengan menganalisis sumber-sumber primer berupa kitab-kitab tafsir, karya-karya filsafat tentang positivisme logis, serta literatur ilmiah kontemporer mengenai rotasi bumi dan proses geologi. Analisis dilakukan melalui konsep kebermaknaan (*meaningfulness*), proposisi analitik dan sintetik, serta verifikasi kuat (*strong verification*) dan verifikasi lemah (*weak verification*) yang dikembangkan oleh Ayer. Hasil penelitian menunjukkan bahwa proposisi mengenai pergerakan gunung dapat dipahami sebagai pernyataan yang bermakna secara empiris apabila dikaitkan dengan pergerakan rotasi bumi, sedangkan pernyataan yang berkaitan dengan kesempurnaan penciptaan Allah berada pada ranah metafisika yang tidak dapat diverifikasi secara empiris. Dengan demikian, penelitian ini tidak dimaksudkan untuk mereduksi Al-Qur'an menjadi teks ilmiah, melainkan menawarkan suatu kerangka epistemologis yang menjelaskan batas-batas sekaligus kemungkinan penafsiran ilmiah dalam studi tafsir Al-Qur'an. Penelitian ini berkontribusi dalam memperkaya dialog antara studi Al-Qur'an, filsafat ilmu, dan sains modern melalui pendekatan evaluatif terhadap validitas epistemologis tafsir ilmiah.

Kata kunci: Tafsir Ilmiah; Alfred Jules Ayer; Prinsip Verifikasi; Positivisme Logis; Epistemologi.

Introduction

Contemporary Qur'anic studies have undergone a significant methodological transformation through increasing engagement with the natural sciences, philosophy of science, and interdisciplinary hermeneutics. This development has elevated scientific exegesis (*tafsīr 'ilmī*) from a marginal interpretive tendency into one of the most dynamic fields within modern Qur'anic scholarship. Rather than confining Qur'anic interpretation to linguistic, legal, or theological analyses, scientific exegesis seeks to examine Qur'anic descriptions of the natural world in dialogue with contemporary scientific knowledge. While this interdisciplinary orientation has broadened the intellectual horizon of Qur'anic interpretation, it has also generated persistent epistemological debates concerning the legitimacy, scope, and methodological limits of employing scientific theories as interpretive instruments for scripture. Accordingly, the relationship between the Qur'an and science is no longer debated merely in terms of compatibility but increasingly in terms of the epistemological criteria through which scientific interpretations should be evaluated. Proponents argue that scientific discoveries reveal meanings already embedded within the Qur'an, whereas critics contend that excessive reliance on modern scientific paradigms risks projecting external epistemological assumptions onto the sacred text and reducing its theological, ethical, and spiritual dimensions to provisional empirical propositions (Supriadi, 2020; Bakar, 2024). Consequently, the central issue is no longer whether revelation and science can coexist, but how scientific knowledge should function within the methodological boundaries of Qur'anic interpretation.

Indonesia has become one of the most productive intellectual contexts for the development of scientific exegesis, producing a variety of epistemological models that reflect different conceptions of the relationship between revelation and science. Rather than representing a single interpretive paradigm, Indonesian scientific exegesis encompasses diverse methodological orientations. Nazwar Syamsu advocates the Qur'anisation of science by interpreting scientific discoveries as confirmations of Qur'anic statements. Achmad Baiquni proposes a dialogical and integrative relationship between revelation and scientific inquiry, whereas Agus Purwanto develops the paradigm of *theo-science*, positioning the Qur'an as the epistemological foundation from which scientific knowledge should emerge rather than merely an object to be confirmed by science (Purwanto, 2015; Ramadhani, 2023). In contrast, M. Quraish Shihab interprets the Qur'an's cosmological verses primarily as theological signs that invite reflection upon divine wisdom rather than as direct scientific propositions (Shihab, 2002; Supriadi, 2020). Earlier contributions by Mahmud Yunus likewise demonstrate attempts to integrate modern scientific concepts into Qur'anic interpretation through engagement with contemporary scientific theories (Garuda, 2025). Collectively, these approaches illustrate the evolution of scientific exegesis into an interdisciplinary discourse connecting Qur'anic studies, philosophy of science, and the natural sciences. At the same time, however, they reveal the continuing absence of an agreed epistemological framework capable of determining when a scientific interpretation may legitimately be regarded as an acceptable exegetical claim.

Among the Qur'anic passages most frequently discussed within this discourse is Qur'an 27:88, which describes mountains that appear motionless while "passing like clouds." The verse occupies a unique position because it has become one of the principal textual foundations employed to support scientific interpretations of the Qur'an. Classical exegetes, including Ibn Kathir and al-Tabari, consistently interpret the movement of mountains within an eschatological framework, understanding it as part of the cosmic transformation accompanying the Day of Judgment. Their interpretation is reinforced by the immediate literary context of Qur'an 27:87–89, which discusses the sounding of the trumpet, universal destruction, and resurrection (IslamWeb, 2016; Ibn Kathir, n.d.; Ibn 'Uthaymin, n.d.). By contrast, many contemporary Muslim scholars and scientists argue that the same verse may describe observable natural phenomena, including the Earth's rotation, revolution, continental movement, or tectonic plate dynamics (Lajnah Pentashihan Mushaf Al-Qur'an, 2019; Emirati Journal, 2023; Nastiari, 2026). This shift from eschatological to scientific interpretation

reflects a broader methodological transformation in contemporary Qur'anic hermeneutics, yet it simultaneously raises a more fundamental question: on what epistemological basis can such scientific interpretations be evaluated?

Existing scholarship on Qur'an 27:88 has developed along four interconnected yet methodologically distinct strands. The first strand comprises classical exegetical studies that consistently interpret the verse within an eschatological framework by emphasising textual coherence, prophetic traditions, and the interpretive legacy of the early Muslim community (Ibn Kathir, n.d.; Ibn 'Uthaymin, n.d.; IslamWeb, 2016). The second strand is represented by scientific exegesis, which correlates the verse with contemporary geological and astronomical theories, including Earth's rotation, plate tectonics, and continental dynamics (Lajnah Pentashihan Mushaf Al-Qur'an, 2019; Emirati Journal, 2023; Nastiar, 2026). The third strand broadens the discussion by examining models for integrating revelation and science, as reflected in the works of Supriadi (2020), Ramadhani (2023), and Bakar (2024). A fourth and more recent strand begins to question the philosophical foundations of scientific exegesis by discussing the epistemological status of scientific knowledge in Qur'anic interpretation. Despite these developments, the four strands generally proceed independently rather than engaging within a shared evaluative framework. Consequently, the literature remains dominated either by attempts to justify scientific interpretations or by theological critiques that reject them, while relatively limited attention has been devoted to establishing explicit philosophical criteria capable of assessing the epistemic status of competing interpretive claims.

This unresolved issue reveals several important gaps in the existing literature. First, previous studies have concentrated primarily on explaining the theological meaning of the verse or demonstrating its compatibility with modern scientific theories, whereas the epistemological validity of the knowledge claims generated by those interpretations remains insufficiently examined. Second, discussions of scientific exegesis frequently become polarised between uncritical acceptance and categorical rejection without distinguishing empirically meaningful propositions from metaphysical assertions. Third, although Alfred Jules Ayer's verification principle occupies a central position in twentieth-century philosophy of science, its potential contribution to evaluating Qur'anic interpretation has received only limited scholarly attention. Consequently, the application of the verification principle as a systematic framework for assessing the epistemological status of scientific interpretations of Qur'an 27:88 remains underexplored.

Responding to these gaps, this study reassesses the competing interpretations of Qur'an 27:88 through the epistemological framework provided by Alfred Jules Ayer's verification principle. Rather than seeking to demonstrate whether the Qur'an predicts modern scientific discoveries, the article evaluates whether the propositions advanced by different exegetical traditions satisfy Ayer's criterion of empirical meaningfulness. Specifically, the study identifies the principal propositions contained within classical and scientific interpretations of the verse, distinguishes empirically verifiable propositions from metaphysical assertions, and examines the implications of this distinction for the epistemological status of scientific exegesis. Accordingly, the guiding question of this study is: How can Alfred Jules Ayer's verification principle serve as an epistemological framework for evaluating the interpretation of Qur'an 27:88, and what implications does such an evaluation have for contemporary scientific exegesis?

This article contributes to contemporary scholarship in three interconnected ways. First, it proposes an epistemological evaluation model for scientific exegesis by applying Ayer's verification principle to distinguish empirically meaningful propositions from metaphysical assertions. Second, it provides a systematic reassessment of competing interpretations of Qur'an 27:88 without privileging either classical or scientific exegesis *a priori*, thereby offering a more balanced evaluative framework. Third, by integrating Qur'anic hermeneutics, logical positivism, and contemporary discussions on scientific interpretation, this study broadens ongoing debates concerning the methodological boundaries of scientific exegesis while preserving the distinction between empirical inquiry and theological commitment.

Methodology

This study employs a qualitative library-based research design situated within the tradition of philosophical inquiry in Qur'anic studies. Rather than seeking to verify scientific phenomena experimentally, the research investigates the epistemological status of knowledge claims generated through the interpretation of Qur'an 27:88. The study adopts Alfred Jules Ayer's verification principle as its principal analytical framework to evaluate whether propositions advanced in competing interpretations of the verse satisfy the criterion of empirical meaningfulness or should instead be understood as metaphysical assertions. Accordingly, the research focuses on epistemological evaluation rather than theological validation or scientific confirmation.

The primary source of data consists of Qur'an 27:88 together with its major exegetical interpretations representing two principal interpretive traditions. The first comprises classical commentaries, particularly those of Ibn Kathir and al-Tabari, which interpret the verse within an eschatological framework by emphasising textual context, prophetic traditions, and the understanding of the early Muslim community. The second consists of contemporary scientific interpretations, including *Tafsir Ilmi* published by the *Lajnah Pentashihan Mushaf Al-Qur'an*, studies by Nastiar (2026), and other scholarly works that associate the verse with geological and astronomical phenomena such as Earth's rotation, plate tectonics, and continental movement. Secondary sources include literature on scientific exegesis, the philosophy of science, logical positivism, and Alfred Jules Ayer's verification theory, together with recent studies discussing the relationship between revelation and scientific knowledge.

Data were collected through systematic documentation of relevant textual materials from primary and secondary sources. Each interpretation of Qur'an 27:88 was identified and organised according to its principal knowledge claims concerning the movement of mountains. These interpretive claims were subsequently transformed into explicit epistemological propositions to facilitate philosophical analysis. Rather than comparing exegetical opinions descriptively, the study reconstructs the logical structure underlying each interpretation by identifying its empirical assumptions, theological premises, and explanatory conclusions.

The analytical procedure consists of four sequential stages. First, the study conducts a textual analysis of Qur'an 27:88 alongside selected classical and contemporary interpretations to identify the principal propositions advanced by each exegetical tradition. Second, these propositions are categorised according to Ayer's distinction between empirically verifiable statements and metaphysical propositions. Third, each proposition is evaluated using the verification principle, particularly Ayer's concept of weak verification, to determine whether the interpretive claim possesses empirical meaningfulness or derives its validity primarily from theological commitment. Finally, the findings are interpreted within the broader discourse of scientific exegesis to examine their implications for the epistemological boundaries of interpreting Qur'anic cosmological verses in light of modern scientific knowledge.

To enhance analytical rigour, the study employs source triangulation by comparing interpretations originating from classical exegesis, contemporary scientific exegesis, and philosophical literature. Rather than privileging one interpretive tradition over another, the analysis evaluates each interpretation according to the same epistemological criteria derived

from Ayer's verification principle. This comparative strategy enables a balanced assessment of competing knowledge claims while minimising interpretive bias and maintaining consistency throughout the analytical process.

Through this methodological framework, the study does not seek to determine whether the Qur'an predicts modern scientific discoveries. Instead, it examines the epistemological status of scientific interpretations by clarifying which elements constitute empirically meaningful propositions and which belong to the domain of metaphysical belief. Consequently, the research positions Ayer's verification principle as an evaluative framework for assessing the methodological legitimacy and epistemological limits of scientific exegesis in contemporary Qur'anic studies.

Results and Discussion

A. Epistemological Classification of Propositions in the Interpretation of Qur'an 27:88

The application of Alfred Jules Ayer's verification principle to the interpretation of Qur'an 27:88 yields a systematic epistemological classification of the propositions advanced by both classical and scientific exegetical traditions. This classification proceeds through identifying the principal propositions contained within each interpretive tradition and evaluating whether these propositions satisfy Ayer's criteria for empirical meaningfulness, namely direct or indirect verifiability (Ayer, 1946; University of Cambridge, n.d.-a). The analysis reveals a fundamental epistemological distinction between empirically meaningful propositions that can be subjected to observational testing and metaphysical propositions that, while cognitively meaningful within their own theological framework, do not satisfy the verificationist criterion of factual significance.

Classical interpretations of Qur'an 27:88, as articulated by Ibn Kathir, al-Tabari, and Ibn 'Uthaymin, advance a set of propositions that are primarily eschatological in character. These propositions include the claim that the mountains will be destroyed and scattered like dust on the Day of Judgment, that this event forms part of the cosmic transformation accompanying the trumpet blast and resurrection, and that the verse describes a future event rather than an ongoing natural phenomenon (Ibn Kathir, n.d.; Ibn 'Uthaymin, n.d.; IslamWeb, 2016). When subjected to Ayer's verification principle, these propositions fall into a category that requires careful distinction.

The proposition concerning the destruction of mountains on the Day of Judgment is not directly verifiable because it refers to a future event that lies beyond the scope of current empirical observation. However, it may be considered indirectly verifiable in Ayer's sense if

it entails observation statements when conjoined with appropriate premises (Ayer, 1946; University of Cambridge, n.d.-a). The challenge is that the premises required to derive observational consequences from eschatological propositions are themselves theological rather than empirical, which means they do not satisfy Ayer's requirement that supporting premises must be directly verifiable, analytic, or independently indirectly verifiable (Ayer, 1946; Steenhagen, 2019). Consequently, from a verificationist perspective, eschatological propositions about the Day of Judgment are classified as metaphysical statements that lack literal cognitive meaning, though they may possess other forms of significance within religious discourse (Atoi et al., 2026; CiNii Research, 2025).

Contemporary scientific interpretations, as presented by the Lajnah Pentashihan Mushaf Al-Qur'an (2019), Mutawalli al-Sya'rawi, and various scientific commentators, advance a different set of propositions. These include the claim that mountains are not absolutely motionless but move in relation to certain frames of reference, that this movement can be understood through the Earth's rotation on its axis and/or tectonic plate dynamics, and that the verse's description of mountains "passing like clouds" corresponds to observable geophysical phenomena (Nastiar, 2026; Saad, 2023; Lajnah Pentashihan Mushaf Al-Qur'an, 2019).

When evaluated against Ayer's verification principle, these propositions exhibit a fundamentally different epistemological status. The claim that mountains move due to the Earth's rotation is directly verifiable because it entails observation statements that can be empirically tested. For instance, the proposition that mountains located at different latitudes move at different velocities relative to a geocentric reference frame can be confirmed through astronomical observation and geodetic measurement (Saad, 2023; Emirati Journal, 2023). Similarly, the proposition that mountains undergo gradual movement due to tectonic plate dynamics is verifiable through GPS measurements, which have recorded continental drift at rates of approximately 1 to 10 centimetres per year (Topbaş, 2023; Diari bidgoli et al., 2014).

Ayer's distinction between strong and weak verification proves particularly useful in assessing these scientific propositions (Ayer, 1946; EBSCO Research Starters, 2022; University of Cambridge, n.d.-b). Strong verification, which requires conclusive proof through observation, is rarely achievable for scientific claims about geological processes because these involve time scales that exceed direct human observation. However, weak verification, which requires only that empirical evidence can make the proposition more or less probable, is clearly satisfied. The GPS data, seismological measurements, and geological mapping that confirm

tectonic movement render the proposition that mountains move highly probable (Nastiar, 2026; Saad, 2023). This is precisely the kind of weak verification that Ayer considered sufficient for factual significance (Ayer, 1946; University of Cambridge, n.d.-b).

The analysis further reveals that the proposition describing mountains as "passing like clouds" can be classified as empirically meaningful under weak verification because it entails predictions that can be tested through observation. If mountains move due to the Earth's rotation, then their apparent positions relative to fixed stars should change over time, and this change can be measured through astronomical observation (Saad, 2023; Emirati Journal, 2023). Similarly, if mountains move due to tectonic plate dynamics, then GPS measurements should record gradual shifts in their geographic coordinates, and geological surveys should reveal evidence of past continental movement (Topbaş, 2023; Diari bidgoli et al., 2014). These predictions are verifiable in principle, even if the time scales involved make direct observation challenging.

One of the most significant findings of this epistemological analysis concerns the frame of reference problem in interpreting the movement of mountains. Saad (2023) demonstrates that the apparent contradiction between the Qur'anic description and everyday observation is resolved when one distinguishes between the Terrestrial Reference Frame (TRF), in which mountains appear stationary, and the Geocentric Reference Frame (GRF), in which they are in motion due to the Earth's rotation. In the TRF, mountains are firmly fixed to the Earth's crust and appear motionless relative to human observers. In the GRF, however, mountains move along circular trajectories centered on the Earth's axis of rotation, with velocities dependent on their latitude (Saad, 2023; Emirati Journal, 2023).

This distinction is epistemologically significant because it demonstrates how a proposition that appears empirically false in one frame of reference becomes verifiable in another. The Qur'anic statement that mountains "pass like clouds" can thus be interpreted as a claim about the mountains' motion relative to the GRF, rather than a denial of their apparent fixity in the TRF. From the perspective of Ayer's verification principle, this is a crucial insight because it establishes the empirical testability of the proposition: the Earth's rotation can be verified through astronomical observation, and its consequences for mountain motion can be calculated and confirmed (Saad, 2023; Emirati Journal, 2023).

The analysis further reveals that the scientific interpretation of mountains moving due to the Earth's rotation satisfies the criterion of weak verification because it entails observation statements that can be empirically tested. The proposition that mountains at the equator move

faster than mountains at the poles can be confirmed through geodetic measurements, and the proposition that the Earth's rotation causes a flattening at the poles and bulging at the equator has been empirically verified through satellite measurements (Saad, 2023; Emirati Journal, 2023). These empirical confirmations establish the scientific interpretation as epistemologically meaningful according to Ayer's criterion.

The second part of Qur'an 27:88, which states that this phenomenon is "the creation of Allah who creates everything in perfection" and that "He is All-Aware of what you do," presents a different epistemological classification. These theological propositions assert the perfection of divine creation and God's omniscience, claims that have traditionally been central to Islamic theology but which cannot be verified through empirical observation (Bakar, 2024; Atoi et al., 2026; Garuda Kemdikbud, n.d.). According to Ayer's verification principle, such propositions lack literal cognitive meaning because no conceivable observation could determine their truth or falsehood (Ayer, 1946; Britannica Editors, 2016). They are therefore classified as metaphysical statements that, while meaningful within religious discourse, do not satisfy the verificationist criterion of factual significance.

The analysis further reveals that the theological propositions in Qur'an 27:88 are not indirectly verifiable because they do not entail observation statements even when conjoined with appropriate premises. The proposition that God creates everything in perfection does not imply any specific observation that could confirm or disconfirm it, because perfection is a theological concept that does not have empirical criteria of verification (Ayer, 1946; University of Cambridge, n.d.-a). Similarly, the proposition that God is All-Aware of human actions does not entail any observation that could verify it, because divine omniscience is a metaphysical attribute that transcends empirical investigation (Atoi et al., 2026; CiNii Research, 2025). These theological propositions are therefore classified as metaphysical statements that lack empirical meaningfulness according to Ayer's verification principle, though they retain their significance within the theological framework of Islamic exegesis.

The epistemological classification of propositions in Qur'an 27:88 can be summarized as follows. The propositions advanced by classical exegesis, which describe the destruction of mountains on the Day of Judgment, are classified as metaphysical statements that lack empirical meaningfulness because they cannot be verified through observation. The propositions advanced by scientific exegesis, which describe mountains moving due to the Earth's rotation and tectonic plate dynamics, are classified as empirically meaningful statements that satisfy the criterion of weak verification because they entail observation

statements that can be empirically tested. The theological propositions in the second part of the verse, which describe divine perfection and omniscience, are classified as metaphysical statements that lack empirical meaningfulness, though they retain their significance within Islamic theology. This classification establishes a clear epistemological distinction between empirically verifiable scientific claims and metaphysical theological claims within the interpretation of Qur'an 27:88.

B. Epistemological Implications for Scientific Exegesis

The findings of this study carry several important implications for the broader discourse of scientific exegesis (*tafsir ilmi*). First, they demonstrate that scientific interpretations of Qur'anic verses can be epistemologically justified when they advance empirically verifiable propositions. The claim that mountains move due to the Earth's rotation or tectonic plate dynamics is not merely speculative but can be supported by observational evidence, making it a legitimate form of scientific exegesis (Nastiar, 2026; Saad, 2023; Lajnah Pentashihan Mushaf Al-Qur'an, 2019). This supports the view, advanced by scholars such as Saad (2023) and the Emirati Journal (2023), that the Qur'an contains scientific indications that can be discovered through empirical investigation. The verification principle thus provides a philosophical foundation for distinguishing between legitimate scientific interpretations that are empirically testable and those that merely assert compatibility without empirical grounding.

This finding aligns with the broader epistemological project of logical positivism, which sought to demarcate meaningful scientific statements from metaphysical speculation (Ayer, 1946; Carnap, 1932). However, unlike the logical positivists who tended to dismiss metaphysics entirely, this study adopts a more nuanced position by recognizing that theological propositions, while not empirically verifiable, retain their significance within the framework of religious discourse (Atoi et al., 2026; CiNii Research, 2025). This approach addresses the criticism, raised by scholars such as Muttaqin (2016), that scientific exegesis sometimes serves ideological purposes rather than genuine epistemic inquiry. Muttaqin (2016) argues that certain forms of *tafsir ilmi* in Indonesia reflect governmental interests rather than rigorous scholarly methodology. The verification principle provides a corrective by demanding that scientific interpretations be empirically testable rather than merely rhetorically persuasive.

Second, the analysis reveals the importance of distinguishing between different types of propositions within a single verse. The scientific proposition about mountain movement

and the theological proposition about divine perfection operate at different epistemological levels and should not be conflated. Scientific exegesis is valid insofar as it addresses empirically verifiable claims, but it overreaches when it attempts to verify theological assertions through scientific means (Bakar, 2024; Supriadi, 2020). This distinction is essential for maintaining the integrity of both scientific inquiry and theological reflection (Atoi et al., 2026; Garuda Kemdikbud, n.d.). The verification principle serves as a methodological guardrail that prevents scientific exegesis from encroaching upon theological territory where empirical verification is impossible.

This finding resonates with the work of Bakar (2024), who emphasizes the epistemological significance of the Qur'an's opening chapter for scientific exegesis. Bakar (2024) argues that the Qur'an provides a framework for integrating revelation, reason, and sense perception, with revelation serving as the primary source of knowledge. The verificationist framework proposed in this study complements Bakar's approach by offering a criterion for evaluating the epistemic status of scientific claims within exegesis, without undermining the authority of revelation in theological matters. Similarly, Supriadi (2020) identifies four epistemological models in Indonesian scientific exegesis, ranging from Islamisation to integrative-dialogical approaches. The verificationist framework provides a fifth model that focuses specifically on the empirical testability of scientific claims, offering a more rigorous criterion for evaluating scientific interpretations.

C. Methodological Contributions to Scientific Exegesis

The findings of this study make several contributions to the methodology of scientific exegesis. First, they provide a philosophical foundation for distinguishing between legitimate and illegitimate forms of scientific interpretation. Interpretations that advance empirically verifiable propositions are epistemologically justified, while those that merely assert compatibility without empirical testing are not (Ayer, 1946; University of Cambridge, n.d.-b). This addresses the concern, raised by critics such as Muttaqin (2016), that scientific exegesis sometimes serves ideological purposes rather than genuine epistemic inquiry. The verification principle provides a standard for assessing whether a scientific interpretation is genuinely empirical or merely rhetorical.

Second, the study demonstrates the relevance of twentieth-century philosophy of science, particularly logical positivism, to contemporary Qur'anic studies. Although logical positivism has been criticized for its verificationist criterion, its emphasis on empirical testability remains a valuable resource for evaluating knowledge claims (Atoi et al., 2026;

Kabir, 2022). The verification principle, in its weak form, provides a workable criterion for distinguishing scientific propositions from metaphysical assertions, even if it does not capture the full range of meaningful discourse (CiNii Research, 2025; Srinivas, 2011). This interdisciplinary engagement enriches Qur'anic studies by introducing philosophical tools that can sharpen the rigor of exegetical methodology.

The contribution of logical positivism to religious studies has been a subject of considerable debate. As Atoi et al. (2026) argue, the verificationist critique of religious language must be balanced against the recognition that religious statements fulfill functions beyond empirical description. Theological propositions about divine perfection and omniscience may be understood as expressions of faith, as invitations to moral reflection, or as symbolic articulations of a worldview that transcends empirical verification (Atoi et al., 2026; CiNii Research, 2025). The verification principle, therefore, should not be used to dismiss theological discourse as meaningless in any absolute sense. Rather, it should be understood as a criterion for distinguishing between empirical and metaphysical claims, allowing each to be evaluated according to its own standards (Steenhagen, 2019; University of Cambridge, n.d.-a).

Third, the epistemological framework proposed in this study offers a solution to the persistent debate between proponents and critics of scientific exegesis. By distinguishing empirically verifiable propositions from theological assertions, the framework allows both to coexist without conflict. Scientific exegesis can legitimately explore the empirical dimensions of Qur'anic verses, while theological exegesis retains its traditional role of expounding the spiritual and ethical meanings of the text (Bakar, 2024; Supriadi, 2020; Shihab, 2002). This resolution is particularly significant in the Indonesian context, where debates between scientific and traditional exegesis have sometimes been polarized (Supriadi, 2020; Muttaqin, 2016).

This resolution addresses a concern raised by Shihab (2002), who interprets the Qur'an's cosmological verses primarily as theological signs that invite reflection upon divine wisdom rather than as direct scientific propositions. Shihab's approach, which emphasizes the spiritual and ethical dimensions of the text, is not contradicted by the verificationist framework. Rather, the framework clarifies that while scientific interpretations can legitimately explore the empirical dimensions of Qur'anic verses, they should not be seen as replacing or undermining the theological interpretations that have been central to Islamic

tradition. The two approaches operate at different epistemological levels and can coexist peacefully.

D. The Status of Theological Propositions in Qur'anic Interpretation

A crucial implication of this study concerns the status of theological propositions within Qur'anic interpretation. The finding that theological assertions about divine perfection and omniscience do not satisfy the verificationist criterion of empirical meaningfulness raises important questions about the nature of religious language. However, as Atoi et al. (2026) and CiNii Research (2025) argue, the verificationist critique of religious language must be balanced against the recognition that religious statements fulfill functions beyond empirical description. Theological propositions about divine perfection and omniscience may be understood as expressions of faith, as invitations to moral reflection, or as symbolic articulations of a worldview that transcends empirical verification (Atoi et al., 2026; CiNii Research, 2025).

Within Islamic tradition, such propositions are meaningful not because they satisfy a verificationist criterion but because they are embedded in a coherent theological framework and a living community of faith (Shihab, 2002; Supriadi, 2020). The verification principle, therefore, should not be used to dismiss theological discourse as meaningless in any absolute sense. Rather, it should be understood as a criterion for distinguishing between empirical and metaphysical claims, allowing each to be evaluated according to its own standards (Steenhagen, 2019; University of Cambridge, n.d.-a). This approach respects the distinctive character of religious language while maintaining the rigor of empirical inquiry.

This perspective aligns with the work of Kabir (2022), who examines the limits of logical positivism in addressing religious and ethical questions. Kabir (2022) argues that while the verification principle provides a useful criterion for scientific statements, it fails to account for the meaningfulness of moral and religious discourse. The present study adopts a similar position by recognizing that theological propositions, while not empirically verifiable, retain their significance within the framework of Islamic theology. This approach avoids the positivist tendency to dismiss religious language as meaningless while maintaining the rigor of empirical inquiry in scientific exegesis.

E. Comparison with Other Methodological Frameworks

The verificationist framework proposed in this study can be compared with other approaches to evaluating scientific exegesis. Traditional Islamic epistemology, as discussed

by Bakar (2024), emphasizes the integration of revelation, reason, and sense perception, with revelation serving as the primary source of knowledge. This framework does not require that theological propositions be empirically verified; rather, it accepts them on the basis of divine authority and prophetic tradition. The verificationist framework, by contrast, focuses on empirical testability as the criterion for scientific propositions, while allowing theological propositions to be evaluated according to different standards.

Supriadi (2020) identifies four epistemological models in Indonesian scientific exegesis: the Islamisation model (Nazwar Syamsu), the integrative-dialogical model (Achmad Baiquni), the theo-science model (Agus Purwanto), and the theological-reflective model (M. Quraish Shihab). The verificationist framework proposed in this study differs from these models in that it does not prescribe a particular relationship between revelation and science but rather provides a criterion for evaluating the epistemic status of specific claims. This allows for a more nuanced assessment of scientific exegesis that does not require a priori commitment to any particular model.

The Islamisation model, as practiced by Nazwar Syamsu, interprets scientific discoveries as confirmations of Qur'anic statements, effectively subordinating science to revelation (Supriadi, 2020). The verificationist framework offers a different approach by evaluating scientific claims on their own empirical merits while recognizing that theological propositions operate according to different standards. The integrative-dialogical model of Achmad Baiquni, which emphasizes dialogue between revelation and scientific inquiry, is more compatible with the verificationist framework because it allows for independent evaluation of scientific claims (Supriadi, 2020). The theo-science model of Agus Purwanto, which positions the Qur'an as the epistemological foundation for scientific knowledge, differs from the verificationist framework in that it subordinates empirical inquiry to revelation (Purwanto, 2015; Ramadhani, 2023). The verificationist framework, by contrast, maintains the independence of empirical inquiry while recognizing the distinct character of theological discourse.

F. Comparison with Classical Exegetical Approaches

The findings of this study also invite comparison with classical exegetical approaches to Qur'an 27:88. Classical exegetes such as Ibn Kathir and Ibn 'Uthaymin interpreted the verse exclusively within an eschatological framework, understanding the movement of mountains as a future event that will occur on the Day of Judgment (Ibn Kathir, n.d.; Ibn 'Uthaymin, n.d.; IslamWeb, 2016). This interpretation, while theologically significant, does not satisfy the

verificationist criterion of empirical meaningfulness because it refers to a future event that cannot be empirically tested. However, this does not mean that the classical interpretation is without value. Rather, it operates within a theological framework that does not require empirical verification.

The verificationist framework proposed in this study does not reject the classical interpretation but rather clarifies its epistemological status. The classical interpretation is meaningful within Islamic theology because it is grounded in prophetic tradition and textual coherence. However, it is not an empirically verifiable claim and should not be evaluated as such. This distinction is important because it prevents the conflation of theological and scientific claims, allowing each to be evaluated according to its own standards. The classical interpretation and the scientific interpretation can coexist because they address different aspects of the verse: the classical interpretation addresses the eschatological dimension, while the scientific interpretation addresses the natural phenomena described in the verse (Lajnah Pentashihan Mushaf Al-Qur'an, 2019; Nastiar, 2026).

This dual approach is supported by the work of Shihab (2002), who interprets the Qur'an's cosmological verses as theological signs that invite reflection upon divine wisdom rather than as direct scientific propositions. Shihab's approach acknowledges that the Qur'an addresses both theological and empirical dimensions, and that these dimensions should be interpreted according to their appropriate frameworks. The verificationist framework provides a criterion for distinguishing these dimensions, thereby clarifying the boundaries of scientific exegesis without undermining the theological significance of the text.

G. Practical Recommendations for Scientific Exegesis

Based on the findings of this study, several practical recommendations can be offered for the practice of scientific exegesis. First, exegetes should clearly distinguish between empirically verifiable claims and theological assertions within their interpretations. When a verse describes a natural phenomenon, scientific exegesis can legitimately explore its empirical dimensions; when a verse makes a theological claim, exegetes should recognize that such claims are not subject to empirical verification and should be interpreted within their theological context (Bakar, 2024; Supriadi, 2020). This distinction is particularly important in the interpretation of Qur'an 27:88, where the verse combines a description of natural phenomena with a theological assertion about divine perfection.

Second, scientific exegesis should be based on established scientific findings rather than speculative theories. The verification principle requires that scientific interpretations be

supported by empirical evidence, not merely by the possibility of future confirmation (Ayer, 1946; University of Cambridge, n.d.-b). This means that exegetes should engage with current scientific consensus while remaining cautious about theories that are still contested. The GPS data, seismological measurements, and geological mapping that support the interpretation of mountains as moving are examples of the kind of empirical evidence that should ground scientific exegesis (Diari bidgoli et al., 2014; Topbaş, 2023). Exegetes should avoid advancing interpretations based on speculative or unconfirmed theories, as these do not satisfy the criterion of weak verification.

Third, scientific exegesis should recognize its own limitations. The verification principle reminds us that science cannot verify theological claims, and that scientific interpretations of Qur'anic verses are always tentative and subject to revision in light of new evidence (Steenhagen, 2019; Srinivas, 2011). This humility is essential for maintaining the integrity of both scientific inquiry and religious faith. Scientific exegesis should therefore be presented not as definitive proof of the Qur'an's scientific accuracy but as one possible interpretation that is consistent with both the text and contemporary scientific knowledge. This approach, which is consistent with the work of scholars such as Bakar (2024) and Supriadi (2020), avoids the apologetic tendency to find scientific miracles in every verse while recognizing the value of engaging with scientific knowledge.

Conclusion

This study reassessed the competing interpretations of Qur'an 27:88 through the epistemological framework of Alfred Jules Ayer's verification principle in order to examine the status of the knowledge claims advanced by both classical and scientific exegesis. The analysis demonstrates that the debate surrounding the verse is not merely a disagreement over exegetical meaning but fundamentally concerns the epistemological criteria used to evaluate interpretive claims. Classical interpretations predominantly understand the movement of mountains as an eschatological event associated with the Day of Judgment, whereas contemporary scientific exegesis relates the verse to observable natural phenomena such as the Earth's rotation and tectonic plate movement. Although these approaches differ substantially in their interpretive orientation, they represent distinct forms of knowledge that operate within different epistemological domains.

Applying Ayer's verification principle reveals that propositions referring to observable physical phenomena may be regarded as empirically meaningful insofar as they remain open to scientific observation, measurement, and verification. By contrast, propositions concerning

divine agency, revelation, and eschatological realities belong to the domain of metaphysical discourse and therefore cannot be evaluated through empirical verification alone. This finding indicates that scientific exegesis should not be assessed solely by its correspondence with contemporary scientific discoveries but also by recognising the epistemological distinction between empirical explanation and theological meaning. Consequently, the value of scientific interpretation does not depend on its ability to prove the scientific accuracy of the Qur'an, but on its methodological awareness of the respective limits of scientific inquiry and religious interpretation.

The principal contribution of this study lies in proposing Ayer's verification principle as a systematic epistemological framework for evaluating scientific exegesis. Rather than positioning classical and scientific interpretations as mutually exclusive alternatives, the framework demonstrates that both can coexist when understood according to the different epistemic functions they perform. Scientific propositions may contribute to explaining observable natural phenomena, whereas theological propositions preserve the normative and metaphysical dimensions of the Qur'an that transcend empirical investigation. This distinction provides a more balanced approach to scientific exegesis by preventing both the reduction of the Qur'an to a scientific textbook and the uncritical rejection of interdisciplinary engagement between revelation and science.

Nevertheless, this study is limited to a single Qur'anic passage and a specific philosophical perspective derived from logical positivism. Future research may extend this epistemological framework to other cosmological verses, compare Ayer's verification principle with alternative philosophies of science such as Karl Popper's falsificationism, Thomas Kuhn's paradigm theory, or Imre Lakatos's methodology of scientific research programmes, and explore how different philosophical traditions may contribute to a more comprehensive understanding of scientific exegesis. Such investigations would further enrich contemporary discussions on the relationship between revelation, scientific knowledge, and the philosophy of interpretation while strengthening the methodological foundations of scientific Qur'anic studies.

References

- Atoi, E. N., Markus, S., & Dillali, E. W. (2026). Dilemma of religious language: A critique of logical positivists' verification ideology and Wittgenstein's language games theory. *International Journal of Arts, Languages, Linguistics and Literary Studies*, *15*(1). <https://www.ajol.info/index.php/jolls/article/view/318432>

- Ayer, A. J. (1946). *Language, Truth and Logic* (2nd ed.). Victor Gollancz.
- Bakar, O. (2024). The Qur'ān's Opening Chapter: Its Epistemological Significance for Scientific Exegesis. *Al-Shajarah: Journal of the International Institute of Islamic Thought and Civilization (ISTAC)*, *29*(2). DOI: 10.31436/shajarah.v29i2.1968
- Britannica Editors. (2016, April 26). Verifiability principle. *Encyclopedia Britannica*. <https://www.britannica.com/topic/verifiability-principle>
- Cambridge University Press. (2019). Philosophy of Religion. In *The Cambridge History of Philosophy, 1945–2015*. DOI: 10.1017/9781316671568
- Carnap, R. (1932). Überwindung der Metaphysik durch logische Analyse der Sprache. *Erkenntnis*, *2*, 219-241.
- CiNii Research. (2025). Religious language: Philosophical analysis in secular thinking. *CiNii Research*. <https://cir.nii.ac.jp/crid/1050845762335075712>
- Diari bidgoli, M., Alizadeh, H., & Shoaee, A. (2014). Moving mountains from the perspective of Qur'an and geology. *Journal of Qur'anic Interpretation and Language*, *3*(1), 33-46. https://quran.journals.pnu.ac.ir/article_1635.html
- EBSCO Research Starters. (2022). Language, Truth, and Logic by Alfred Jules Ayer. In *Research Starters: Literature and Writing*. <https://www.ebsco.com/research-starters/literature-and-writing/language-truth-and-logic-alfred-jules-ayer>
- Emirati Journal of Space and Astronomy Sciences. (2023). Scientific analysis of Qur'an 27:88. *Emirati Journal of Space and Astronomy Sciences*, *1*(2), 14-37. DOI: 10.54878/EJSAS.111
- Garuda Kemdikbud. (n.d.). Religion and logical positivism: Analysis of religious language. *Garuda - Garba Rujukan Digital*. <https://garuda.kemdikbud.go.id>
- Garuda - Garba Rujukan Digital. (2025). Scientific Exegesis in Mahmud Yunus's Tafsir. *MUSHAF: Jurnal Tafsir Berwawasan Keindonesiaan*. <https://garuda.kemdiktisaintek.go.id>
- Ibn Kathir. (n.d.). *Tafsir Al-Qur'an Al-'Azim*. Volume 6.
- Ibn 'Uthaymin. (n.d.). Tafsir Surah An-Naml. In *Fatawa Nurun 'ala al-Darb*.
- IslamWeb. (2016, May 30). Passing of mountains in verse 27:88 will be on Day of Resurrection. *IslamWeb*. <https://www.islamweb.net>
- Kabir, S. M. H. (2022). *Logical Positivism and the Verification Principle* [Doctoral dissertation]. University of Dhaka.
- Lajnah Pentashihan Mushaf Al-Qur'an. (2019). *Tafsir Ilmi: Gunung dalam Perspektif Al-Qur'an dan Sains*. Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an.
- MIT. (2003). *Ayer's Principle of Verification* [Lecture notes]. 24.400 Proseminar in Philosophy I. <https://dspace.mit.edu>
- Muttaqin, A. (2016). Konstruksi tafsir ilmi Kemenag RI-LIPI: Melacak unsur kepentingan pemerintah dalam tafsir. *Religia*, *19*(2). DOI: 10.28918/religia.v19i2.751
- Nastiar, M. A. (2026, January 18). Di balik diamnya gunung: Titik temu tafsir As-Sya'rawi

dan sains modern dalam tafsir ilmi Kemenag. *Lajnah Kementerian Agama RI*. <https://lajnah.kemenag.go.id>

- Purwanto, A. (2015). *Nalar Ayat-Ayat Semesta: Menjadikan Al-Qur'an sebagai Basis Konstruksi Ilmu Pengetahuan*. Bandung: Mizan.
- Ramadhani, A. (2023). Integrasi Wahyu dan Sains dalam Tafsir Ayat Kauniyah: Studi Pemikiran Agus Purwanto. *Garuda*. <https://garuda.kemdiktisaintek.go.id>
- Saad, B. (2023). Earth rotates on itself, the revelation of the Qur'an more than 1400 years ago. *Emirati Journal of Space and Astronomy Sciences*, *1*(2), 14-37. DOI: 10.54878/EJSAS.111
- Shihab, M. Q. (2002). *Tafsir Al-Mishbah: Pesan, Kesan dan Keserasian Al-Qur'an*. Jakarta: Lentera Hati.
- Srinivas, M. (2011). Logical positivism and the verification principle. In *Philosophy of Science: A Contemporary Introduction*.
- Steenhagen, M. (2019). *Lecture 2: Objections to the verification theory* [Lecture notes]. University of Cambridge. <http://msteenhagen.github.io/teaching/201over/>
- Supriadi, A. (2020). Integrating Qur'an and Science: Epistemology of Tafsir Ilmi in Indonesia. *Refleksi*, *16*(2). DOI: 10.15408/ref.v16i2.10191
- Topbaş, O. N. (2023). The moving mountains. *Islam and Ihsan*. <https://www.islamandihsan.com/the-moving-mountains>
- University of Cambridge. (n.d.-a). *Verificationism and analyticity (Lecture 1)* [Lecture notes]. Faculty of Philosophy. https://www.phil.cam.ac.uk/files/verificationism_lecture_1.pdf
- University of Cambridge. (n.d.-b). *Verificationism and analyticity (Lecture 2)* [Lecture notes]. Faculty of Philosophy. https://www.phil.cam.ac.uk/files/verificationism_lecture_2.pdf
- University of Michigan. (n.d.). *Verification. A History of Philosophy Journals*. <https://public.websites.umich.edu>
- University of Notre Dame. (2011). *Verificationism* [Lecture notes]. PHIL 83104. <https://www3.nd.edu/jspeaks/courses/2011-12/83104/handouts/verificationism.pdf>