

Construction of the Scientific Exegesis of QS Az-Zumar: 6 in *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm* by Zaghlūl al-Najjār

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Abstract: This study aims to critically examine Zaghlūl al-Najjār's construction of the scientific exegesis of Q.S. Az-Zumar [39]:6 in his work, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*. Previous studies on al-Najjār have tended to focus on the correspondence between his interpretations and scientific findings, while his methodological construction of verses on human creation has received limited attention. This study maps al-Najjār's patterns of argumentation, scholarly approaches, and methodological strategies in explaining human creation and identifies their distinctive features by comparing them with those of Fakhr al-Dīn al-Rāzī and Ṭaṭṭāwī Jawharī. This qualitative study employs library research. The primary data include al-Najjār's interpretation of Q.S. Az-Zumar [39]: 6, whereas the secondary data include the literature on scientific exegesis, the history of science, and embryology. The data were analyzed descriptively and analytically by identifying argumentation patterns and categorizing linguistic, intertextual, scientific, and historical approaches. The findings show that al-Najjār integrates embryological terminology and data, the history of scientific development, related Qur'anic verses, and visual illustrations to construct a correspondence between the Qur'anic text and modern scientific knowledge. Comparatively, al-Najjār's distinctive feature lies in the systematic integration of these elements and the emphasis on *i'jāz 'ilmī*. These findings indicate a shift from interpretations emphasizing theological argumentation and scientific reflection toward a more specific, systematic, and embryologically data-driven construction of scientific exegesis.

Keywords: *Qur'an and Science, Scientific Exegesis, Surah Az-Zumar [39]: 6, Zaghlūl al-Najjār.*

Abstrak: Penelitian ini bertujuan untuk mengkaji secara kritis konstruksi tafsir ilmiah Zaghlūl al-Najjār atas QS. Az-Zumar [39]: 6 dalam karyanya, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*. Kajian terdahulu mengenai al-Najjār cenderung berfokus pada kesesuaian penafsiran dengan temuan sains, sementara konstruksi metodologisnya dalam ayat penciptaan manusia belum banyak dikaji secara khusus. Penelitian ini berupaya memetakan pola argumentasi, pendekatan keilmuan, dan strategi metodologis al-Najjār dalam menjelaskan proses penciptaan manusia serta mengidentifikasi kekhasannya melalui perbandingan dengan Fakhr al-Dīn al-Rāzī dan Ṭaṭṭāwī Jawharī. Penelitian menggunakan metode kualitatif berbasis studi kepustakaan. Data primer berupa penafsiran al-Najjār terhadap QS. Az-Zumar [39]: 6, sedangkan data sekunder mencakup literatur tafsir ilmiah, sejarah sains, dan embriologi. Data dianalisis secara deskriptif-analitis melalui identifikasi pola argumentasi dan pengelompokan



pendekatan linguistik, intertekstual, ilmiah, serta historis. Hasil penelitian menunjukkan bahwa al-Najjār mengintegrasikan terminologi dan data embriologi, sejarah perkembangan sains, ayat-ayat terkait, serta ilustrasi visual untuk membangun korespondensi antara teks Al-Qur'an dan pengetahuan ilmiah modern. Secara komparatif, kekhasan al-Najjār terletak pada integrasi unsur-unsur tersebut secara sistematis serta penegasan dimensi *i'jāz 'ilmī*. Temuan ini memperlihatkan pergeseran dari penafsiran yang menekankan argumentasi teologis dan refleksi saintifik menuju konstruksi tafsir yang lebih spesifik, sistematis, dan berbasis data embriologis.

Kata kunci: Integrasi Al-Qur'an dan Sains, Surah Az-Zumar [39]: 6, Tafsir Sains, Zaghlūl al-Najjār.

Introduction

Advances in scientific knowledge have increasingly encouraged dialogue between religions and science, particularly in Qur'anic exegesis concerning natural phenomena and human creation.¹ Alongside rapid advances in methodology and new empirical discoveries, a new discourse and trend in Qur'anic interpretation had emerged, seeking to examine the meaning of *kawniyyah* verses through a scientific lens. This intellectual orientation has promoted the genre of scientific exegesis (*al-tafsīr al-'ilmī*), a methodological framework that explicitly correlates and harmonizes the substance of Qur'anic verses with discoveries in modern science.² The emergence and articulation of scientific exegesis are not merely intended to demonstrate the harmony between divine revelation and science but also constitute an intellectual endeavor to articulate the dimension of the Qur'an's scientific miraculousness (*i'jāz 'ilmī*) in explaining natural phenomena long before human civilization became acquainted with modern technology.³ Within this intellectual landscape, verses concerning the human creation process have become one of the most extensively discussed areas of study. This is because the subject is considered highly relevant and closely connected to the development of contemporary embryological science.

One prominent contemporary scholar who has extensively developed the genre of scientific exegesis is Zaghlūl al-Najjār, particularly in *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'an al-Karīm*. His exegetical approach places modern scientific data as a crucial instrument for examining *kawniyyah* verses's meaning. Rather than being confined to the tendencies of classical exegetes, who predominantly emphasized linguistic, theological, and moral dimensions, Zaghlūl al-Najjār integrates linguistic analysis with contemporary empirical findings, particularly in astronomy, geology, embryology, and human physiology.⁴ This approach positions scientific exegesis not only as an apologetic response to advances in modern science but also as a form of epistemological integration between divine revelations and modern scientific knowledge.

¹Huda, A. N. (2024). *Tafsir Ilmi: Telaah Tafsir Ayat-Ayat Kauniyah Dalam Al-Qur'an* (Jakarta: IIQ Jakarta Press, 2024), xvii.

²M. Agus Muhtadi Bilhaq and Zunaidi Nur, "Integrasi Sains Dalam Tafsir Al-Qur'an: Telaah Atas Pendekatan Saintifik Tafsir Samudera Al-Fatihah," *Dar El Ilmi: Jurnal Keagamaan, Pendidikan Dan Humaniora* 12, no. 2 (2026), <https://doi.org/10.52166/dareilmi.v12i2.11349>.

³Izzatul Laila, "Penafsiran Al-Qur'an Berbasis Ilmu Pengetahuan," *Epistemé: Jurnal Pengembangan Ilmu Keislaman* 9, no. 1 (2014), 53-54. <https://doi.org/10.21274/epis.2014.9.1.45-66>.

⁴Umayyatus S. and Siti F., "Zaghlūl Rāghib Muḥammad Al-Najjār's Methods and Principles of Scientific Exegesis: A Review of Tafsīr Al-Āyāt Al-Kawniyyah Fī Al-Qur'an Al-Karīm," *ULUL ALBAB Jurnal Studi Islam* 21, no. 2 (December 29, 2020): 289–311, <https://doi.org/10.18860/ua.v21i2.10227>.

Among the Qur'anic verses that receive particular attention in Zaghlul al-Najjār's exegesis is QS. Az-Zumar [39]: 6, which describes the stages of human creation through the expressions *khalqan min ba'di khalq* "creation after creation" and *fī zulumāt thalāth* "within three layers of darkness". Al-Najjār understands this verse as a precise scientific description of the embryonic development stages within the womb. According to him, the terms *nutfah*, *'alaqah*, and *mudghah* refer to embryological stages that could only be scientifically verified following the development of modern medical technology. Furthermore, the concept of the "three layers of darkness" refers to the anatomical layers that protect the fetus, namely, the fetal membranes, the uterine wall, and the mother's abdominal wall.⁵ This interpretation demonstrates a strong tendency to correlate Qur'anic terminology with contemporary embryological theories as an expression of the Qur'an's *i'jāz 'ilmī* (scientific miraculousness).

Studies of Zaghlul al-Najjār's scientific exegesis have developed through various works examining scientific themes in his *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*. Akbar et al. examined the concept of *nafs wāḥidah* in Q.S. An-Nisā' [4]: 1 and Q.S. Az-Zumar [39]: 6 from a molecular genetic perspective, focusing on the role of DNA structure and mitochondria in the inheritance of human traits.⁶ Muhammad Hilman Hirzi and Fadjrul Hakam Chozin examined al-Najjār's interpretation of atomic glorification (*tasbīḥ al-dharrāt*) in the Qur'an and its relationship to modern physics.⁷ Meanwhile, Mohamad Fiqry Amhar and Afdilla Nisa investigated al-Najjār's interpretation of the phenomenon of marine darkness by Q.S. An-Nūr [24]: 40 from the perspective of modern oceanography.⁸ These three studies demonstrate that research on al-Najjār has largely focused on specific scientific themes and on the relationship between his interpretations and relevant scientific disciplines.

Studies on the relationship between the Qur'an and science, particularly concerning human creation and embryology, have also been conducted, although they do not specifically place al-Najjār as their primary object of analysis. Ihyaudi et al. examined the interpretations of Fakhr al-Dīn al-Rāzī and Hamka concerning Q.S. Al-Mu'minūn [23]: 12–14 through a comparative study that relates their interpretations to developments in knowledge concerning human creation.⁹ Rosa et al. likewise examined the description of embryonic development in the same verses by highlighting the correspondence between the Qur'anic description and modern medicine findings.¹⁰

⁵Al-Najjar, *Tafsīr Al-Āyāt Al-Kawniyyah Fī Al-Qur'ān Al-Karīm*, Jilid 1 (Kairo: Maktabah Al-Syuruq Al-Dauliyyah, 2006), 203-209.

⁶Akbar, A. F., et al., "Nafs Wahidah Dalam Al-Qur'an Al-Karim Menurut Zaghlul Raghīb Muhammad An-Najjar," *ZAD Al-Mufasssir* 5, no. 1 (June 30, 2023): 60–77, <https://doi.org/10.55759/zam.v5i1.70>.

⁷Hirzi, M. H., & Chozin, "Penafsiran Zaghlul Al-Najjār Terhadap Atom Bertasbih Dalam Kitab Tafsīr Al-Āyāt Al-Kawniyyah Fī Al-Qur'ān Al-Karīm," *REVELATIA Jurnal Ilmu Al-Qur'an Dan Tafsir* 5, no. 2 (July 25, 2024): 105–26, <https://doi.org/10.19105/revelatia.v5i2.14925>.

⁸Amhar, M. F., & Nisa, A. (2024) "Fenomena Kegelapan Dasar Laut Berdasarkan Q.S An-Nur (24) Ayat 40: Analisis Penafsiran Zaghloul Al-Najjar," *Muasarah: Jurnal Kajian Islam Kontemporer* 6, no. 1 (2024): 82–96, <https://doi.org/10.18592/msr.v6i2.15755>.

⁹Ihyaudin Ihyaudi et al., "Penciptaan Manusia Dalam Al-Qur'an Dan Ilmu Embriologi: Tafsir Ilmi," *Jurnal Budi Pekerti Agama Islam* 3, no. 3 (June 21, 2025): 366–76, <https://doi.org/10.61132/jbpai.v3i3.1322>.

¹⁰Andi Rosa et al., "Embriologi Dalam Al-Qur'an: Kajian Tafsir Ilmi Terhadap QS. Al-Mu'minun: 12-14 Dan Temuan Sains Modern," *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan* 3, no. 4 (June 27, 2025): 5580–84, <https://doi.org/10.31004/jerkin.v3i4.1470>.

These studies demonstrate that human creation is an important theme in the discourse on the Qur'an and science. However, attention to the correspondence between Qur'anic descriptions and scientific findings does not explain, how an exegete constructs an argumentative framework when bringing Qur'anic texts into dialogue with scientific knowledge.

Azlan et al.'s study offers greater attention to the methodological dimension of scientific exegesis by comparing the methodologies of Yazir and Jawhari. Rather than merely discussing the relationship between Qur'anic verses and scientific knowledge, the study examines the approaches and methodological structures employed in scientific exegesis through the integration of *naql*, *'aql*, and *tajribah*. The study then proposes the HSEF to understand the practice of scientific exegesis more comprehensively.¹¹ Although this study makes an important contribution to the methodological study of scientific exegesis, it compares two exegetes and does not specifically examine how al-Najjār constructs his interpretation of a particular Qur'anic verse.

The mapping of previous studies reveals a shift in research focus from, exploring scientific themes in al-Najjār's exegesis and examining the relationship between Qur'anic descriptions and scientific findings to a growing concern with the methodological structure of scientific exegesis. Nevertheless, no study has specifically examined how al-Najjār constructs his interpretation of Q.S. Az-Zumar [39]:6 through the integration of linguistic analysis, the history of scientific development, embryological data, and the affirmation of *i'jāz 'ilmī*. This gap is significant because the study of scientific exegesis should not be limited to whether a Qur'anic verse corresponds to scientific findings; it should also examine how an exegete selects, organizes, and integrates various sources of knowledge into his interpretive framework. Therefore, this study takes Q.S. Az-Zumar [39]:6 as a case through which to uncover al-Najjār's patterns of argumentation and scholarly strategies in constructing his scientific interpretation.

To address this issue, this study examines in depth Zaghlūl al-Najjār's construction of Q.S. Az-Zumar [39]:6 in *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm*. This study focuses on three aspects: mapping patterns of interconnection between revelation and scientific knowledge in interpreting human creation, examining the methodological strategies al-Najjār employs in constructing his interpretation, and analyzing the epistemological characteristics manifested in this process. The study is expected to contribute to the discourse on *tafsīr 'ilmī* by offering an understanding that moves beyond the correspondence between Qur'anic verses and scientific knowledge toward the scientific interpretation of an exegete's argumentative and methodological mechanism.

This study employs a library research-based qualitative method. The primary source is Zaghlūl al-Najjār's *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm*, particularly his interpretation of Q.S. Az-Zumar [39]: 6, while secondary sources include books, journal articles, and exegetical works relevant to *tafsīr 'ilmī*, embryology, the history of science, and the relationship between religion and scientific knowledge. Data were collected through a documentary study, including data

¹¹Norain Azlan et al., "Towards a Holistic Framework for Scientific Exegesis: A Comparative Methodological Study of Elmalili M. Hamdi Yazir and Tantawi Jawhari" 11, no. 2 (2026): 1–21, <https://doi.org/https://doi.org/10.55831/ajis.v11i2.1123>.

inventory, critical reading, and classification according to the study's focus. The data were then analyzed descriptively and analytically to identify patterns of argumentation, linguistic approaches, the use of historical and scientific data, and the affirmation of *i'jāz 'ilmī* in al-Najjār's interpretation.

Results and Discussion

General Overview

1. Scientific Exegesis and Development in Contemporary Qur'anic Studies

Terminologically, *tafsīr 'ilmī* refers to an exegetical approach that connects the content of Qur'anic verses, particularly the *āyāt kawniyah*, with scientific knowledge and discoveries. Muḥammad Ḥusayn al-Dhahabī understands it as an approach that employs scientific theories to explain the content of Qur'anic verses,¹² while Fahd 'Abd al-Raḥmān al-Rūmī emphasizes it as a form of *ijtihād* that connects the *āyāt kawniyah* with scientific facts.¹³ These two definitions indicate that *tafsīr 'ilmī* is not merely concerned with the use of scientific terminology in Qur'anic interpretation, but also encompasses an effort to establish a relationship between revealed texts and scientific knowledge. This view is consistent with Ḥanafī Aḥmad, who regards the Qur'an as a book that encourages human beings to free their reason from various forms of illusion and to observe the phenomena of the natural world. He states:

لقد كانت دعوة القرآن دعوة علمية قائمة على تحرير العقول من الأوهام ، وإطلاق عقال الفكر وحثه على النظر في صحف الكون ، لذلك نرى الكثير من آيات القرآن تنتهي

*Indeed, the Qur'an's call constitutes an orientation toward scientific preaching grounded in the demythologization of thought: liberating reason from the grip of superstition and dogmatic illusions and, encouraging human beings to break free from the constraints of narrow-minded thinking by directing their attention toward the manifestations of God's power displayed throughout the universe. This spirit underlies why so many Qur'anic verses conclude with calls to think, contemplate, and employ reason in understanding the mysteries of creation.*¹⁴

Historically, the embryo of scientific exegesis had already emerged during the classical period, although its form remained relatively limited in form. Prominent classical exegetes such as Fakhr al-Dīn al-Rāzī, for instance, demonstrated rational and cosmological reasoning in explaining the natural phenomena represented in the Qur'an.¹⁵ Nevertheless, the use of such knowledge in classical works had not yet developed into a systematic form of *tafsīr 'ilmī*. This exegetical approach began to take a clearer shape in the modern period, when the relationship between the Qur'an and scientific knowledge received increasing attention. Ṭaṭāwī Jawharī became one of the prominent figures in this phase through his *al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*,

¹²Dzahabi, *Al-Tafsīr Wa Al-Mufasssīrūn* (Beirut: Dar al-Fikr, 1976), 474.

¹³Fahd ibn 'Abd al-Raḥmān ibn Sulaymān Al-Rūmī, *Itijāhāt Al-Tafsīr Fī Al-Qarn Al-Rābi 'Ashar Al-Hijrī* (Beirut: Mu'assasat al-Risālah, 1997), 550.

¹⁴Hanafi Ahmad, *Al-Tafsīr Al-'Ilmī Lī Al-Āyāt Al-Kawniyyah Fī Al-Qur'ān* (Beirut: Dar Al-Ma'arif, 1980).

¹⁵Muchlisin, A. R., & Nisa, "Geliat Tafsir 'Ilmi Di Indonesia Dari Tafsir Al-Nur Hingga Tafsir Salman," *Millati: Journal of Islamic Studies and Humanities* 2, no. 2 (December 15, 2017): 239, <https://doi.org/10.18326/mlt.v2i2.239-257>.

which provided extensive space for discussing various natural phenomena and scientific disciplines in Qur'anic interpretation.¹⁶

Along with the growing attention to this relationship, several works characterized by *tafsīr 'ilmī* subsequently emerged. These include *Sunan Allāh al-Kawniyyah* by Muḥammad Aḥmad al-Ghamrāwī, *al-Ghidzā' wa al-Dawā'* by Jamāl al-Dīn al-Fandī, *al-Qur'ān wa al-Ilm al-Ḥadīth* by 'Abd al-Razzāq Nawfal, and *al-Jawāhir fī Tafsīr al-Qur'ān* by Ṭantāwī Jawharī. These works demonstrate that the relationship between the Qur'an and scientific knowledge has been developed through diverse approaches, whether employing knowledge of the natural world as a means of reflection or relating the content of Qur'anic verses to developments in scientific knowledge.¹⁷

In contemporary developments, *tafsīr 'ilmī* has come to involve not only attempts to identify correspondences between Qur'anic verses and scientific facts but also how scientific knowledge is employed in constructing exegetical arguments. Scientific terminology, empirical data, the historical development of science, and interconnections among Qur'anic verses have become part of this development. This shift indicates that studies of *tafsīr 'ilmī* have become increasingly diverse in accordance with individual exegetes' scholarly backgrounds and objectives of individual exegetes. In this context, Zaghlūl al-Najjār occupies an important position through his attention to *āyāt kawniyyah*, particularly those concerning natural phenomena and human creation. Through *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*, al-Najjār seeks to bring the Qur'anic text into a more focused dialogue with scientific knowledge, so that science serves not only as supplementary information but also as part of the process of explaining the verses' content.¹⁸

Al-Najjār's contribution to the development of *tafsīr 'ilmī* can be seen in his effort to integrate textual analysis with modern scientific terminology and data, as well as information concerning the historical development of science. This approach gives a more specific form to the interpretation of *āyāt kawniyyah*, particularly when discussing human creation. Therefore, al-Najjār's interpretation of Q.S. al-Zumar [39]: 6 is important not only in terms of the correspondence between the content of the verse and scientific knowledge, but also to understand how such knowledge is selected, interconnected, and employed in constructing exegetical arguments.

2. Intellectual Biography of Zaghlūl al-Najjār

Zaghlūl al-Najjār is one of the leading contemporary Muslim intellectuals, exerting significant influence through his ideas on integrating the Qur'an and modern science, particularly in the discourse of scientific exegesis (*tafsīr 'ilmī*). Born on November 17, 1933, in the village of Masyal, Gharbiyah Governorate, Egypt, he was raised in a family deeply rooted in religious traditions and strongly committed to Islamic education.¹⁹

¹⁶Nasir, M. et al., "Tafsir Ilmi Tentang Penciptaan Manusia Dalam Tafsir Al-Jawahir Karya Thanthawi Jawhari," *Maret* 1, no. 2 (2024): 129–154.

¹⁷M. Quraish Shihab, *Membumikan Al-Qur'an* (Bandung: Mizan, 1999), 183.

¹⁸Muhammad Fahri Hadi, "Pendekatan Tafsir Ilmi Terhadap Isyarat Sains Dalam Ayat-Ayat Kauniyah Al-Qur'an," *Jurnal Pendidikan Tambusai* 10, no. 2 (2026), <https://doi.org/10.31004/jptam.v10i2.38547>.

¹⁹Zunaidi Nur, "Hermeneutika Hadis Zaghlul An-Najjar," *Tamaddun Journal of Islamic Studies* 1, no. 2 (2022): 178–90, <https://doi.org/10.55657/tajis.v1i2.53>.

His father was known to be a memorizer of the Qur'an who instilled in him religious discipline from an early age. Within this family environment, al-Najjār was nurtured in a strong Islamic intellectual tradition while simultaneously being encouraged to pursue modern scientific knowledge. At a young age, his early education began with memorizing the Qur'an at a young age, a religious foundation that would later shape his close engagement with Islamic studies alongside his interest in the natural sciences.²⁰

In terms of formal education, al-Najjār studied geology at Cairo University, where he earned his bachelor's degree in 1955. His interest in the Earth sciences grew, prompting him to pursue postgraduate studies in geology and geochemistry, eventually earning a Ph.D. in geology from the University of Wales, United Kingdom, in 1963. His academic standing reached a significant milestone when he was appointed as the Professor of Geology at Kuwait University in 1972.²¹ In terms of Islamic thought, Zaghlūl al-Najjār's intellectual orientation shows an affinity with modern Islamic reformism that developed in Egypt during the twentieth century, particularly the ideas promoted by Ḥasan al-Bannā and Sayyid Quṭb. Methodologically, his scientific approach to *kawniyyah* verses extends the tradition of *tafsīr 'ilmī* previously pioneered by Ṭanṭāwī Jawharī.

Zaghlūl al-Najjār's academic career developed as through his work as a lecturer, researcher, and speaker at universities and scholarly forums across the Muslim world. He has taught at several prominent higher-education institutions in Egypt, Saudi Arabia, Kuwait, and the United Kingdom.²² In addition to his academic activities in geology, he has produced numerous works focusing on the scientific miraculousness of the Qur'an and Sunnah. Through his *magnum opus*, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*, al-Najjār systematically seeks to demonstrate the fundamental harmony between the sacred Qur'anic text and discoveries in contemporary science.

3. Characteristics of *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*

In the introduction to his *magnum opus*, *Tafsīr al-Āyāt al-Kawniyyah fī al-Qur'ān al-Karīm*, Zaghlūl al-Najjār reinforces his thesis that the Qur'an constitutes a universal miracle whose dimensions of miraculousness are not confined to a single domain. According to him, the miraculousness of the Qur'an encompasses linguistic features, historical content, and scientific indications (*i'jāz 'ilmī*) of natural phenomena and human existence. Among these three dimensions, the scientific dimension is particularly important. He argues that the Qur'an's transhistorical character is evident in its capacity to explain natural realities that remain relevant across periods. He emphasizes that *kawniyyah* verses should not be understood merely within the confines of the knowledge available to seventh-century Arab society, but rather as containing indications that subsequent generations can continue to explore through advances in scientific research.²³

²⁰Nidhom, A. J., & Khoiru, "Relevansi Ayat-Ayat Kosmologi Dalam Qs. Al-Anbiya 30 Dan Qs. Fussilat:11 Dengan Teori Sains: Studi Analisis Kitab Mukhtârât Tafsîr Al-Āyât Al-Kawniyyah Karya Zaghlul Al-Najjar," *Journal of Indonesian Tafsir Studies* 01, no. 1 (2020): 30–34.

²¹Al-Najjar, *Ayat-Ayat Kosmos Dalam Al-Qur'an Al-Karim*, Terj. Bidin (Jakarta: Shorouk International Bookshop, 2010), 5.

²²Al-Najjar, 5-6.

²³Al-Najjar, *Tafsīr Al-Āyāt Al-Kawniyyah Fī Al-Qur'ān Al-Karīm*, 25-26.

In terms of its technical presentation, *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm* follows a *muṣḥafī* system, arranging the sūrahs and verses in the order of the standard muṣḥaf. Methodologically, al-Najjār begins his analysis by identifying verses that address natural phenomena, human creation, and other cosmological realities. After selecting the verses to be examined, al-Najjār assigns a specific title or theme corresponding to their principal content. Subsequently, these titles serve as subtopics that direct the exegetical discussion toward particular scientific indications.²⁴

At the beginning of each sūrah discussion, al-Najjār first lists the *kawniyyah* indications contained within the sūrah. After presenting these indications, he highlights a particular verse as the basis for *tadabbur* and reflection on God's power manifested in the creation of the universe. He then elaborates on each *kawniyyah* indication according to the previously identified themes. To reinforce his scientific explanations, al-Najjār also employs visual illustrations, including images, diagrams, and photographs related to the subject under discussion. These illustrations are placed at the end of the discussion as explanatory aids to facilitate the reader's understanding of the scientific phenomena being examined. Each illustration is accompanied by a brief explanatory note that directly connects the visual representation to the text of the verse and the corresponding scientific phenomenon. This use of visual materials constitutes one of the distinctive characteristics of *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm*, reflecting a methodological effort to integrate Qur'anic interpretation with a pedagogical approach grounded in modern scientific knowledge.

Quantitatively, the distribution of thematic content across the volumes of *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm* varies. The first volume discusses 56 themes, the second contains 42, the third comprises 38, and the fourth includes 40. This *magnum opus* encompasses 176 thematic discussions distributed across 66 sūrahs of the Qur'an.

4. Description of Az-Zumar [39]: 6 in *Tafsīr al-Āyāt al-Kawniyyah fi al-Qur'ān al-Karīm*

Zaghlūl al-Najjār's interpretation of QS. Az-Zumar [39]: 6 reflects a contemporary scientific exegetical approach that dynamically aligns the textual dimensions of the Qur'an with the rapid advancement of modern science. In his interpretation, the Qur'an is positioned as divine revelation that, from a transhistorical perspective, conveyed scientific indications about the mechanisms of human creation long before modern scientific knowledge emerged. Al-Najjar integrates linguistic analysis of the verse with scientific data and the historical development of embryological knowledge. Systematically, his interpretation of QS. Az-Zumar [39]: 6 is constructed around the following three principal focuses:

- a. The Word of Allah, "...*Yakhluqukum fī buṭūni ummahātikum khalqan min ba'di khalqin fī zulumātīn thalāth...*"

In interpreting QS. Az-Zumar [39]: 6, Zaghlūl al-Najjār first critiques the ancient views on the process of fetal formation that developed throughout human history. According to him, people in the past tended to believe that the fetus was solely formed from a woman's menstrual blood or originated exclusively from

²⁴Fattah, M. et al., "Fenomena Api Di Dasar Laut Dalam Tafsir Al-Jawahir Fi Al-Qur'an Al-Karim Dan Al-Ayat Al-Kawniyyah Fi Al-Qur'an Al-Karim," *Dirosat : Journal of Islamic Studies* 10, no. 2 (2025): 153–66, <https://doi.org/10.28944/dirosat.v10i2.2457>.

male semen. The theory of preformation also emerged, asserting that a human being was already fully formed in miniature and merely underwent enlargement while developing in the womb. For Zaghlūl al-Najjār, these views contradict the Qur'anic account, which emphasizes the involvement of both male and female reproductive contributions in initiating human development. He understands this assertion through several Qur'anic verses concerning the origin of human creation, including QS. Al-Ḥajj [22]: 5, Al-Mu'minūn [23]: 12–14, Ghāfir [40]: 67, An-Najm [53]: 45–47, Al-Qiyāmah [75]: 36–39, Al-Insān [76]: 2, and 'Abasa [80]: 19.²⁵

Furthermore, al-Najjār emphasizes that the Qur'an's account of the mechanism of human reproduction was formulated with remarkable precision more than 14 centuries ago, when human civilization had not yet developed scientific instruments capable of observing the dynamics of embryonic development in detail. At the time of the revelation of the Qur'an, microscopes, imaging technologies, and biological research instruments capable of observing human reproductive cells had not yet been developed.²⁶ Al-Najjār subsequently presents historical evidence concerning the eventual abandonment of erroneous views regarding human fetal development:

وظلت هذه التصورات المنطلقة من الخيال الجامع سائدة عند أغلب أهل الأرض إلى أواخر القرن السابع عشر الميلادي حين أمكن للهولندي و أنتون فان ليو فين هويك وزميله هام - من رؤية الحيمن الحيوان المنوى لأول مرة بواسطة المجهر، وذلك في سنة (١٦٧٧ م)

Erroneous views about fetal formation continued to dominate until the late seventeenth century, before 1677, Antonie van Leeuwenhoek and Hamm successfully observed spermatozoa through a microscope in 1677. Meanwhile, mammalian ova were not successfully observed until the late 19th century. This account shows Zaghlūl al-Najjār's effort to argue that Qur'anic information about the involvement of both male and female reproductive cells preceded modern scientific discoveries by several centuries.²⁷ In this context, his interpretation aims not only to explain the meaning of the verse, but also to affirm the compatibility between divine revelation and the development of modern scientific knowledge.

In the mid-nineteenth century, Gregor Mendel began describing the theory of heredity through experiments on pea plants. Mendel concluded that living organisms inherit traits through distinct factors, later known as genes. Further developments occurred in the early twentieth century when Thomas Hunt Morgan empirically demonstrated that genes are located within chromosomes in the cell nucleus. This discovery clarified that heredity occurs through tangible biological structures rather than merely abstract concepts. Morgan also identified sex chromosomes and developed genetic mapping as a basis for understanding the transmission of hereditary traits from parents to offspring. Genetics advanced further when James Watson and Francis Crick elucidated the structure of DNA in the mid-twentieth century. This discovery showed that all living organisms' genetic information is stored in DNA molecules that make up chromosomes.²⁸

²⁵Al-Najjar, *Tafsīr Al-Āyāt Al-Kawniyyah Fī Al-Qur'ān Al-Karīm*, 203-204.

²⁶Al-Najjar, 204.

²⁷Al-Najjar, 204.

²⁸Al-Najjar, 204-205.

Concluding his interpretation, Zaghlūl al-Najjār asserts that the development of modern embryology throughout the twentieth and twenty-first centuries has increasingly demonstrated the correspondence between scientific discoveries and information revealed in the Qur'an more than fourteen centuries ago. Although modern medicine has achieved highly advanced technology, the nomenclature used in contemporary medicine to designate embryonic stages is generally based merely on the fetus's developmental age. By contrast, the Qur'an had already transmitted far more specific and descriptively applicable terminology, including the stages of *nutfah*, *'alaqah*, and *mudghah*, followed by bone differentiation (*'izām*) and the covering of the bones with muscle/flesh tissue (*lahm*). These sequential terms represent the biological and morphological characteristics of each stage of human embryonic development with remarkable precision.²⁹

b. The Word of Allah "...*khalqan min ba'di khalqin*..."

Interpreting the phrase *khalqan min ba'di khalq* in QS. Az-Zumar [39]: 6, Zaghlūl al-Najjār understands it as a Qur'anic affirmation of the gradual, systematic, and continuous process of human creation. Each stage of fetal differentiation possesses distinct biological characteristics in terms of form, function, and organ structure. The Qur'an does not portray these stages as static, but as dynamic, progressive development that occurs within the mother's womb. The Qur'an captures this evolutionary transformation that the Qur'an captures through the following highly precise sequence of terminology:

a) The *Nutfah* Stage

In Zaghlūl al-Najjār's interpretation, the *nutfah* stage is the initial phase of human creation, involving both male and female reproductive materials. Linguistically, *nutfah* refers to a small amount of water or a few drops of fluid. However, in modern embryology, the term refers to reproductive cells (*gametes*), namely spermatozoa and the ovum.³⁰

b) The *Nutfah Amsyāj* Stage

Zaghlūl al-Najjār understands the *nutfah amshāj* stage as the fusion phase that produces the zygote, in which the reproductive materials of the male and female unite along with the genetic constituents they contain. The term *amshāj*, meaning "mixed" or "blended," indicates that human creation involves not only the union of two reproductive cells but, also the integration of highly complex genetic material. In his interpretation, Zaghlūl al-Najjār relates this concept to chromosomes and DNA (*deoxyribonucleic acid*), which carry hereditary information from both parents. He explains that each somatic cell in the human body contains 18.6 chemical molecules composed of nitrogenous bases, sugar groups (*deoxyribose*), and phosphate as constituent elements of genetic material, whereas each reproductive cell carries only half of these components. The two sets of components unite to form a complete new genetic composition in the embryo. This process subsequently establishes the genetic code of the fetus, which determines human biological

²⁹Al-Najjar, 205.

³⁰Al-Najjar, 206.

characteristics through a mechanism known in modern science as genetic programming.³¹

c) The *'Alaqah* stage

In Zaghlūl al-Najjār's interpretation, the *'alaqah* stage begins when the fertilized embryo attaches to the uterine wall through an early placental structure that subsequently develops into the umbilical cord. During this phase, which occurs between the fifteenth and twenty-fifth days after fertilization, the embryo undergoes rapid growth and cell division accompanied by the formation of the body's basic organs. Zaghlūl al-Najjār emphasizes that the embryo at this stage resembles a leech in its physical form, its attachment to the uterine wall, and its mechanism for obtaining nutrients from the mother's blood. At this stage, the embryo is estimated to measure only approximately 0.7–3.5 mm in length, a microscopic scale that, from his perspective, could not reasonably have been observed by human civilization at the time of the Qur'an's revelation without the aid of modern technological instruments.³²

d) The *Mudghah* stage

The *mudghah* stage is the subsequent phase of embryonic development, during which somites begin to form along the embryo, beginning with a single somite in the middle of the fourth week and developing into approximately 40–45 somites by the beginning of the fifth week, marking the embryo's entry into the *mudghah* stage. During this phase, the embryo appears like a chewed lump of flesh with distinct indentations on its surface, resembling the marks left on chewing gum after it has been chewed. According to al-Najjār, the Qur'anic choice of the term *mudghah* demonstrates a remarkably precise correspondence between the Qur'anic expression and modern embryological reality, particularly because such morphological features can only be observed through microscopic technology available in the contemporary era. Given that the embryo remains extremely small, measuring approximately 1 cm, the Qur'anic description of this stage is an indication of miraculousness that transcends the limits of human knowledge at the time of revelation.³³

e) Bone Formation Stage

At this stage, skeletal development begins as the cartilaginous tissue formed during the *mudghah* stage calcifies. Zaghlūl al-Najjār explains that this development occurs around the seventh week of pregnancy, when the fetal body becomes increasingly distinguishable, accompanied by the emergence of the fingers and further brain development. At this stage, the fetus measures approximately 14–20 mm in length. The Qur'anic reference to bone formation following the *mudghah* stage indicates a biological sequence that corresponds to findings in modern embryology.³⁴

f) Stage of Bone Envelopment by Flesh

The next stage involves the bones becoming enveloped by muscle tissue, followed by the formation of the integumentary layer (skin). This morphological transformation occurs intensively around the eighth week of

³¹Al-Najjar, 206.

³²Al-Najjar, 206.

³³Al-Najjar, 207.

³⁴Al-Najjar, 207.

fetal development. At this stage, the fetus measures approximately 22–31 millimeters in length. In Zaghlūl al-Najjār's interpretation, this phase demonstrates that muscle tissue develops progressively around the bones, gradually forming a more complete human body structure. Muscle cells develop from the embryo's middle layer and then form fibers and tissues that surround the bones and connect to the spinal nervous system.³⁵

g) Stage of Creation Completion

In Zaghlūl al-Najjār's interpretation, the stage of completion of creation begins in the ninth week and continues until the end of pregnancy. During this stage, the fetal organs develop further, and the human body's physical features become more clearly defined and proportionate. During the early part of this phase proceeds relatively slowly until approximately the twelfth week, after which it accelerates in both body size and form. Zaghlūl al-Najjār explains that significant anatomical changes occur during this phase, including the repositioning of the eyes toward the front of the face, the elevation of the ears toward the sides of the head, and the elongation of the legs. The fetus also increases in length progressively, from approximately 33 to 500 mm shortly before birth.³⁶

According to Zaghlūl al-Najjār, the entire sequence of embryonic development shows a strong correspondence between the Qur'anic textual account and modern embryology findings. Although contemporary science can explain fetal development in considerable detail, modern medicine generally defines developmental stages based largely on embryonic age. In contrast, the Qur'an provides terminology that more representatively reflects the biological characteristics of each stage, such as *nutfah*, *'alaqah*, and *mudghah*. Accordingly, he regards the precision of the sequence and characteristics of human developmental stages described in the Qur'an as a form of scientific miraculousness that was conveyed long before the development of modern medical technology.³⁷

c. The Word of Allah "...*khalqan min ba'di khalqin fī zulumātin thalāth ...*"

Interpreting the phrase *fī zulumātin thalāth* (within three layers of darkness) in QS. Az-Zumar [39]: 6, Zaghlūl al-Najjār relates it to the biological structures that protect the fetus within the womb. The "three layers of darkness" refer to three protective layers that surround the embryo throughout its development. The first layer of darkness consists of the embryonic membranes, namely, the *amnion*, *chorion*, and *decidua*, which completely enclose the fetus. These layers protect the fetus from external disturbances while creating an enclosed, dark environment within the womb.

The second layer of darkness is the uterine wall, which consists of several thick layers and protects the fetus and surrounding embryonic membranes. The third layer of darkness refers to the mother's bodily structures surrounding the uterus, particularly the abdominal and pelvic regions. Thus, Zaghlūl al-Najjār argues that the Qur'an conveyed precise scientific indications about the layered biological environment of the developing fetus

³⁵Al-Najjar, 207-208.

³⁶Al-Najjar, 207-208.

³⁷Al-Najjar, 208.

long before modern anatomy and embryology emerged. In his view, this explanation demonstrates the accuracy of the Qur'anic description of the protective structures surrounding the fetus, which modern medical technology could identify only later, and therefore constitutes one manifestation of the Qur'an's scientific miraculousness (*i'jāz 'ilmī*).

Analysis

1. The Construction of Zaghlūl al-Najjār's Scientific Exegesis

Interpretation of QS. Az-Zumar [39]: 6 by Zaghlūl al-Najjār reveals an integrative construction of scientific exegesis by synthesizing the Qur'anic text, linguistic analysis, the historiography of science, and modern scientific data. Within this framework, the Qur'an is positioned as a source of scientific evidence that contemporary science can elucidate. Accordingly, al-Najjār's exegetical orientation is not merely directed toward uncovering the literal meaning of the verse, but also toward demonstrating the relationship between revelation and modern scientific facts, particularly in human embryology.

One of the principal characteristics of Zaghlūl al-Najjār's exegetical construction is his tendency to divide a single verse into several thematic foci when it contains multiple scientific terms or indications. For example, in interpreting the phrase "*yakhluqukum fī buṭūni ummahātikum khalqan min ba'di khalqin fī zulumātīn thalāth*," he divides his discussion into several components, including the process of embryonic creation, the stages of fetal development, and the concept of the "three layers of darkness." Another distinctive feature is how Zaghlūl al-Najjār begins his interpretation by critiquing ancient views of human creation. He first discusses various theories that developed throughout history, such as the notion that the fetus originated solely from menstrual blood or exclusively from male semen, and then contrasts these views with the Qur'anic account of the involvement of both male and female reproductive contributions. To strengthen this argument, he cites other verses with thematic connections, making his interpretation intertextual and linking different Qur'anic passages.

In addition to a textual approach, Zaghlūl al-Najjār draws extensively on historical data about the chronological development of scientific knowledge in order. He traces the history of scientific discoveries from Antonie van Leeuwenhoek's observation of spermatozoa, through Gregor Mendel's genetic theory, to James Watson and Francis Crick's discovery of DNA structure. This historical account shows that human knowledge of embryology developed gradually, whereas the Qur'an had already indicated these processes since the time of revelation. Nevertheless, one distinctive characteristic of his exegesis is the limited use of explicit academic references for the historical and scientific data he employs.

From a technical perspective, Zaghlūl al-Najjār also makes extensive use of modern scientific terminology, including *spermatozoa*, *genes*, *chromosomes*, *deoxyribonucleic acid*, *genetic programming*, and *gamete*. Interestingly, scholars' names and scientific terms are retained in Arabic script and accompanied by their corresponding Latin letter forms. This pattern demonstrates his effort to bridge the tradition of Arabic scholarly writing with modern scientific terminology while keeping it accessible to readers. Despite its scientific orientation, Zaghlūl al-Najjār does not entirely abandon linguistic analysis. He first explains the lexical meaning of a Qur'anic

term before relating it to modern scientific explanations. His interpretation of the terms *nutfah*, *amshāj*, *'alaqah*, and *mudghah*, for instance, begins with an etymological explanation and subsequently connects these terms with developments in embryology and human genetics. This demonstrates that linguistic analysis remains a foundation before the interpretation moves toward a scientific reading.

Another prominent characteristic of Zaghlūl al-Najjār's exegesis is the considerable detail with which he explains human embryonic development. He describes the length of a fetus at each stage, the timing of its biological development, and the morphological changes in its bodily structures in considerable detail. To aid the reader's understanding, he also uses visual analogies, such as the embryo's resemblance to a leech during the *'alaqah* stage and to a chewed lump of flesh during the *mudghah* stage. At the conclusion of his interpretation, Zaghlūl al-Najjār almost invariably emphasizes the dimension of the Qur'an's *i'jāz 'ilmī*. He argues that the correspondence between Qur'anic verses and modern scientific discoveries is not coincidental but evidence that the Qur'an originates from God.

Another distinctive feature of his exegetical construction is the use of visual media to support his scientific explanations. Throughout his discussions, Zaghlūl al-Najjār incorporates colored illustrations related to the subjects under examination, including embryonic development, the structure of the universe, and various geological and biological phenomena. These illustrations are accompanied by brief captions designed to help readers understand the scientific explanations presented.

2. Comparative Analysis of al-Rāzī, Ṭaṇṭāwī Jawharī, and Zaghlūl al-Najjār

A comparative examination of the three exegetes reveals that although al-Rāzī, Ṭaṇṭāwī Jawharī, and Zaghlūl al-Najjār similarly regard human creation as a sign of divine power, their methodological orientations differ considerably. Al-Rāzī approaches the verse primarily through theological and rational reasoning, supported by intertextual references to the Qur'an and earlier scholars' opinions. Ṭaṇṭāwī Jawharī, meanwhile, emphasizes reflection on natural phenomena and incorporates empirical knowledge to explore the wisdom underlying creation. Al-Najjār develops this tendency by employing specialized scientific terminology and detailed embryological data to explain the stages of human development. This difference shows that scientific knowledge serves different functions within the interpretive framework of each exegete, reflecting the intellectual contexts in which their works were produced.

In interpreting the phrase *khalqan min ba'di khalq*, al-Rāzī primarily employs an intertextual and theological approach. He relates the expression to Q.S. Al-Mu'minūn [23]: 12–14, which describes the successive stages of human creation, including *nutfah*, *'alaqah*, *mudghah*, the formation of bones, the covering of bones with flesh, and the subsequent stage of creation. Regarding the phrase *fī ḡulumātin ṭhalāth*, al-Rāzī presents two transmitted interpretations concerning the three darknesses: the darkness of the abdomen, the womb, and the placenta, or the darkness of the backbone, the womb, and the abdomen. Therefore, his discussion is predominantly structured through transmitted reports, Qur'anic intertextuality, and rational theological argumentation.³⁸ In the passage examined, he does not use detailed embryological terminology or visual representations, suggesting that the discussion focuses more on

³⁸Fakhr al-Dīn Al-Rāzī, *Mafātīḥ Al-Ghayb* (Beirut: Dar al-Fikr, 1931), h. 244-246.

establishing the theological significance of human creation than on providing an empirical account of embryonic development.

Ṭanṭāwī Jawharī adopts a broader approach by identifying the three darknesses with the abdomen, womb, and placenta, while extending the discussion through reflections on natural phenomena. The concept of darkness is associated with phenomena such as the atmosphere, dust, smoke, and light refraction. Subsequently, his interpretation moves beyond the immediate biological context and connects physical phenomena with health, human behavior, and moral and spiritual dimensions.³⁹ In his interpretation, scientific knowledge functions not merely as descriptive information but as a medium through which the wisdom and order embedded in creation can be contemplated. This approach demonstrates Ṭanṭāwī's tendency to expand the meaning of a Qur'anic expression through analogical reasoning and interdisciplinary reflection on natural phenomena.

The scientific dimension of Ṭanṭāwī's interpretation is also evident in his use of information concerning natural sciences and health, including discussions of atmospheric conditions, dust and smoke, light refraction, and respiratory cilia. He also refers to scholars and physicians from different intellectual contexts to enrich his discussion. His work occasionally incorporates visual illustrations, although their use is not uniform throughout the interpretation. In the source examined, the illustrations are presented in black and white, reflecting the visual and publishing conventions of the period in which the work was produced. Unlike the explicit emphasis on *i'jāz 'ilmī* found in al-Najjār's interpretation, the passage examined from Ṭanṭāwī places greater emphasis on integrating scientific observations with reflection on divine wisdom, natural order, and broader ethical and spiritual meanings.

Al-Najjār presents a more specialized scientific construction in his interpretation of human creation. The expression *khalqan min ba'di khalq* is elaborated through a detailed sequence of embryonic development, including *nutfah*, *nutfah amshāj*, *'alaqah*, *mudghah*, the formation of bones, the covering of bones with flesh, and the subsequent stage of creation. Scientific terminology, measurements, developmental periods, and descriptions of structural and functional changes in the embryo. He also employs analogies, such as comparisons with a leech or a chewed lump of flesh. Similarly, in discussing the three darknesses, he relates the Qur'anic expression to specific biological structures surrounding the developing embryo. Scientific knowledge consequently becomes a central explanatory instrument through which the Qur'anic description is elaborated and, its correspondence with modern embryological knowledge is emphasized.

Another distinctive feature of al-Najjār's interpretation is his incorporation of the history of science and visual representation. He refers to the historical development of embryological and genetic knowledge through figures such as Antonie van Leeuwenhoek, Gregor Mendel, Thomas Hunt Morgan, James Watson and Francis Crick. Historical scientific developments serve as argumentative elements that demonstrate the development of human knowledge of reproduction, heredity, and embryological development. His interpretation is accompanied by colored illustrations and visual representations that clarify embryonic stages and scientific processes. Compared with al-Rāzī, whose discussion in the examined passage does not employ

³⁹Ṭanṭāwī Jawharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm* (Beirut: Dar al-Fikr, 1931).

visual representation, and Ṭaṭṭāwī, who uses illustrations selectively, al-Najjār demonstrates a more developed integration of visual media into the presentation of scientific interpretation. This difference reflects developments in scientific knowledge and publishing technology, rather than the exegetes' superiority or inferiority. Al-Najjār's approach combines textual interpretation, historical scientific information, specialized terminology, and visual representation within a more systematic scientific framework.

The comparison ultimately shows that the principal distinction among the three exegetes lies not simply in whether they employ scientific knowledge but, in how they integrate it into the interpretive process. Al-Rāzī places human creation primarily within a theological and intertextual framework; Ṭaṭṭāwī Jawharī expands the discussion through natural-scientific reflection, analogy, and considerations of divine wisdom; and al-Najjār develops a more specialized integration of linguistic analysis, embryological knowledge, the history of science, scientific terminology, and visual representation. The dimension of *i'jāz 'ilmī* is not the principal focus of al-Rāzī's discussion nor is it explicitly prominent in the Ṭaṭṭāwī passage examined here, whereas al-Najjār articulates it more clearly. Al-Najjār's distinctive contribution therefore lies in the systematic incorporation of scientific data, historical developments in scientific knowledge, and visual representation into the construction of scientific exegesis, rather than merely in the use of scientific information itself.

Table 1. Comparative Analysis of the Interpretive Approaches of al-Rāzī, Ṭaṭṭāwī Jawharī, and Zaghlūl al-Najjār

Aspect	Al-Rāzī	Ṭaṭṭāwī Jawharī	Zaghlūl al-Najjār
Interpretive Orientation	Theological-rational	Scientific-reflective	Scientific-embryological
Approach/Methodology	<i>Naql</i> , rational reasoning, and intertextuality	Scientific, analogical, and interdisciplinary approaches	Linguistic, intertextual, scientific, and historical approaches
Use of Scientific Knowledge	Not dominant	Natural phenomena and health sciences	Modern embryological and genetic data and terminology
History of Science	Not evident in the examined discussion	Used to enrich discussion	Used as an Argumentative Instrument
Visual Illustrations	Not found in examined section	Used selectively	Used more extensively, including colored illustrations
I'jāz 'ilmī	Not a primary focus	Not explicitly emphasized in the examined section	Emphasized more explicitly

Primary Characteristic	Human creation as a theological argument	Human creation as an object of scientific reflection and contemplation of divine wisdom	Human creation as an object of scientific elaboration based on embryology
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Conclusion

Zaghlūl al-Najjār's interpretation of Q.S. Az-Zumar [39]: 6 reflects a key feature of contemporary scientific exegesis that integrates the Qur'anic text with scientific knowledge developments, particularly in human embryology. His interpretive construction combines linguistic, intertextual, scientific, and historical approaches to explain the successive stages of human creation. Al-Najjār not only explains Qur'anic terms such as *nutfah*, *amsyāj*, *'alaqah*, and *mudghah*, but also relates them to modern embryological terminology, data, developmental stages, and biological structures. The history of scientific development serves as an argumentative instrument, while visual illustrations help clarify the embryonic development process. This overall structure emphasizes the dimension of *i'jāz 'ilmī* through the correspondence between the Qur'anic description and the development of scientific knowledge.

A comparative analysis of Fakhr al-Dīn al-Rāzī and Ṭanṭāwī Jawharī shows that the differences among the three exegetes primarily concern their interpretive orientations and how they integrate knowledge into their exegesis. Al-Rāzī situates human creation within a theological-rational framework through *naql*, rational reasoning, and Qur'anic intertextuality. Ṭanṭāwī Jawharī develops his interpretation through scientific reflection, analogy, and an interdisciplinary approach to uncover the wisdom underlying creation. Al-Najjār, by contrast, develops a more specialized embryological construction by integrating linguistic, intertextual, scientific, and historical approaches. Therefore, his distinctive feature lies not merely in the use of science but also, in the systematic integration of scientific data, the history of scientific development, specialized terminology, and visual representation in constructing scientific exegesis. These findings also indicate the importance of adopting a critical and proportionate attitude toward the use of scientific knowledge in exegesis, given that some scientific theories and findings remain dynamic and open to further development and revision.

This study is limited in terms of its object and the sources examined. The analysis focuses on Q.S. Az-Zumar [39]: 6, with particular attention to al-Najjār's construction of scientific exegesis and its methodological comparison with al-Rāzī and Ṭanṭāwī Jawharī. The comparison does not encompass the entirety of the works and interpretations of the three exegetes; therefore, the findings concerning their respective methodological characteristics should be understood within the specific passages examined. In addition, as a library-based study, this research does not empirically examine all the embryological and scientific data al-Najjār employs.

Future research may expand the scope of comparing al-Najjār's construction of scientific exegesis with that of other scientific exegetes through themes of human creation or other *āyāt kawniyah*. Further studies may also integrate exegetical analysis with perspectives from medicine or biology to more deeply examine the use of embryological data in scientific interpretation. In addition, cross-period comparative

studies could trace methodological changes from classical exegesis to modern and contemporary scientific exegesis in response to scientific knowledge developments.

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