

Reassessing the Epoch of Adam: A Comparative Approach Based on Qur'anic Characteristics and Scientific Evidence

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Abstract

The present study adopts an interdisciplinary approach at the intersection of science and religion to propose an interpretive framework for situating the "Qur'anic Adam" within human natural history. The primary objective of the study is to correlate the key attributes of Prophet Adam as described in the Qur'an, such as advanced language, modesty and the need for clothing, rudimentary religious awareness, and the genealogical unity of humanity, with scientific evidence drawn from cognitive archaeology, population genetics, and paleoclimatology. The present study aims to identify a "Temporal Context" or historico-cultural setting consistent with the Qur'anic descriptions. The findings indicated that although various elements of modern human behavior emerged through a long and gradual process, a significant overlap of all these attributes exists within a specific time frame. It is concluded that the approximate period between 100,000 and 50,000 years ago represents an "Interpretive turning point" in human history and the best candidate for alignment with the image of the "Qur'anic Adam," a period in which humans had reached a threshold of cognitive maturity but were still in the process of forming their earliest cultural traditions. This framework presents a portrayal of Adam that is not only consistent with scientific findings but also situated within one of the most pivotal stages of human evolution.

Keywords: Qur'anic Adam, Scientific Exegesis, Primogenitor of Humanity, Human Population Genetics, Paleoanthropology.

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1. Introduction

Prophet Adam, as the forefather of humanity and the first divine vicegerent on earth, occupies a distinctive position in human history, the Abrahamic religions, and particularly in the Qur'an. A more precise understanding of the various dimensions of his life extends beyond mere historical curiosity; it is essential for a deeper comprehension of human identity, the relationship between humanity and the Creator, and a correct perception of the origins of human life on earth. Through its numerous references to the story of creation and the life of Prophet Adam, the Qur'an offers a rich repository of knowledge. Re-examining and reflecting upon these references can address many of the fundamental questions confronting contemporary humanity. Accordingly, efforts to reconstruct and understand the actual conditions of the life of this great prophet are necessary not only for the religious community, but also for all those who seek to comprehend the roots and origins of humanity.

This foundational status has ensured that the subject of creation and the manner of Prophet Adam's existence has remained a central concern for thinkers across the world for centuries. Within the Islamic tradition, from classical exegetes such as *Ṭabarī* and *Fakhr Rāzī* to contemporary scholars like Allamah *Ṭabāṭabā'ī*, and from prominent mystics such as *Ibn 'Arabī* to philosophers of the Transcendent Theosophy like *Mullā Ṣadrā*, each has explored various dimensions of this subject through their distinct exegetical, theological, and mystical approaches. This concern is not limited to Muslim intellectuals; researchers from other religious traditions, as well as secular scholars such as Andrew Loke, William Lane Craig, and Svante Pääbo, have also addressed the topic from their respective perspectives. In the present era, alongside the continuation of religious scholarship, scholars from various disciplines, including archaeologists, anthropologists, linguists, and historians of civilization, continue to investigate the first human being and the initial conditions of human presence on earth, whether within the framework of comparative religious studies or through empirical scientific inquiry. This breadth and continuity of research indicate that the question of Prophet Adam transcends a merely religious belief and constitutes a universal concern that has occupied the human mind throughout history.

Notably, the scope of this study is limited to correlating the text of the Qur'an with empirical scientific evidence. Although Islamic traditions also contain references to human history and its antiquity, this study deliberately refrains from engaging with that domain for two main reasons. First, the critical analysis of the chains of transmission and content of these traditions constitutes a specialized and extensive field that lies beyond the scope of this article. Second, the apparent discrepancies among the traditions themselves, particularly regarding the numerical chronology of human existence, require an independent investigation for their resolution and interpretation. Therefore, this study focuses on the text of the Qur'an as the primary source agreed upon by all Muslims and leaves the examination of traditions to future research.

2. Previous Research

Scholarly literature on the life of Prophet Adam encompasses a broad range of exegetical, theological, and interdisciplinary studies within both Islamic and Western intellectual traditions. In the Islamic tradition, classical Qur'anic commentaries such as "*al-Mīzān*" by Allamah Ṭabāṭabā'ī, by focusing on key terms such as "Clothing," "Speech," and the "Teaching of the names," provided the initial foundations for a profound analysis of the distinctive characteristics of primordial humanity. This rich heritage has been further developed in contemporary Persian scholarship. For example, Hosseinizadeh (2009 AD/1388 SH: 60) conducted a comparative study of Islamic and Jewish traditions regarding the place of Adam's creation; Shariati Kamalabadi et al. (2021 AD/1400 SH: 165) examined the concept of the "Onness Soul" and the proof of Adam's status as the father of humanity; and Dadkhah and Khoshfar (2020 AD/1399 SH: 51) analyzed the nature of the primordial paradise. In addition, several scholars have explored topics such as Adam's predecessors, the parallels between his creation and that of Jesus, and the distinction between symbolic language and historical reality in Qur'anic narratives.

In line with these efforts, serious inquiries have also been undertaken in Western academic circles to understand religious propositions in light of scientific findings. For instance, Andrew Loke (2016 AD) argues that accepting the theory of evolution does not necessarily entail rejecting the biblical teachings concerning Adam. Similarly, Venema and McKnight, in their book *Adam and the Genome* (2017 AD), address the challenges of interpreting sacred texts in the age of genetics. This scholarly parallel between Eastern and Western traditions, along with the convergence of perspectives in examining the fundamental characteristics of primordial humanity, attests to the fact that the exploration of the various dimensions of Prophet Adam's life remains a vibrant and universal concern.

3. Necessity and Objectives of the Research

A review of the existing literature reveals that studies on Prophet Adam now require a shift from general theological discussions toward more concrete and empirically grounded inquiries. Although modern genetic findings, through hypotheses such as "Y-chromosomal Adam" and "Mitochondrial Eve," (Venema, 2017: 19) have opened new avenues for understanding human ancestry, the figure of Adam in religious texts is not merely a biological entity. Rather, he is portrayed as a human being endowed with advanced cognitive and cultural capacities. Attributes such as the "Power of speech and communication," the "Use of clothing and covering," and the "Ability to conceptualize and teach names" are precise civilizational markers that demand analysis beyond a purely biological perspective.

Therefore, a precise identification of these characteristics and their comparison with findings from various scientific disciplines, including archaeology, anthropology, historical linguistics, and genetics, can provide a clearer picture of the historical period in which such a human being could have existed. By juxtaposing Qur'anic indications with scientific evidence, this interdisciplinary approach forms the central objective of the present study:

"To explore the historical context and conditions in which the emergence of a human with such existential and cognitive capacities was possible."

Accordingly, the present study aims to identify and analyze the civilizational and cognitive characteristics of Prophet Adam as mentioned in the Qur'an, with the goal of delineating comprehensive picture of the probable period of his life. More specifically, this study seeks to:

First, identify and categorize the key evaluable characteristics of Prophet Adam by drawing upon authoritative Qur'anic commentaries, particularly "*al-Mizān*" by Allamah Ṭabāṭabā'ī and "*Tafsir Nemooneh*" by Makarem Shirazi.

Second, subject each of these characteristics, as "Civilizational markers," to a comparative analysis with relevant scientific data from the fields of archaeology, anthropology, historical linguistics, and genetics.

Third, based on this analysis, identify a period in human history during which the coexistence of these characteristics was possible.

4. Methodology of the Research

The present study employs a descriptive-analytical method with an interdisciplinary approach. In the first step, the main evaluable characteristics, such as "Speech," "Clothing," "Teaching of the names," and "Power of reasoning," are extracted from the Qur'anic verses. Components lacking empirical evaluability (such as the nature of the descent) are set aside. In the second step, relevant scientific evidence is gathered for each characteristic. For instance, genetic findings are used to better understand the concept of *Abū al-Bashar*, linguistic evidence for "Speech," and archaeological records for "Clothing."

A key methodological point in the methodology of this research is the manner of engagement with empirical sciences. Unlike approaches whose goal is to prove the correctness of the sacred text (for example, Vahdat Azad, 2017 AD/1397 SH: 38), this article adopts a comprehension-oriented approach. Scientific data are used neither as the ultimate arbiter for "Confirming" religious propositions nor for forced harmonization, but rather as a dialogue partner. The intention is that scientific findings, after delineating the historical and cultural horizon in which the sacred text becomes intelligible, raise new questions for the exegete. The exegete then returns to the sacred text and, in light of its existing indications, arrives at a better and renewed understanding of it. The goal of this dialogue is to discover an overall coherence between the Qur'anic worldview and the scientific framework. This approach has also received attention in recent Qur'anic studies (Jafari, 2023: 103; Moradi, 2022: 23), and has been systematically formulated as a coherent methodological framework in another study (Jafari, in press).

This research presents its interpretive model as a "Working hypothesis" rather than a definitive judgment, fully aware of the provisional and falsifiable nature of scientific knowledge. Nevertheless, an effort has been made to ground the article's main argument on robust and enduring behavioral patterns (such as the emergence of symbolic thought, burial practices, and the use of clothing) rather than on numerical dating that are constantly subject to revision. These time ranges are presented according to the best current scientific

estimates and are open to revision with the advancement of knowledge. However, for the purpose of analysis and sketching an overall picture, presenting a specific temporal framework seems necessary.

Although the analyses in this study also provide clues regarding the probable geographical setting, the primary focus and ultimate aim of the article is to determine the temporal characteristics. A detailed examination of the "Location" can be the subject of future research. Furthermore, the article concentrates on those aspects of the story of Adam that have examinable counterparts in empirical evidence. This choice is a deliberate methodological limitation and does not imply disregard for the non-material or symbolic dimensions of the narrative, such as the nature of the "Descent." Investigating these dimensions requires an independent study with a different methodology.¹

5. Conceptual Framework and Enumeration of the Characteristics of Prophet Adam

Before delving into the detailed analysis, it is necessary to outline a precise conceptual framework for the topic under discussion. One of the fundamental issues in understanding the verses of creation is the semantic distinction between the two key terms "*Bashar*" and "*Insān*" in the Qur'an. Semantic studies, including those by Ruhani Mashhadi (2018 AD/1397 SH: 75), indicate that the word "*Bashar*" in the Qur'an generally refers to the physiological aspects and biological stages of the formation of the human body (as in the verse: "Indeed, I am going to create a bashar from clay." (Ṣād: 71)) In contrast, the term "*Insān*" and the station of "*Adam*" are linked to the divine breath of the spirit (al-Ḥijr: 29), possession of free will, knowledge, and cognitive capacities (al-Baqarah: 31 and Ṭāhā: 121-122). This distinction is of vital importance, for it shows that our search for the temporal coordinates of Prophet Adam should not be limited merely to locating the first bipedal biological creature (*Bashar*), but rather should target a period in which "*Bashar*" had reached the stage of "Humanity" and manifested its distinctive cognitive and cultural characteristics.

It should be noted that this study's approach to the issue of "Human Origins" neither denies the existence of human-like beings prior to Prophet Adam nor reduces his status to that of an ordinary human. Accepting the fossil evidence for the existence of various human species in earlier periods, the fundamental assumption of this research is that Prophet Adam represents a turning point in the history of life, in which the biological stage was accompanied by a spiritual and cultural leap (the divine breath of the spirit). Therefore, instead of becoming entangled in theological controversies concerning "primacy" in a

1. The present study does not engage with theological discussions concerning the nature of "Paradise" or the modality of the "Descent," as examining these topics requires a different methodology and falls outside the scope of the present research. Nevertheless, the article's interpretive approach is based on the principle that the Qur'anic descriptions of the blessings of Paradise (such as *lā Taḍḥā*) provide an image of the living conditions and existential concerns of the original addressee of that message, namely, Adam. Therefore, this research utilizes such descriptions not for theological analysis of "Paradise," but as clues for reconstructing the earthly living environment of Adam.

purely biological sense, we focus on the trajectory of cultural development and specific indicators that distinguish the "Qur'anic Adam" from "Preceding Bashar."

It is emphasized that our approach is comprehension-oriented rather than proof-oriented. Scientific findings are employed neither to compulsorily confirm religious texts nor to reject them, but to illuminate the historical context and facilitate a better understanding of the conditions described. This approach enables a constructive dialogue between the two domains of knowledge without imposing one upon the other.

Based on this approach and through induction from the Qur'anic verses, the key characteristics of Prophet Adam can be classified as "Temporal Markers" into four main categories:

The cognitive and linguistic abilities, from the very beginning of creation and the completion of the divine breath of the spirit, Adam is presented as possessing an advanced linguistic and cognitive system:

- Symbolic representation and the teaching of the names: The ability to learning, conceptualization, and express the "Names" (And He taught Adam all the names... He said, "O Adam, inform them of their names." (al-Baqarah: 31-33)).
- The power of reasoning and argumentation: The use of conditional sentences and understanding of cause-and-effect relationships (Our Lord, we have wronged ourselves, and if You do not forgive us and have mercy upon us... (al-A'rāf: 23)).
- The religious status and understanding of abstract concepts: Adam is portrayed as a moral being who comprehends complex and non-material concepts:
- Understanding of divine law and obligation: Receiving and comprehending direct divine commands and prohibitions (And We said, "O Adam, dwell, you and your wife, in Paradise... and do not approach this tree" (al-Baqarah: 35)).
- Comprehension of the concepts of time and eternity: Understanding the Devil's promises of immortality (the tree of eternity and a kingdom that will not decay" (Ṭāhā: 120)).

Cultural and psychological characteristics include behaviors that demarcate the boundary between humans and animals in the cultural domain:

- Modesty and the need for clothing: The immediate reaction to nakedness by sewing leaves together (they began to fasten upon themselves leaves of Paradise (al-A'rāf: 22)).
- Lack of familiarity with burial in the second generation: Cain learned the method of "Hiding" the body by observing a crow (Then Allah sent a crow searching in the ground to show him how to hide the shame of his brother (al-Mā'idah: 31)). This indicates that such knowledge had not previously existed among humans.

Adam's status as *Abū al-Bashar* in the Qur'an emphasizes the position of Adam as the common father of all present-day humanity:

- Attribution of all humanity to Adam: The repeated address "O children of Adam" to all human beings (al-A'rāf: 26, 27, 31, and 35).
- The single soul and the dissemination of progeny: "He created you from a single soul and created from it its mate and dispersed from both of them many men and women." (al-Nisā':

1) The word "Baththa" (to spread/disseminate) explicitly indicates that all humans have been propagated from this primordial couple.

6. Analysis of Linguistic and Cognitive Characteristics: Advanced Language, Reasoning, and Abstract Thought

6.1. Intra-textual Evidence

Examination of the Qur'anic verses demonstrates that from the very outset of human life, Prophet Adam possessed a "Complete cognitive-conceptual system" and "Mature oral speech." Allamah Ṭabāṭabā'ī in "*al-Mīzān fī Tafsīr al-Qur'ān*" implicitly indicates that the use of the term "*Qawl*" (speech) regarding humans in the Qur'an should be understood in its literal sense (Ṭabāṭabā'ī, 1999 AD/1378 SH: 2, 317). This means that the words of Prophet Adam were not merely inner inspirations or metaphorical expressions, but real speech based on actual words and meanings. These linguistic characteristics can be traced through several key aspects:

- Understanding of complex grammatical structures: The first verbal interaction between God and Adam took place in the form of sentences with complete syntactic structure and legal implications: "And We said, "O Adam, dwell, you and your wife, in Paradise... and do not approach this tree." (al-Baqarah: 35) The immediate comprehension of these statements, which include concepts such as "Dwelling," "Comfort and abundance," "Free Will," and "Prohibition," indicates the existence of an active "Internal Grammar" in his mind.
- The ability of "Reporting" and organizing thoughts: In verse 33 of Surah al-Baqarah (He said, "O Adam, inform them of their names"), the command for "Reporting" is given. The verb "Reporting" denotes clear reporting and the conveyance of concepts; an act that requires a high cognitive capacity for receiving information, storing it, and then expressing it in an organized manner.
- Abstract thinking and logical reasoning: The prayer of repentance by Adam and Eve is a prominent example of the ability to reason and express complex ideas: "Our Lord, we have wronged ourselves, and if You do not forgive us and have mercy upon us, we will surely be among the losers." (al-A'raf: 23) This sentence contains a conditional structure (if... then...), self-awareness (wronged ourselves), understanding of causality, and foresight.
- Comprehension of non-material concepts: His verbal interaction with *Iblīs* regarding "The tree of eternity and a kingdom that will not decay" (Tāhā: 120) shows that the language of Adam went far beyond fulfilling instinctive needs; it served as a foundation for philosophical thought and the understanding of abstract concepts such as "Immortality" and "Eternity."

6.2. Scientific Evidence

Juxtaposing these Qur'anic descriptions (of a speaking and rational Adam) with findings from paleoanthropology and genetics helps us identify the "Epoch" in which he lived. Contemporary science makes a clear distinction between "Anatomically modern humans"

(Homo sapiens, those who resemble us physically) and "Behaviorally modern humans" (those who behave like us).

- Cognitive evolution and the emergence of language: Although anatomically modern humans appeared around 300,000 years ago (Hublin et al., 2017: 290), archaeological evidence indicates that verbal communication remained limited to "Proto-language"¹ for a long time afterward. Modern linguistic capabilities, including complex syntax and abstract thought, are the product of a long evolutionary process. Regardless of whether this process was entirely gradual or involved punctuated leaps, the prevailing scientific view is that around 100,000 to 50,000 years ago, humans reached a decisive cognitive and cultural threshold. During this period, we witness an unprecedented density and flourishing of symbolic behavior, art, and sophisticated tool-making (Fitch, 2010: 250; McBrearty and Brooks, 2000: 492]. It is precisely this timeframe in which the "Hardware" and "Software" of human cognition attained a level of complexity that can be aligned with the characteristics of the "Qur'anic Adam."
- New genetic evidence (speech-related genes): Genetic research also confirms this gradual picture. While the FOXP2 gene (a foundation for speech) dates back approximately 400,000 years (Krause et al., 2007: 1911), more recent studies on the NOVA1 gene indicate that advanced human language required multiple gradual genetic changes. This gene, which was absent in Neanderthals and Denisovans, provides important clues about the biological underpinnings of language.²

The significance of these findings can be summarized in three points:

First, advanced human language is the product of the interaction of several genes rather than a single gene;

Second, it supports a gradual model of language evolution, in which the accumulation of small mutations over time created the necessary foundations;

Third, the absence of the human version of the NOVA1 gene in earlier species does not prove their "Absolute Inability" to communicate, but it significantly reduces the likelihood that they possessed abstract and complex modern language. Therefore, in light of the Qur'anic portrayal of Adam as a being to whom "All the Names" were taught (al-Baqarah: 31), one may propose that the emergence of the human version of NOVA1 (and likely similar genes) constituted one of the biological prerequisites for this "Divine Teaching," not as its cause, but as the substrate upon which God breathed the spirit.

1. Proto-language is a hypothetical linguistic stage that lies between the pre-linguistic phase of early humans and the complex language of modern humans.

2. A preliminary study by Tajima et al., in which the human version of this gene (absent in Neanderthals and Denisovans) was inserted into mice, showed that this change, although subtle, led to meaningful differences in vocalization patterns and cerebral cortex activity. This gene, which plays a role in neural wiring, has a unique version in modern humans that did not exist in early Homo sapiens (Tajima et al., 2025: 1).

6.3. Comparative Conclusion

A comparison of these two domains leads to the hypothesis that if Prophet Adam, as explicitly stated in the Qur'an, possessed "Real Speech," the "Power of Reasoning," and the "Understanding of abstract concepts," then the period of his life could not have been in the early eras of human presence (with rudimentary language). Although scientific studies in this field are still evolving, the available evidence paints a picture of a complex and gradual process. Genetic findings, such as the probable role of the NOVA1 gene, together with archaeological evidence of symbolic behaviors, all point toward a broad temporal range that began roughly 200,000 years ago, with its key transformations concentrated around 100,000 to 50,000 years ago. Within this period, it appears that both the biological hardware (brain and larynx) and the cognitive software (language and symbolic representation) reached a level of complexity that can be interpreted as the suitable context for the emergence of the "Qur'anic Adam."

7. Analysis of Religious Status and Understanding of Abstract Concepts

7.1. Intra-textual Evidence

In parallel with the linguistic maturity examined in the previous section, the Qur'an presents a human being who, from the very beginning of life, possessed "Complete religious awareness" and a profound understanding of non-material concepts. Setting aside theological discussions regarding the prophethood of Prophet Adam, which prominent exegetes such as Allamah *Ṭabāṭabā'ī* and Makarem Shirazi emphasize, based on his reception of revelation and direct divine address, phenomenological analysis of the verses shows that the described characteristics indicate a level of cognitive maturity that enabled him to comprehend complex abstract concepts. This religious maturity can be traced in three civilizational and behavioral indicators:

- Understanding the concept of "Obligation" and "Law": Receiving the command "And do not approach this tree" (al-Baqarah: 35) signifies humanity's transition from the stage of "Instinct" to the stage of "Obligation." Adam understands that there exists a law that he can either obey or violate. This understanding forms the foundation of ethics and law and distinguishes him as a "Moral Being" from other animals.
- Understanding the concept of "Eternity" and the afterlife: A key psychological turning point in the story of the descent occurs when Satan tempts him with the promise of the "Tree of eternity and a kingdom that will not decay." (Ṭāhā: 120) The fact that Adam is tempted indicates that he already held precise mental assumptions about "Immortality" and "An imperishable kingdom." A being that had no concept of linear time and death would not be tempted by a promise of eternity. Therefore, Adam possessed an abstract understanding of "Future Time" and "Everlasting Life."
- Monotheistic worldview and repentance: The repentant prayer "Our Lord, we have wronged ourselves..." (al-A'raf: 23) expresses a complete religious awareness in which the human holds himself accountable before a "Lord" and fully comprehends

abstract concepts such as "Wronging Oneself," "Forgiveness," and "Loss" (eternal perdition).

7.2. Scientific Evidence: Emergence of Symbolic Behavior and Burial Practices

With this Qur'anic image in mind, the key question is: 'At what point in the history of human development did signs of such a profound understanding of the "Metaphysical" and "Death" first appear among humans?'

While anthropological theories have extensively discussed the gradual evolution of religion from simple forms of religious thought (such as animism), this article focuses directly on archaeological evidence to identify the emergence of the cognitive prerequisites for religious practice.¹ In other words, our question is: 'From what time onward do physical evidences of the capacity for religious thought appear in human history?' These evidences manifest primarily in two domains:

- Burial practices and belief in the afterlife: Archaeological evidence indicates that the first intentional human burials (by both Neanderthals and anatomically modern humans) date back to approximately 100,000 years ago (Zilhão et al., 2014: 13). However, more complex burials accompanied by "Grave Goods," the use of red ochre (symbolizing blood or life), and ornaments appear with increasing frequency from the Upper Paleolithic period (mainly from around 40,000 years ago) (Formicola, 2007; Hovers & Belfer-Cohen, 2018: 3). The presence of these objects in graves is interpreted as the strongest archaeological evidence for inferring "Belief in an afterlife," as it suggests that the living believed the deceased would need these items in another world.
- Symbolic behavior and ritual art: Concurrent with these developments, increasing evidence of symbolic thought emerges in various parts of the world. The appearance of ornamental objects and abstract engravings in South Africa (such as Blombos Cave, around 100–75,000 years ago), as well as figurative and possibly religious art in Eurasia (for example, around 40,000 years ago), all indicate the formation of the brain's capacity to process non-material and abstract concepts (Henshilwood et al., 2011: 219). This cognitive capacity can be interpreted as a biological prerequisite for the possibility of receiving and understanding any form of religious or revelatory experience.

7.3. Comparative Conclusion

The convergence of these data presents a coherent interpretive framework. If the "Qur'anic Adam" is defined by characteristics such as "Understanding of Eternity," "Fear of eternal loss," and "Reception of moral obligation," then it appears that his living environment aligns more closely with a period in human history in which humans had reached a specific cognitive threshold. Archaeological evidence shows that during this period, humans began to reflect upon "Death" and the "Other World" and expressed this reflection through burial

1. Interested readers may consult specialized sources for details of these evolutionary theories (Peoples et al., 2016; Rossano, 2006).

practices and symbolic behaviors. Regardless of debates concerning the speed of this evolutionary process, these findings direct us toward the importance of the time range between approximately 100,000 and 50,000 years ago, a period in which the mental capacities necessary for accepting metaphysical and religious concepts appear to have reached maturity.

8. Analysis of Cultural and Climatic Characteristics: Modesty, the Emergence of Clothing, and Geography

8.1. Intra-textual Evidence

In addition to language and religious awareness, the Qur'an highlights another distinctive characteristic of Prophet Adam that signifies a cognitive leap and humanity's departure from the animal state: "Modesty" and the "Need for clothing." A close analysis of the relevant verses illuminates not only the psychological dimensions but also the technological and environmental conditions of his era:

- Cognitive leap in self-awareness (modesty): The immediate reaction of Adam and Eve upon the exposure of their nakedness (then their private parts became apparent to them, and they began to fasten upon themselves leaves of Paradise (al-A'rāf: 22)) indicates a "Profound self-awareness." Unlike animals, which have no concept of nakedness, this instantaneous response and their attempt to cover themselves with leaves show that the concept of "Covering" had become an ingrained value for them. The use of tree leaves here does not necessarily indicate a complete lack of familiarity with clothing technology, but rather an emergency response to a critical situation. It demonstrates that preserving covering, even in the absence of proper materials, was a primary mental priority for humans.
- Climatic implications and the value of clothing: The study of Surah *Ṭāhā* provides further clarification regarding the status of clothing. God mentions "Lack of Nakedness" alongside "Lack of Hunger" as blessings of the primordial environment: "Indeed, it is [promised] for you that you will not go hungry therein nor be naked" (*Ṭāhā*: 118). This semantic pairing is highly significant. Just as "Food" was a constant concern and survival challenge for early humans, placing "Clothing" alongside it indicates that in the real living environment of that era, obtaining and maintaining clothing was a difficult and laborious task. This description corresponds to a period in human history in which humans had a pressing need for clothing, but the technology to produce it was not yet advanced or accessible enough to easily meet this need. Thus, clothing, like food, required continuous effort.
- Climatic implications (exposure to sunlight): Another subtle point lies in the following verse: "And indeed, you will not be thirsty therein nor be exposed to the sun." (*Ṭāhā*: 119) In this verse, Adam is promised that in Paradise he will neither thirst nor suffer from direct exposure to the sun. The focus of this research is on the second phrase, "*Lā Taḍḥā*." The term "*Taḍḥā*" means to be exposed to the direct radiation of the sun. The emphasis on protection from "Sunlight" (rather than cold) provides a geographical clue, portraying the natural environment of humans as a

sunny, open landscape (non-forested); a setting in which protecting the skin from direct solar radiation was a vital necessity.

8.2. Scientific Evidence: Lice Evolution, Early Clothing Tools, and Savannah Climate

Correlating the Qur'anic descriptions (the pressing need for clothing under conditions of simple technology and a sun-exposed environment) with the latest findings in paleoanthropology and genetics clearly aligns with the timeframe of the "Cognitive Revolution":

- Lice evolution and the history of clothing: Since early textiles do not survive due to their perishable nature, genetics relies on the "Molecular Clock of Lice."¹ Body lice² could only evolve from head lice³ once humans began wearing clothing on a regular basis. More recent genetic studies estimate the timing of this divergence between 83,000 and 170,000 years ago (Toups et al., 2011: 31). Although this date comes with some uncertainty, it indicates that humans had become dependent on artificial covering in the early stages of the last Ice Age and prior to the major migration out of Africa.
- The laborious technology of clothing production: Archaeological evidence shows that making clothing in this period was a highly difficult process requiring tools. The oldest known "Bone Awls," used for piercing animal skins to join pieces, were discovered in Blombos Cave, South Africa, and date between 84,000 and 72,000 years ago (d'Errico and Henshilwood, 2007: 144). The absence of fine needles (which appeared roughly 40,000 years later) confirms that clothing at that time was not yet advanced. It was likely limited to complex draped skins or pieces fastened with ties or similar methods. Clothing was therefore a scarce commodity that required great effort to produce, not an easily manufactured item. In that era, clothing could be considered a blessing on par with food and water, a status it rarely held in later and more recent periods.
- Savannah environment and sunlight exposure: Climatic analyses also correspond well with the Qur'anic description of "Lā Tadhā" (not being exposed to the sun). Research shows that during the period of human dispersal from Africa (100,000 to 60,000 years ago), the dominant environment in East Africa and migration routes shifted from dense forests to open grasslands (Savannah) (Blome et al., 2012: 566-

1. The genetic study of body lice serves as an indirect indicator for estimating the beginning of regular clothing use by humans. The logic of this method is that body lice, unlike head lice, live and lay eggs on clothing and are dependent on it for survival. Therefore, the evolutionary divergence of body lice from head lice (which live on hair) can provide a minimum estimate for when humans began wearing clothing regularly. Toups et al. (2011) estimated the divergence of body lice from head lice between 83,000 and 170,000 years ago. An earlier study by Kittler et al. (2003) proposed a range between 30,000 and 114,000 years ago, which overlaps with Toups' findings. These broad ranges reflect the inherent uncertainty of the molecular clock method and should be used alongside archaeological evidence.

2. *Pediculus humanus corporis*

3. *Pediculus humanus capitis*

576; Tierney et al., 2017: 1024-1025). One of the main migration routes passed through the Bab-el-Mandeb Strait into the Arabian Peninsula.¹ In these treeless environments, humans, who had lost most of their body hair (Jablonski and Chaplin, 2000: 58-59), faced a serious challenge from direct and harmful solar radiation. In such a setting, having shelter and clothing for protection against sunburn was a "Vital Blessing."

8.3. Comparative Conclusion

Synthesizing these Qur'anic descriptions with scientific evidence makes it possible to propose a probable temporal range for the living environment corresponding to the story of Adam. This argument narrows the timeline from both sides, like two barriers:

On one hand, the Qur'anic image of a human who needs clothing and is not safe from the sun (*Lā Taḍḥā*) shows greater compatibility with a period after approximately 100,000 years ago. Genetic evidence (related to lice) and climatic data (the expansion of savannas) indicate that the environmental pressure to protect hairless skin reached its peak during this period.

On the other hand, the Qur'an's emphasis on the primitive method of producing clothing aligns with a period before approximately 45,000-40,000 years ago. This is because, after this date, the emergence of fine needles advanced sewing technology, and clothing was no longer such a scarce and laborious commodity. In contrast, during the 100,000-45,000-year range (especially 90,000-50,000 years ago), only simple bone awls existed, and clothing was limited to complex draped skins or pieces of hide tied together.

Therefore, the time range between 100,000 and 45,000 years ago, particularly the period of 90,000 to 50,000 years ago, appears to provide conditions that correspond remarkably well with both aspects of the Qur'anic description, namely, the "Severe need for clothing" and the "Technological limitations in its production." This temporal framework identifies a historical "Turning Point" in which humans were biologically and cognitively ready, yet technologically still in the early stages.

9. The Issue of Burial: A Sign of the Cultural Transition Period

9.1. Intra-textual Evidence

Having examined language, religious awareness, and the sense of modesty, we now turn to another prominent cultural feature in the story of Adam's children: "The way early humans confronted death and the corpse." The Qur'an addresses this issue immediately after the murder of Abel, in verse 31 of Surah *al-Mā'idah*, with vivid imagery:

1. It is noteworthy that this geographical framework, which is entirely based on scientific data, is not fundamentally incompatible with those Islamic traditions that point to Mecca and the Hijaz region as the place of Adam's descent or residence. However, due to the lack of consensus and the complexities of transmission in the narrations, this article refrains from comparative analysis with traditions and bases its argument solely on scientific evidence.

"Then Allah sent a crow searching in the ground to show him how to hide the shame of his brother. He said, "O! Woe to me! Have I failed to be like this crow and hide the shame of my brother?"

This verse presents a clear picture of Cain's confusion and bewilderment. Allamah Ṭabāṭabā'ī in "*al-Mīzān*" emphasizes that the cry "Have I failed to be like this crow..." indicates that Cain truly did not know what to do with his brother's body, and God taught him this basic knowledge through a completely natural phenomenon, the behavior of the crow. Makarem Shirazi in "*Tafsir Nemooneh*" also focuses on this bewilderment and writes that Cain "Did not know what to do with the body." The important point is that in that era, burial had not yet become an established and widespread cultural tradition. If the practice of burial had been an institutionalized and well-known custom, Cain would undoubtedly have followed it and would not have needed to take the crow as a model.

Thus, the Qur'anic narrative leads us to a period in human history in which humans, despite possessing reason, language, modesty, and religious awareness, were still in a stage of cultural transition. This was a time when much practical knowledge was acquired not through transmitted traditions, but through direct observation of nature and individual experience. This image corresponds precisely to a stage in human cultural evolution in which humans had only recently begun to reflect upon the meaning of death and to form rituals of respect for the dead.

9.2. Scientific Evidence: Scattered Burials and the Transition to Cultural Traditions

To determine this transitional period more precisely, one can refer to archaeological evidence regarding "Burial Practices." The available evidence reveals a clear historical trajectory of transformation: "The oldest known intentional burials date back to approximately 100,000 years ago in the Middle Paleolithic period." (Zilhão et al., 2014: 13) These earliest burials, such as those associated with Neanderthals, were generally limited to "Corpse Disposal"; that is, placing the body in a simple pit, without systematic grave goods or clear signs of complex symbolic ritual (Rendu et al., 2013: 84-85). A defining feature of this period is the high degree of scatter and the lack of a unified cultural pattern. Evidence indicates that intervals with few graves were replaced by long periods of "Evidence Scarcity," (Pomeroy et al., 2020) suggesting that burial had not yet become a widespread and stable tradition.

This archaeological picture corresponds remarkably well with the atmosphere of the Qur'anic narrative of Cain and Abel. Cain's confusion when confronted with his brother's body and his need to learn from a natural act (the crow) clearly indicates that the knowledge of burial, as an institutionalized and communal cultural tradition, did not yet exist in his society. This scene can be viewed as a reflection of the very early period that archaeology identifies in the Middle Paleolithic, an era in which humans, despite possessing advanced cognitive capacities, were still engaged in trial and error and the formation of their earliest social rituals.

This gradual process of institutionalization produced clearer outcomes in subsequent periods. Especially after approximately 50,000 years ago, we witness the emergence of

more complex graves accompanied by rich grave goods (such as ivory ornaments in the Sungir burials in Russia or shell beads in Africa and the Middle East) and stronger signs of spiritual beliefs (Formicola, 2007: 446; Hovers & Belfer-Cohen, 2018: 3). This transformation shows that burial was no longer a simple and scattered practice, but had become a "Cultural institution."

9.3. Comparative Conclusion

On this basis, it can be interpreted that the Qur'anic narrative of Adam and his sons corresponds not to a later period in which cultural traditions were fully established (after approximately 50,000 years ago), but rather to the pre-institutional phase and the transition toward cultural institutions. This period, which roughly aligns with the late Middle Paleolithic and the beginning of the Upper Paleolithic (for example, between 100,000 and 50,000 years ago), appears to have been an age in which humanity stood at the threshold of transforming "scattered actions" into stable "Cultural Traditions." This temporal framework demonstrates a notable correspondence with the Qur'anic description of a human who is learning the first civilizational lessons directly from nature.

10. Analysis of Adam's Status as *Abū al-Bashar*: The Common Origin of Humanity

10.1. Intra-textual Evidence: Genealogical Unity and Universal Addresses

The last and perhaps most fundamental characteristic mentioned for Prophet Adam is his position as the "Common Father" and "Sole Origin" of all present-day humans. The importance of this matter in the Qur'an goes far beyond a mere historical report, as it constitutes the foundation for "Human Equality" and the rejection of racism.

The Qur'an expresses this truth on two levels:

First, the explicit affirmation of monogenesis in the first verse of Surah *al-Nisā'*:

"O mankind, fear your Lord, who created you from a single soul and created from it its mate and dispersed from both of them many men and women."

Second, the repeated and universal addresses with the title "O! Children of Adam" in various surahs (al-A'rāf: 26, 27, 31, 35; Yāsīn: 60). These general addresses, directed at all humanity throughout history, indicate that the Qur'an regards Adam's paternal relationship not as a mythical symbol, but as a genealogical reality for every individual human being.

In explaining the manner of this proliferation, exegetes hold different views. Allamah Ṭabāṭabā'ī, adhering to the apparent meaning of the verses, maintains that the human race originated exclusively from Adam and Eve, and that their immediate children married one another because no other option existed at that time (Ṭabāṭabā'ī, 1999 AD/1378 SH: 4,135). In contrast, Makarem Shirazi opens the door to other possibilities. He states that it is possible that Adam's children married "Survivors of previous humans," since, according to scientific studies, Adam was not the first human-like being on earth; although he considers the apparent meaning of the verse closer to the first view (exclusive descent), he does not reject the second possibility (marriage with survivors of earlier humans) (Makarem Shirazi, 1995 AD/1374 SH: 3, 246-247).

The important point in both views is that the status of Prophet Adam as *Abū al-Bashar* for the entire present generation remains undeniable. This Qur'anic emphasis on a single father and mother for all humans raises an important question that must be answered from a scientific perspective: "If Prophet Adam was truly the common father of all present-day humans, from Africans and Asians to Europeans and Australian Aboriginals, then in what period must he have lived for such a position to be possible?"

10.2. Scientific Evidence: Population Divergence Points and Historical Bottlenecks

To determine the temporal range during which the "Common Father" of all present-day humans could have lived, one must attend to a simple yet decisive logical principle: the "Time of population divergence," that is, the period when different human groups separated from one another and, until recently, had no further contact. The logic underlying this criterion is clear: "If Prophet Adam is the father of all living humans on earth, from Australian Aboriginals to the inhabitants of the Americas and Europe, he must necessarily have lived at a time when these human groups had not yet separated and still shared genetic connections. Had he appeared after the separation and isolation of any of these groups, he could not have been the father of the group that had already diverged."

The crucial question, therefore, is: 'When was the last time that all ancestors of present-day humans were part of a single population?'

- Divergence point (the point of no return): The most comprehensive archaeological and genetic studies, including the research of O'Connell and colleagues, indicate that the first major and definitive divergence in human history is associated with the migration of the ancestors of Australian Aboriginals and Melanesians (known as the Sahul populations). Genetic evidence and precise calibration of molecular clocks converge on the conclusion that this group separated from the main body of the human population approximately 45,000 to 50,000 years ago and remained in isolation (O'Connell et al., 2018: 8285).
- Modeling of the Out-of-Africa migration: This finding is consistent with other genetic modeling studies. Research by Liu and colleagues on 52 human populations estimates the latest possible date for a shared ancestral population at approximately 56,000 years ago (Liu et al., 2006: 234). Likewise, studies by McEvoy and colleagues (McEvoy et al., 2011: 824) show that the main wave of migration linking all non-African populations occurred between 60,000 and 50,000 years ago.

These findings delineate a definitive temporal boundary: "The common father of all humans must have lived prior to 50,000 years ago and most probably at least around 60,000 years ago."

Conclusion

Drawing on explicit Qur'anic indications, this study sought to identify the key characteristics of the epoch of Prophet Adam and then locate these characteristics within the natural history of humankind. Its principal aim was not to propose a definitive

numerical chronology, but rather to determine the "Historical Referents" and the "Civilizational-cognitive-biological features" that the Qur'an highlights for that period. The dates cited in this article merely reflect the current scholarly consensus and may be refined with the discovery of new evidence, as is standard practice in all scientific disciplines; they are never intended to negate or affirm Qur'anic teachings.

Accordingly, this article argues that, through careful attention to scientific evidence and the adoption of an interpretive approach, it is possible to present a portrayal of Adam that is not only consistent with science but also situated at a pivotal juncture in the evolutionary history of humankind.

Table 1. Summary of Comparative Findings between the Characteristics of the Epoch of Adam and Scientific Evidence

Qur'anic Marker	Principal Scientific Correlate	Temporal Range
Advanced language and reasoning	Emergence of advanced cognitive capacities and genes related to complex speech	Primarily after ~100,000 years ago
Modesty, clothing, and sunlight	Evolution of body lice + early clothing tools + life in open savannah	Compatible with 100,000–45,000 years ago
Father of all humanity	Prior to major divergence of Sahul (Australia–New Guinea) and American populations	Prior to ~50,000–60,000 years ago
Religious and cultural awareness	Earliest definitive evidence of symbolic behavior and burial rites	Likely from ~100,000 years ago

The key finding of this research is that the approximate period between 100,000 and 50,000 years ago, particularly the interval of 80,000 to 60,000 years ago, represents the best candidate for the simultaneous convergence of all these characteristics (see Table 1). This period may be regarded as an "Interpretive turning point" in which:

1. Humans had cognitively and culturally reached the threshold of maturity required to apprehend complex concepts;
2. Environmental pressures directed them toward key cultural innovations (such as clothing and symbolic behavior);
3. The human population had not yet diverged to such an extent that the assumption of genealogical unity from a single primordial couple would be scientifically implausible.

Thus, the article maintains that the ensemble of Qur'anic indications offers a coherent framework for situating the "Qur'anic Adam" within evolutionary history. According to this interpretive framework, Prophet Adam belongs to the very same great transitional era in which humankind first simultaneously acquired the capacities for "Divine Vicegerency," "Modesty," "Complex Language," and "Clothing," while still constituting the single progenitor of a substantial portion of human lineages. This correspondence paves the way for more precise future investigations, whether in population genetics or in

the archaeology of the Middle East and East Africa, to render this picture increasingly clear through further discoveries.

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