


A Reflection on the Genetic Heritability of Human Behavioral Traits: An Interdisciplinary Qur'anic Study

Mostafa Moradi¹ & Zahra Azari²

1 Assistant Professor, Research Institute for Interdisciplinary Quranic Studies, Shahid Beheshti University

2 Research Institute for Interdisciplinary Quranic Studies, Shahid Beheshti University

Article Info	Abstract
<p>Article type: Research Article</p> <p>Article history: Received 01 February 2024 Received in revised from 25 February 2024 Accepted 12 March 2024 Published online 05 April 2024</p> <p>Keywords: Qur'an and science, scientific exegesis, heredity, genetics</p>	<p>The Holy Qur'an, as the divine scripture of Muslims and the principal source of Islamic knowledge, has consistently played a central role in presenting a worldview, beliefs, and doctrinal principles, while providing answers to fundamental questions that have long occupied human thought in various fields. Among these enduring issues, the subject of heredity and the transmission of traits from one generation to another has been of particular significance within both scientific and religious domains. In scientific fields such as biology and genetics, heredity has been thoroughly investigated, with the transmission of physical traits and certain behavioral characteristics through genes to subsequent generations now well established. However, the inheritance of spiritual attributes and doctrinal beliefs is considerably more complex than that of physical traits. This study explores the heritability of beliefs as traits closely connected to the human soul and psyche. Although the verses of the Holy Qur'an do not explicitly reference genetic science, the fundamental concepts presented within — particularly in relation to creation and the transmission of traits — are, in many respects, reconcilable with contemporary discussions on genetics and heredity. Notably, verses such as 27: Noah (Nuh), 43:28 Az-Zukhruf, and 2:124 Al-Baqarah, which bear more explicit implications in this regard, have been carefully analyzed in this study. It may be argued that the Qur'an contains allusions to the transmission of doctrinal and belief-based traits to subsequent generations, which could potentially offer valuable insights for specialists in this field of scientific inquiry.</p>
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¹ **Email:** m_moradi@sbu.ac.ir

² **Email:** taranombaran72@gmail.com

Introduction

An examination of Qur'anic teachings reveals that the Holy Qur'an has addressed the concept of heredity and, in numerous verses, has also highlighted the role of parents and family in the religious upbringing and guidance of their children. For instance, narratives such as the story of Prophet Noah (Nuh) and his disbelieving son, or the believing offspring of Prophet Abraham (Ibrahim), may offer clues regarding the hereditary transmission of beliefs. These accounts raise the question of whether they suggest a form of spiritual and doctrinal heredity, or whether they merely emphasize the significance of parental religious guidance and upbringing.

This study aims to investigate the Qur'anic perspective on the heritability of beliefs by analyzing and interpreting various Qur'anic verses alongside the viewpoints of Islamic exegetes. Additionally, this research explores other factors that may influence the formation of beliefs in individuals, including parental upbringing, environmental and social influences, and individual will and agency. In this regard, relevant verses are examined, and the interpretations of exegetes concerning the role of heredity and other contributing factors in belief formation are analyzed.

The ultimate goal of this study is to address the fundamental question of whether beliefs, as spiritual and doctrinal attributes, are inherited by subsequent generations, or whether such concepts are entirely dependent upon personal choices and environmental upbringing. In other words, does an individual born into a believing or disbelieving family inherit faith or disbelief by virtue of this lineage, or are faith and disbelief solely the outcomes of personal and autonomous decisions? And if so, what influence, if any, might heredity exert on an individual's beliefs and religious inclinations?

The Holy Qur'an, as a divine guide for humanity, consistently underscores the role of free will and personal choice in the acceptance or rejection of faith. Although certain personality traits may be transmitted hereditarily, faith and disbelief, as spiritual and doctrinal phenomena, are primarily shaped by upbringing and environment. Through a meticulous examination of Qur'anic verses and exegetical opinions, this study seeks to offer a comprehensive response to this intricate issue.

This research pursues several key objectives: to investigate and clarify the Qur'anic perspective on the heritability of beliefs; to examine the role of the family in shaping the religious beliefs of children; to analyze Qur'anic verses and their related interpretations regarding the role of parents; and to explore the influence of hereditary, educational, and environmental factors on the formation of faith and disbelief from both the Qur'anic viewpoint and the lens of contemporary sciences.

The heritability of beliefs and values is a complex, multifaceted topic situated at the intersection of genetics, psychology, and social sciences. In recent years, new studies in this

area have emerged, some of which attempt to explain the role of genetics in the formation of beliefs.

Literature Review

In recent decades, with significant advancements in the fields of psychology, sociology, and genetics, numerous studies have been conducted on the influence of heredity, upbringing, and environment on the formation of religious and spiritual beliefs. Many of these studies have demonstrated that beliefs, much like other personality and behavioral traits, are shaped by a combination of genetic, educational, and environmental factors. For instance, psychological research has shown that certain personality traits — such as trust in others, sensitivity to moral issues, and inclination toward spirituality — can be influenced by hereditary factors. These characteristics may, in turn, indirectly affect an individual's religious and spiritual tendencies.

However, these studies consistently emphasize that heredity is merely one of several contributing factors in the formation of religious beliefs, while family upbringing, social environment, and personal experiences play equally, if not more, significant roles. In this context, sociological research has also addressed the crucial role of upbringing and culture in the development of religious beliefs. Such studies indicate that children raised in environments where religion and faith are considered core cultural values are more likely to embrace faith, whereas those in environments where disbelief or irreligion is prevalent are more inclined toward atheism or religious indifference.

In line with this, Hamidreza Basiri and Maryam Gohari (2013) in their article entitled “*The Role of Heredity in Human Destiny from the Perspective of the Qur'an and Hadith*” identified heredity as one of the undeniable factors influencing human destiny. They argue that moral characteristics, like physical traits, are transmitted from parents to children through genes. Furthermore, the study suggests that doctrinal and belief-based traits inherited through heredity serve as a foundation that can be either strengthened or weakened by environmental factors, including upbringing. In addition, the role of personal will is also highlighted as a determinant in shaping an individual's destiny.

In another study, Hamidreza Basiri and others (2015) in “*Individual Differences Resulting from Genetic Factors from the Perspective of the Qur'an and the Traditions of the Infallibles (A)*” examined both genetic and environmental factors in creating differences among individuals. They argued that, based on certain Qur'anic verses and narrations from the Infallibles (A) which refer to genetic similarities and differences, Islam recognizes the existence of individual differences, viewing them as part of divine wisdom. These differences, they contend, serve purposes such as the division of labor, a means for testing humanity, and a vehicle for attaining divine knowledge. From the Islamic perspective, individual differences can be categorized into two major domains: physical and moral.

Hosein Shahsavand Hasani and Mahdieh Salarpour (2012), in their article titled “*An Introduction to Chromosome Engineering and Genetic Engineering in the Perspective of the Qur'an,*” assert that the biological similarities and differences in the living world — which initially intrigued Mendel and led to the discovery of foundational genetic laws — have been increasingly uncovered in contemporary science. While many claim these discoveries are entirely products of the human intellect, the authors argue that more than 43 verses of the Qur'an subtly and masterfully allude to the foundational principles underpinning genetic engineering. Their article explores themes such as mitotic and meiotic creation and life engineering as referenced in Qur'anic verses.

Similarly, Fatemeh Maghsoudi and Hossein Moradi (2021), in their study entitled “*Examining the Innateness of the Tendency Toward God and the Role of Genetics in Religious Inclinations,*” conceptualize fitrah (innate nature) as a metaphysical notion, distinct from genetic predisposition. They maintain that God has provided both inner proof (reason) and external proof (prophets) to guide humanity. Drawing upon various articles and narrations, the study emphasizes that humans are born with an innate tendency toward God, though this inclination is influenced by factors such as environment, family spirituality, and religious upbringing.

Mohammad Hassan Fayyaz (2020), in his article “*The Nature of the Qur'an's Engagement with Modern Sciences,*” contends that the apparent meanings of the Qur'anic verses do not explicitly encompass all human sciences with their formulas and specificities. Rather, the Qur'an contains incidental and indirect references to certain scientific matters. Fayyaz explains that, while not every scientific discipline is explicitly present in the Qur'an, the scripture addresses all essential religious and spiritual needs, either in detailed or summary form. According to him, the Qur'an interacts with modern sciences in several distinct ways: sometimes refuting outdated scientific ideas previously thought to have influenced it, at other times correcting and completing contemporary knowledge of its time, occasionally endorsing valid scientific principles, and ultimately laying the groundwork for new scientific concepts based on human needs. In general, Fayyaz categorizes the Qur'an's engagement with contemporary sciences into four types of relationships: refutational, corrective, confirmatory, and foundational.

Furthermore, Ivan Charney, in his well-cited article “*Genes, Behavior, and Behavioral Genetics,*” argues that according to the first law of behavioral genetics, all human behavioral traits are heritable. Upon accepting this principle and utilizing statistical methodologies, researchers in psychology, sociology, political science, economics, and business claim to have demonstrated that all behaviors examined within their respective disciplines — regardless of how culturally specific they may seem — possess a heritable component. Moreover, in numerous cases, these scholars assert that they have identified particular genes that play a role in influencing those behaviors.

Final Analysis of the Research Background

Based on the examinations conducted regarding the heritability of beliefs in both Islamic sources and modern scientific studies, it can be concluded that the Holy Qur'an does not explicitly refer to a genetic inheritance of faith and disbelief. Instead, it places greater emphasis on the roles of upbringing, education, and environment in shaping religious beliefs. From the perspective of Qur'anic exegetes as well, genetic inheritance cannot directly transmit faith or disbelief; however, certain personality traits and behavioral tendencies that influence these beliefs might be passed on to subsequent generations through heredity. Contemporary research similarly shows that faith and disbelief, like other personality and behavioral characteristics, are influenced by a combination of hereditary, educational, and environmental factors. Nonetheless, the role of free will and individual choice in the acceptance or rejection of faith remains one of the most significant and decisive elements in this regard.

Examining Three Categories of Qur'anic Verses

In this study, it was first necessary to extract key concepts relevant to the research topic. By reviewing the text of the Qur'an and tagging relevant verses, 254 verses were identified that explicitly or implicitly relate to the inheritance and transmission of traits. Among these, several verses stand out for their explicit references to the subject, including verse 27 of Surah Nuh (Noah), verse 28 of Surah Az-Zukhruf, and verse 124 of Surah Al-Baqarah, which were analyzed and interpreted with particular care and attention.

Surah Al-Baqarah, Verse 124

Prophet Abraham (A) and the Role of Fatherhood

One of the most well-known uses of the term 'Ab' (father) in the Qur'an pertains to Prophet Abraham (A), who holds a significant position as a spiritual father to nations. In verse 124 of Surah Al-Baqarah, God addresses Abraham (A) as both a father and a leader of nations. Allameh Tabataba'i (R) interprets the term '*dhurriyah*' (offspring) in this verse as referring to the descendants of Abraham (A). He notes that this verse concerns the granting of the station of Imamate to Prophet Abraham (A), which occurred in the latter part of his life after the births of Ishmael (A) and Isaac (A), at a time when Ishmael (A) and his mother resided in the land of Mecca. The phrase '*and from my offspring*' in this verse serves as evidence for this interpretation, as Abraham (A) requests the station of Imamate for his descendants as well ¹.

In *Tafsir Nemouneh* (The Exemplary Commentary), it is also mentioned under this verse that the position of Imamate is reserved for the pure servants of God, meaning that this leadership

¹ M. H. Tabatabai, *Al-Mizan fi Tafseer al-Qur'an*, vol:1. trans. S. M. Baqir Mousavi Hamdani (Qom: Islamic Publications Office, 2003), 367.

will only be bestowed upon Abraham's righteous and devoted descendants¹Likewise, Ayatollah Taleghani (R) believed that although Abraham's (A) request might have implied a concern for both intellectual and bloodline inheritance, mere genetic inheritance is insufficient for attaining the station of Imamate. He stated:

It seems that in Abraham's (A) request there was attention to the intellectual and bloodline inheritance of his progeny, but although heredity may have an effect, it alone is not sufficient for attaining the station of Imamate²

Surah Az-Zukhruf, Verse 28

The word 'aqib' in this verse refers to "descendants" or "posterity." From both a scientific and historical perspective, the cultural and ideological influence exerted by an individual upon future generations can lead to the formation of civilizations and major religious traditions. This is precisely what occurred in the case of Prophet Abraham (A) and his progeny. In verse 28 of Surah Az-Zukhruf, God refers to one of the significant accomplishments of Prophet Abraham (A), stating that he left the message of monotheism (the oneness of God) among his descendants. This verse highlights that the monotheistic message delivered by Prophet Abraham (A) became a fundamental and enduring principle of faith in God that was preserved among his followers for generations.

The term 'bāqiyah' in this verse signifies this lasting message of monotheism and belief in the One God, which Prophet Abraham (A) passed on as a spiritual legacy to his posterity. This message remains foundational in the Abrahamic faiths — Islam, Judaism, and Christianity.

The concluding part of the verse — 'that perhaps they might return' — indicates God's hope that people might ultimately abandon false paths and return to the worship of the One God. From a scientific and sociological viewpoint, the transmission of beliefs and ideologies from one generation to the next is a continuous phenomenon within human societies. Especially when a spiritual or cultural message such as monotheism is introduced by a prominent figure like Prophet Abraham (A) as a fundamental value, it can persist for centuries and even millennia. Such transfer and stabilization of concepts at the religious and cultural levels typically occur through social mechanisms such as education, upbringing, and cultural reinforcement.

Thus, this verse from Surah Az-Zukhruf illustrates the power and continuity of the monotheistic message that Prophet Abraham (A) established as a lasting heritage for future generations. From a social-scientific perspective, it also points to the phenomenon of how

¹ N. Makarem Shirazi et al., *Tafseer al-Nemuneh*, vol:1 (Tehran: Dar al-Kutub al-Islamiyyah, 2013), 311.

² Mahmoud Taleghani, *Partovi az Qur'an*, Vol. 1 (Tehran: Entesharat-e Sherkat Sahami-e Ketab, 1979), 292.

beliefs and values can be transmitted as an enduring legacy, shaping the moral and spiritual foundations of subsequent societies.

Surah Nuh, Verse 27

In this verse, Prophet Noah (A) addresses God, describing the severe corruption and rebellion of his people, and warns that if these misguided individuals remain, not only will they persist in their own deviation, but their future generations will also be led into corruption. Prophet Noah (A) expresses concern over the potential for these wayward people to produce offspring who would continue in immorality and disbelief. In this context, the term '*fājir*' refers to immoral behavior, while '*kāffār*' signifies disbelief and rejection of faith.

From scientific and social perspectives, this verse also addresses significant issues connected to societal and educational patterns. It highlights how destructive beliefs and behaviors can be perpetuated within communities and families if left unchecked. The idea is that when corruption becomes deeply rooted in both ideology and practice, it leaves no room for reform or moral recovery.

Summary of Qur'anic Discussions

Based on a lexical analysis and the interpretations of commentators regarding these three categories of Qur'anic verses, it can be concluded that behavioral and ideological traits can be transmitted to future generations not only through upbringing and environment but also through innate physical and genetic characteristics. The Qur'an acknowledges the influential roles of education, social context, and family in shaping beliefs, while also implying the potential heritability of certain predispositions that may affect belief formation.

Heritability of Behavioral Traits in Contemporary Scientific Findings

The science of genetics examines the process through which biological information is transmitted from one individual to another — more precisely, from parents to offspring and subsequent generations. A fundamental concept within this discipline is *heritability*, which investigates the specific roles and effects of genes in the transmission of various traits. In nature, biological information is transferred from DNA to RNA and subsequently translated into proteins. Hundreds of proteins and enzymes participate in these intricate processes. The translation of RNA back into DNA, and the regulation of gene expression, are critical stages in this process and can be influenced by the cellular environment, ultimately affecting the activity of proteins within cells. These changes may lead to variations in physical characteristics or other human traits.

Significantly, these developments occur even among genetically identical individuals, such as monozygotic twins. Variations in the quantity and activity of regulatory proteins can notably

affect the production of proteins involved in cellular structure and functions, especially within the brain. Any mutation in a gene has the potential to alter protein production in a cell, and when such mutations occur in brain cells, they can influence brain functions and, consequently, modify human behavior¹ (Eddy, 2001; Sagha Pour, 2016).

The expression of specific genes within cells is responsible for the differentiation of various cell types such as neurons, blood cells, and liver cells. This means that gene expression patterns can increase in number, enabling a single gene to exert multiple effects within the body. Furthermore, various environmental mechanisms can influence gene expression and alter the function of these genes in the human body.

One of the most fascinating discoveries in genetics in recent years has been the identification of the number of genes present in human cells, estimated to be around 25,000. Considering the structural complexity of the human body, particularly the brain, this number seems relatively low. As a result, scientists have sought mechanisms to explain how such a limited number of genes can account for the body's intricate operations. The solution to this mystery, uncovered in recent years, lies in the fact that multiple different versions of a single gene can be expressed and translated within the human body. Recent research in life sciences suggests that RNA molecules play a significant role in regulating the production of diverse proteins²

These new findings indicate that for every human trait and characteristic, numerous genes are involved. In particular, behavioral and personality traits are influenced by a large network of genes. This highlights the pivotal role of brain structure in the generation of behavior and its effects on moral, behavioral, and even psychological states in human beings.

Heredity in Genetics

The concept of heritability has a longstanding history, consistently capturing human attention. What underscores the significance of this subject is the fact that both ancient societies and religious traditions have addressed it in various forms. Studies of ancient Persian social life reveal that early communities had a basic understanding of the equal contribution of male and female in reproduction and the transmission of traits to offspring. Similarly, while the Qur'an — the holy scripture of Islam — does not directly reference genetic inheritance, it implicitly acknowledges the interconnected influences of heredity and environment, and their roles in shaping human behavior.

¹ M. Saqapour et al., "Environmental Effects on Genetic Changes," *2nd National Congress on Strategies for Achieving Sustainable Development in Science and Technology Sectors*, ca. 2012 & Sean R. Eddy, "Non-Coding RNA Genes and the Modern RNA World," *Nature Reviews Genetics* 2, no. 12 (2001): 919–929.

² A. Motavali Zadeh Ardekani, "A Review of Human Genetics and Anthropology Textbook," *Anthropology Review Journal*, 2021. & 2012 & Sean R. Eddy, "Non-Coding RNA Genes and the Modern RNA World,

Recent genetic research has established that genes play a role not only in determining physical traits but also in influencing behavioral tendencies such as excitability, impulsivity, sensation-seeking, adventurousness, novelty-seeking, and susceptibility to psychological disorders like schizophrenia, depression, bipolar disorder, and autism. In contemporary fields such as social sciences, psychology, and philosophy, the role of genes in the formation of personality, behavior, human nature, and brain activity — as the sole processor of all human experiences and behaviors — continues to be a subject of critical analysis and discussion.

For example, an addictive personality and behavior are observed in many individuals. Addiction to substances such as drugs, alcohol, cigarettes, and even materials like chocolate are among the things people use, according to their needs, to cover up negative emotions. Studies have shown that, in general, every brain is capable of becoming addicted, but some brains are more predisposed due to genetic factors. Many studies have also been conducted on traits such as aggression, violent behavior, shyness, and introversion, all of which confirm the fact that genetics plays a decisive role in determining the extent and degree of each of these personality and behavioral characteristics in humans. The role of genes in psychological disorders has been examined through various methods over the past decades.

From a scientific perspective, behavioral genetics demonstrates that some psychological and behavioral traits, such as intelligence, anxiety, and even certain personality characteristics, can be genetically inherited. However, what connects behaviorism and genetics is the theory of behavioral conditioning — meaning that personality and behavioral traits in individuals are potentially trainable and, regardless of genetic background, can be shaped through proper conditioning, namely through interaction with the environment.

Epigenetic changes are alterations in DNA that regulate the switching on or off of genes. Extensive epigenomic studies have identified several locations with changes in DNA methylation in genes involved in brain development and neurotransmitter pathways, which are associated with psychological disorders. Therefore, understanding the mechanisms involved in the initiation, maintenance, and heritability of epigenetic states is an important aspect of current biological research, especially in the study of learning and memory, emotions, and social behavior in humans.

Latest Findings

From a scientific standpoint, providing a complete account of the evolution of beliefs and convictions requires more evidence. Undoubtedly, religious beliefs have profoundly deep roots within human beings — so deep that they cannot be fully explained through social or educational influences alone. It is likely that religion itself has not evolved independently, but rather through the process of our cognitive reasoning, shaped by accepted structures or cognitive frameworks such as social structures. Perhaps this belief system contains more truthful information

compared to other fabricated data. Although in modern industrial societies, secularization has been officially recognized, religious beliefs (religion itself) still remain far from complete extinction. Studies have shown that religious attitudes and behaviors have a genetic component ranging from 20% to over 50%.

Although the precise genetic basis of religious beliefs has not yet been discovered, based on the research conducted, it is certain that religiosity (religious beliefs) is not attributed to a single “religious gene.” Rather, like any other complex trait, it has a polygenic foundation. Furthermore, this concept aligns with the theory of polygenic evolution of religious beliefs as a capacity within the cognitive reasoning process. Additionally, since religious beliefs are somewhat hereditary, in most cultures, religiously committed individuals tend to have more offspring than non-religious ones, which has consequently contributed to the evolutionary emergence of religious beliefs.

Moreover, since religious beliefs are to some extent hereditary, in most cultures, religiously affiliated individuals tend to have more offspring compared to non-affiliated individuals, which has consequently led to the evolutionary emergence of religious beliefs. Despite theories aligned with a decline in the number of religious and devout individuals, it is expected that in the next 50 years, the number of religious individuals worldwide will be on the rise¹

Today, more than ever before, information about the genetic contribution to psychological development is available, raising questions about how this information is received and utilized by individuals in shaping their judgments and behaviors. There is strong evidence indicating that genetic explanations lead to genetic essentialism. In fact, the reinforcement of beliefs results from a form of psychological orientation that is naturally and unchangeably determined by genes. The aim of our research is to gain a better understanding of how genetic information and beliefs regarding the heritability of virtue influence individuals' perceptions of virtue. It also refers to theories and studies addressing genetic reports in the area of virtue, which may lead individuals to perceive virtue as less of a flexible skill. This, in turn, potentially creates conditions for negative effects in parenting and the reinforcement of virtue. Our research has examined these possibilities to offer new knowledge based on the complex links between genetic information, public beliefs, and aspects of human growth and flourishing²

In another study, the extent of genetic contribution to fundamental cognitive changes and the influencing factors related to beliefs about future-oriented harm has been examined. In this research, individual differences in all these processes can, to varying degrees, be explained by genetics. The extent of the genetic role in these processes' ranges between 13% and 39%. These

¹ M. Fieder and S. Huber, “The Evolutionary Biology of Religious Behavior,” *Interdisciplinary Journal for Religion and Transformation in Contemporary Society* 7, no. 1 (2021): 303–334.

² M. Vess et al., “Genes and Virtue: Exploring How Heritability Beliefs Shape Conceptions of Virtue and Its Development,” *Behavior Genetics* 49 (2019): 168–174.

results provide new insights into the heritability of fundamental mental processes. By doing so, clues have been offered regarding the probable degree of heritability of more complex psychological traits. These studies have also focused on quantifying the heritability of traits and behaviors of very high complexity. By quantifying cognitive and emotional mechanisms at lower levels, it may be possible to obtain overall results about the likely range of heritability degrees across a broad spectrum of behaviors and traits, and to identify the factors most involved in such heritability. Such knowledge could guide us in the effort to refine phenotypes, since in sensitive areas like genetics, interventionist actions based on processes tend to be more successful¹.

Conclusion

Although the Holy Qur'an does not directly and in specialized scientific language refer to genetics in its modern sense, certain verses address issues related to creation, heredity, and human diversity, which can indirectly relate to genetic concepts. These verses include those about embryonic stages, human diversity, and creation from sperm and soil, which can contribute to a better understanding of biological processes and genetic influences. In some of these verses, various aspects of natural disposition, the impact of heredity, and the role of upbringing and environment in shaping behaviors are discussed. Certain key concepts related to the science of genetics, such as heredity, environmental influences on behavior, and the role of will and choice in human behaviors, are presented in Qur'anic verses in a way that indicates the complexity of human behavior and the interaction of various factors, including genetics and environment, upon them.

Of course, according to various Qur'anic verses and the necessities of Islamic faith, human beings, despite genetic and environmental differences, possess free will and responsibility in choosing their behaviors. The interpretation of behavioral genetics in the Holy Qur'an is comprehensible through concepts such as innate disposition (*fitrah*), the influence of upbringing and environment, and individual responsibility. The Qur'an points out that humans possess inherent characteristics such as greed, avarice, weakness, and haste — traits that might be associated with genes — but these characteristics develop through interaction with the environment and upbringing. Furthermore, the Qur'an emphasizes free will and individual responsibility in choosing behaviors, showing that despite genetic and environmental influences, humans ultimately remain accountable for their actions.

In this study, by reviewing all Qur'anic verses, 254 verses containing explicit or implicit concepts related to heredity and the transmission of traits and beliefs were collected. Among

¹ V. Vellani et al., "Quantifying the Heritability of Belief Formation," *Scientific Reports* 12, no. 1 (2022): 11833.

these, verse 27 of Surah Nuh, verse 28 of Surah Zukhruf, and verse 124 of Surah Baqarah made more direct references to the discussion of heritability of beliefs.

The heritability of beliefs and values is a complex and multifaceted topic situated at the intersection of genetics, psychology, and social sciences. In recent years, new research has been conducted in this area, some of which has focused on explaining the role of genetics in the formation of beliefs. Considering that throughout human history one of humanity's constant concerns has been the survival and preservation of its offspring, it can be said that the key to this mystery lies within the science of genetics. Since we know that the DNA molecule plays a crucial role in transmitting genetic codes from parents to children, it can be concluded that the transmission of physical traits from parents to children is an inevitable and unavoidable matter.

This subject has even long been studied in ancient cultures, such as ancient Iran, and the shared role of both genders in heredity has been mentioned. However, the fact that not all temperamental traits are heritable is worth considering. Yet, which among the approximately twenty thousand human genes are expressed depends on environmental stimuli. It must also be acknowledged that, for example, a gene associated with spirituality might manifest as the trait of faith in a person or, under environmental influences, remain undeveloped or suppressed.

This study demonstrated that the latest findings of genetic science confirm the possibility that behavioral and even belief-related traits could be transmitted through genes. Ultimately, it is worth noting that the Qur'an primarily addresses general principles of human creation and the divine order within these processes, while the scientific interpretation of their details has been entrusted to human knowledge, which has expanded over time and has been complemented by new concepts such as genetics.

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