ON THE CONFLICT BETWEEN SCIENCE AND HADITH: A FRAMEWORK FOR NAVIGATING EPISTEMOLOGICAL TENSIONS

Muntasir Zaman

This paper examines how modern and premodern Muslim scholars grappled with the complex relationship between scripture and empirical evidence, presenting as its case study hadith reports describing the extraordinary height of Prophet Ādam and early humans. Through this case study, the paper aims to contribute to two broader burgeoning discourses: the tension between science and Islamic scripture, and the concern that classical Muslim scholars were indifferent to the complexities that preoccupy modern Muslim thought.

The paper also explores a nexus of interconnected disciplines, including epistemology, science, archaeology, hadith criticism, and pre-Islamic scriptural narratives. Given the varied epistemic grading of hadith reports, this case study facilitates a reexamination of both the meaning (*dālala*) and the transmission (*thubūt*) of hadith concerning Ādam's height. In doing so, this essay not only addresses the specific contentions at hand but also proposes a universal framework for engaging with other contemporary conflicts between established scientific facts and Prophetic reports.

Keywords: Science and religion; Hadith and science; scripture and science; paradigms for conlict resolution in science and religion; archaeology, prophetic reports and modernity.

"Even if the hadith were sound, it would be easier to interpret it metaphorically than to reject matters [of astronomy] that are conclusively true…The greatest thing in which the atheists

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> rejoice is for the defender of religion to declare that these [demonstrable facts] are contrary to the faith. Thus, the atheist's path for refuting the religion becomes easy if accepting such views is required."
>
> Abū Ḥāmid al-Ghazālī
>
> *The Incoherence of the Philosophers*

Introduction

The 8th/14th century Muslim intellectual of the Levant Ibn Taymiyya (d. 728/1328) challenged the prevailing dichotomy of reason versus revelation in scholastic discourse, deeming it both unwarranted and reductive. He argued for reframing the debate—not as a conflict between the sources themselves, but as one concerning the epistemic weight of specific evidence derived from each source. For Ibn Taymiyya, a genuine clash between sound reason and authentically transmitted revelation was inconceivable, as both ultimately stem from the same divine origin.[1] A similar reframing, *mutatis mutandis*, can benefit contemporary debates surrounding the perceived conflict between science and scripture. Such discussions often lack nuance and fail to distinguish between science as a method of neutral inquiry and scientism, an ideological stance that elevates science to the status of an all-encompassing worldview, treating it as the sole arbiter of reality. This distinction allows us to move pass simplistic binaries and acknowledge the epistemic contributions of both divine revelation and empirical inquiry.

The modern conflict between scripture and science is a common concern for people of faith, and Muslims are no exception. The challenge of reconciling certain Islamic teachings with contemporary scientific paradigms has led some to question their beliefs.[2] This tension, however, is neither unprecedented nor insurmountable. The same hadiths that provoke skepticism today often underwent rigorous scrutiny by premodern Muslim scholars. Far from being dismissive of empirical realities or logical reasoning, these scholars were well-versed in the intellectual and scientific discourses of their time, because for them, "science was conceived as a culturally neutral or universal activity."[3] They

1. See, for instance, Ibn Taymiyya, *Darʾ taʿāruḍ al-ʿaql wa-l-naql* (Riyadh: Jāmiʿat al-Imām, 1991), 1:86–87; Carl Sharif El-Tobgui, *Ibn Taymiyya on Reason and Revelation: A Study of Darʾ taʿāruḍ al-ʿaql wa-l-naql* (Leiden: Brill, 2020), pp. 156–163.

2. Youssef Chouhoud, "Modern Pathways to Doubt in Islam," https://yaqeeninstitute.org/read/paper/modern-pathways-to-doubt-in-islam (last accessed Mar 17, 2025).

3. Ahmad Dallal, *Islam, Science, and the Challenge of History* (Yale: Yale

approached scripture with a comprehensive epistemology that integrated revelation and reason, unlike the empiricist tendencies of their modern critics, who frequently marginalize scripture's role as a source of knowledge.[4]

A hallmark of the premodern scholarly tradition was its appreciation for the varying strength of evidence within Islamic texts. A hadith with contested transmission routes or with uncertain indication, for instance, was not equated with the authority of an unequivocal Qurʾānic verse. This nuanced framework enabled scholars to address apparent conflicts between hadith and empirical or rational truths with remarkable sophistication, pace examining apparent conflicts between science and the Qurʾān, which does not allow a reexamination of its historical accuracy. Accordingly, while some studies have explored the relationship between science and the Qurʾān,[5] there remains a need for a more nuanced understanding of science's epistemic role in Islam by examining its second most important scriptural source, the hadith—which yields more variant epistemic gradations compared to the Qurʾān. By revisiting traditional methodologies and applying them to contemporary debates, we can discover valuable insights and develop a universal framework for addressing apparent scientific conflicts with hadith in a manner that honors both faith and science.

A Case Study

In its simplest form, a hadith is a report detailing the words and actions of the Prophet Muḥammad.[6] These reports were initially conveyed orally by his companions—and occasionally written down in ad hoc fashion—then passed down through generations, often via multiple routes of transmission and variations in wording, before being formally compiled in various written

University Press, 2010), p. 147.

4. For a brief comparison of the foundational approaches to hadith engagement between traditional hadith scholars and their modern critics, see, for instance, Shaykh ʿAbd Allāh al-Muṭawwiʿ, "Munṭalaqāt al-ḥadāthiyyīn fī al-taʿāmul maʿa al-sunna al-nabawiyya," *Majallat al-Sharīʿa wa-l-Dirāsāt al-Islāmiyya* 114 (2018): 274–278.

5. Nidhal Guessoum, *Islam and Science: Past, Present, and Future Debates* (Cambridge: Cambridge University Press, 2023); Daneshgar, (2023) "The Qurʾān and Science, Part I: The Premodern Era." *Zygon* 58 (4): 952–969; idem, "The Qurʾān and Science, Part II: Scientific Interpretations from North Africa to China, Bengal, and the Malay-Indonesian World," *Zygon* 58: pp. 970–1004.

6. Ibn al-Ṣalāḥ, *Maʿrifat anwāʾ ʿilm al-ḥadīth* (Beirut: Dār al-Fikr, 1986), p. 45.

collections in the beginning of the second Islamic century.[7] Scholars divide hadith reports based on the number of their chains into *mutawātir* (mass-transmitted) and *khabar wāḥid* (unitary report). The former yields epistemologically certain knowledge (*qaṭʿī*), while the latter yields probable knowledge (*ẓannī*); each of these two types of hadith has a role in establishing matters of law and theology. This binary division of reports is attributed to Muslim legal theorists and theologians and was later adopted by hadith scholars.[8]

Whereas legal theorists were concerned with the epistemic authority of hadiths based on their preponderance, hadith scholars instituted a system of analyzing the chains of reports that focused on the reliability of their transmitters on a spectrum from sound (*ṣaḥīḥ*) to weak (*ḍaʿīf*). Hadith scholars were nonetheless acquainted with the conversations surrounding the epistemic scale of reports, and they occasionally utilized a similar vocabulary as the legal theorists. For hadith scholars, the terms "probabilistic" and "certain" were understood in a historical or functional sense, rather than the conventional sense of probability (i.e., doubtful) or the philosophical notion of certainty (a priori truth). Hadith scholars approached "probabilistic hadith" with a default assumption of historical truth, though this assumption was subject to gradations based on the reliability of each hadith.[9]

Our case study involves reports on the height of Prophet Ādam and a subsequent reduction in human stature over generations. Specifically, it focuses on how premodern and modern scholars have grappled with the apparent conflict between these reports and contemporary scientific and archaeological findings. Central to this inquiry is a hadith recorded by the two most authoritative hadith compilers, Abū ʿAbd Allāh Muḥammad b. Ismāʿīl al-Bukhārī (d. 256/870) and Abū-l-Ḥusayn Muslim b. al-Ḥajjāj al-Qushayrī (d. 261/875), which describes Ādam as sixty cubits tall—approximately twenty-eight meters or ninety feet—and states that human height has progressively decreased since his time. Among its various transmission routes, one version reported by the Companion Abū Hurayra from the Prophet states:

> Allah created Ādam with a height of sixty cubits. He said, "Go and greet that group of angels and listen to how they reply

7. Ibn al-Madīnī, *al-ʿIlal* (Beirut: al-Maktab al-Islāmī, 1400 AH), 36–40; Jonathan A.C. Brown, *Hadith: Muhammad's Legacy in the Medieval and Modern World* (Oxford: Oneworld Publications, 2009), p. 18ff.

8. Suheil Laher, *Tawātur in Islamic Thought* (Edinburgh: Edinburgh University Press, 2025), p. 52ff.

9. Jonathan A.C. Brown, "Did the Prophet Say It or Not? The Literal, Historical and Effective Truth of Ḥadīths." *Journal of the American Oriental Society* 129, no. 2 (2009): pp. 259–285.

> to you; that will be the method of greeting for you and your descendants." [Ādam] said, "Peace be upon you," and they replied, "Peace be upon you and Allah's mercy." Thus, they added "and Allah's mercy." Everyone who enters Paradise will be in Ādam's image. And people have been decreasing until this day.[10]

This narration offers a compelling case study for addressing critical themes in modern hadith studies: the interplay of science and scripture, archaeology, epistemology, evolving methodologies of hadith critique, the transmission practices of the Prophet's companions, and the role of the *isrāʾīliyyāt* (i.e., pre-Islamic scriptural narratives—Biblical, Talmudic, or otherwise).

Modern skepticism toward this hadith arises from two primary concerns. First, given our current understanding of physics and biology, it seems implausible for humans to have reached a height of ninety feet while maintaining functional physiology and anatomy. A ninety-foot-tall human would need such radical physiological alterations that they would no longer resemble a human in function or form.[11] Second, the collective fossil records broadly demonstrate that over thousands of years in different times and places, there was a relatively customary body size with an average close to six feet,[12] which thus far precludes the notion that our distant ancestors were giants. Beyond skeletal remains, a study of prehistoric artifacts and dwellings suggests a similar conclusion.[13] The significance of empirical data is a central assumption of this analysis. As will be evident throughout the essay, the Islamic tradition, as evidenced by numerous verses and hadith, posits a universe governed by consistent laws and demonstrates a clear engagement with observable phenomena. Needless to say, not all scientific propositions are equal in their evidentiary strength, and

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10. *Ṣaḥīḥ al-Bukhārī* (Jeddah: Dār Ṭawq al-Najāh, 2001), no. 3326; *Ṣaḥīḥ Muslim* (Jeddah: Dār Ṭawq al-Najāh, 2013), no. 2841; *Jāmiʿ Maʿmar b. Rāshid*, in *Muṣannaf ʿAbd al-Razzāq* (Beirut: al-Majlis al-ʿIlmī, 1982), no. 19435.

11. Florence Moog, "Gulliver Was a Bad Scientist," *Scientific American* 179, no. 5 (1948): pp. 52–55; John Bonner, *Why Size Matters: From Bacteria to Blue Whales* (Princeton: Princeton University Press, 2006), pp. 16, 31–34.

12. Andrew Gallagher, "Stature, Body Mass, and Brain Size: A Two-Million-Year Odyssey," *Economics and Human Biology* 11 (2013): pp. 551–562; İzzet Duyar and Barış Özener "Evolution of Human Body Height and Its Implications in Ergonomics," *Gaziantep Üniversitesi Sosyal Bilimler Dergisi* 1 (2009): pp. 63–75.

13. John Shea, *Prehistoric Stone Tools of Eastern Africa: A Guide* (New York: Cambridge University Press, 2020), pp. 98–108.

theories that lack sufficient empirical support need not be a source of serious concern. However, that is not the case in the present context. Elsewhere, I offer a detailed discussion of the relevant arguments from physics, biology, and archaeology that support these conclusions, along with a critical appraisal of several counterarguments. For our purposes here, we will assume the robustness of that evidence in order to focus more directly on the conceptual framework for addressing the underlying tension, which remains our primary concern.[14]

Modern and Premodern Views

How did Muslim scholars react to this hadith? For most premodern scholars, the implications of this hadith posed no serious issue. Early scholars like Ibn Shihāb al-Zuhrī (d. 124/742) described the height of Ādam as sixty cubits without any qualifications.[15] The later Damascene scholar al-Nawawī (d. 676/1277) was more explicit: "The intended meaning is that he was created at the beginning of his formation in the same form that he had on earth and in which he passed away—namely, his height was sixty cubits. He did not go through developmental stages like his descendants."[16] The Baghdadi vizier and scholar Ibn Hubayra (d. 560/1104) not only believed that Ādam was sixty cubits tall on earth, but he also explored the possibility that his horse—that is, his means of transport and other effects—were also proportionally sized.[17]

On the other hand, I have come across three instances of premodern scholarly reservations regarding the import of the hadith. First, the Sistani historian al-Muṭahhar b. Ṭāhir al-Maqdisī (d. *ca*. 390/1000) observed that "many Muslims reject the idea that [Ādam's] height was sixty cubits because it goes against the norm." The sixty cubits description, he argues, was possibly a transmitter's explanatory insertion, rather than the Prophet's own words.[18] The Ashʿarī theologian Ibn Fūrak (d. 406/1015) relates the opinion that the

14. Muntasir Zaman, *The Height of Prophet Adam: At the Crossroads of Science and Scripture* (Oldham: Beacon Books, 2022), pp. 19–32.

15. ʿAbd Allāh Ibn al-Mubārak, *Kitāb al-Raqāʾiq* (Bahrain: Wizārat al-ʿAdl wa-l-Shuʾūn al-Islāmiyya, 2014), 2:771, no. 1661; see also al-Baghawī, *Sharḥ al-sunna* (Beirut: al-Maktab al-Islāmī, 1983), 12:255.

16. Yaḥyā b. Sharaf al-Nawawī, *al-Minhāj fī sharḥ Ṣaḥīḥ Muslim b. al-Ḥajjāj* (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1972), 17:178.

17. Ibn Hubayra, *al-Ifṣāḥ ʿan maʿānī al-Ṣiḥāḥ* (Riyadh: Dār al-Waṭan, 1996), 7:215.

18. Muṭahhar b. Ṭāhir al-Maqdisī, *Kitāb al-Badʾ wa-l-tārīkh* (Cairo: Maktabat al-Thaqāfa al-Dīniyya, n.d), 2:99, 3:22.

Prophet's statement "God created Ādam in his form" was in reference to one of his companions present in the gathering, arguing against the notion that Ādam's stature and height differed from what was ordinary for humans. All reports that describe Ādam's stature to the contrary, Ibn Fūrak asserts, come to us from the *isrāʾīliyyāt* and are thus unreliable.[19] The renowned historiographer Ibn Khaldūn (d. 808/1406) minced no words in disapproving the claim that humans in the distant past were extraordinarily larger than average human height, due to the lack of any empirical evidence.[20] The Egyptian historian al-Maqrīzī (d. 845/1442) notably defends the apparent implications of the hadith and the existence of giants; however, his discussion of the topic clearly indicates that there were others who found this idea unsettling, thus prompting his rejoinder.[21] Interestingly, several scholars like the Cairene hadith expert Ibn Ḥajar al-ʿAsqalānī (d. 852/1449) chose not to take sides on the issue and withheld judgment, as we will see later.

While some premodern scholars dissented from accepting the hadith at face value—citing archaeological concerns or potential textual contamination from *isrāʾīliyyāt*—most scholars did not find the hadith problematic. In fact, many went out of their way to defend its import. Before dismissing these classical scholars as "anti-realist" or gullible, it is essential to understand the rationale behind their judgment. The fields of science and archaeology were not as advanced nor as authoritative in their time as they are today, and evidence from these disciplines would not have been considered strong enough to pose a challenge to the apparent meaning of the Prophet's words. These scholars operated within an epistemological framework that did not rely solely on empirical science or reason, and rather privileged divine revelation as a central consideration. Given the highly probabilistic nature of the scientific evidence at their disposal, compared with the authenticity of the prophetic hadith, they saw no need for further scrutiny unless significant and provable scientific concerns arose. That said, the Muslim intellectual tradition includes notable examples of scholars who took empirical concerns seriously enough to offer explanations, prioritize archeological evidence, or, at the very least, withhold judgment on the matter. These instances are rooted in a framework for dealing with tension between scripture and extra-scriptural concerns, to which we now turn.

19. Ibn Fūrak, *Mushkil al-ḥadīth wa-bayānuhu* (Beirut: ʿĀlam al-Kutub, 1985), pp. 54–55.

20. Ibn Khaldūn, *Dīwān al-mubtadaʾ wa-l-khabar* (Beirut: Dār al-Fikr, 1988), 1:222–223.

21. Aḥmad al-Maqrīzī, *al-Mawāʿiẓ wa-l-iʿtibār bi-dhikr al-khiṭaṭ wa-l-āthār* (Beirut: Dār al-Kutub al-ʿIlmiyya, 1997), 1:299.

Proposed Framework

From the formative period of Islamic intellectual history, Muslim scholars have systematically addressed conflicts between hadith and other forms of evidence. Although the nature of these contentions has evolved over time, the framework remains remarkably adaptable. Before attempting to reconcile scriptural and extra-scriptural evidence, it is essential to first assess the epistemic weight of all relevant evidence. Such an evaluation may reveal that no genuine "conflict" exists: the scientific data might lack definitiveness, or the hadith may be weak or otherwise deemed unreliable. Only if both the hadith and the scientific evidence are found to be credible can the process of conflict resolution be meaningfully undertaken. The framework follows a three-tiered approach:[22]

1. Harmonization (*jamʿ*): Reinterpreting the evidence to reconcile both sides through a variety of interpretive methods (*taʾwīl*).

2. Prioritization (*tarjīḥ*): Assigning greater epistemic weight to one side of the conflict based on other hermeneutic considerations.

3. Suspending judgment (*tawaqquf*): Withholding a definitive conclusion in anticipation of further clarity.

Each step in the proposed framework has its limitations and generally follows the sequence outlined above. However, there is some scholarly disagreement regarding the optimal approach and the extent to which one should exhaust a given option before moving to the next, depending on the nature of the conflict. Although abrogation (*naskh*) is sometimes the key to understanding apparent scriptural conflicts, it is not applicable in this case study. Abrogation pertains to the legal relationship between two pieces of scriptural evidence (i.e., one text abrogates the contrary ruling found in the chronologically earlier text), whereas the tension in our case study arises between scripture and empirical data.

1. Harmonization (*Jamʿ*)

When scripture and science appear to conflict, the ideal approach is to respect both sources by seeking ways to reconcile them. This principle is deftly illustrated by the preeminent theologian Abū Ḥāmid al-Ghazālī (d. 505/1111), who addressed a scientifically problematic hadith by stating, "Even if [the hadith] were sound, it would be easier to interpret it metaphorically than

22. For a study on the development of this framework and the various opinions regarding its function and appropriate sequence, see Usāma Khayyāṭ, *Mukhtalif al-ḥadīth bayna al-muḥaddithīn wa-l-uṣūliyyīn wa-l-fuqahāʾ* (Riyadh: Dār al-Faḍīla, 2001).

to reject matters [of astronomy] that are conclusively true."[23] Harmonizing scripture through interpretation (*taʾwīl*) is typically defined as redirecting a text from its apparent meaning to a less obvious but contextually appropriate one. However, given the potential for *taʾwīl* to be misused—resulting in far-fetched or unwarranted interpretations—there are recognized limits for its application. Thus, Bakhīt al-Muṭīʿī (d. 1935) emphasized the necessity of reinterpreting scripture in cases of definitive conflict with established scientific or astronomical truths, but cautioned that such reinterpretation must be conducted reasonably and in a manner consistent with the linguistic and contextual integrity of scripture.[24]

In our case study, we will explore three approaches by modern scholars who have proposed several interpretations of the hadith that align with the scientific data, starting with the most widely accepted and progressing to the more obscure.

1. The Indian Anwar Shāh al-Kashmīrī (d. 1933) and the Yemenī ʿAbd al-Raḥmān al-Muʿallimī (d. 1966) argue that the hadith refers to Ādam's height in Paradise before he came to earth. Ādam then arrived on earth with a reduced height appropriate for his earthly existence but still taller than the current average human height; generations of humans thereafter gradually decreased in height.[25]

2. Muḥammad Abū Shahba (d. 1982) who posits that the word "sixty" in this hadith conveys hyperbole (*mubālagha*), i.e., Ādam was exceptionally tall but not specifically sixty cubits tall.[26]

3. ʿUbayd Allāh Sindī (d. 1944) went as far as interpreting the hadith as a reference to Ādam's height in the Sufi-cum-philosophical realm of similitude (*ʿālam al-mithāl*)—an intermediary nexus between the realms

23. Abū Ḥāmid al-Ghazālī, *The Incoherence of the Philosophers: A Parallel English-Arabic Text*, translated by Micheal E. Marmura (Provo, UT: Brigham Young University Press, 2000), p. 7.

24. Muḥammad Bakhīt al-Muṭīʿī, *Tawfīq al-Raḥmān li-l-tawfīq bayna mā qālahu ʿulamāʾ al-hayʾa wa-bayna mā jāʾa fī al-aḥādīth al-ṣaḥīḥa wa-āyāt al-Qurʾān* (Beirut: Dār al-Minhāj, 2016), p. 73.

25. Anwar Shāh al-Kashmīrī, *Fayḍ al-Bārī* (Beirut: Dār al-Kutub al-ʿIlmiyya, 2005), 4:342–343; ʿAbd al-Raḥmān al-Muʿallimī, *al-Anwār al-kāshifav* (Jeddah: Majmaʿ al-Fiqh al-Islāmī, 2012), p. 259.

26. Abū Shahba, *Difāʿ ʿan al-sunna wa-radd shubah al-mustashriqīn wa-l-kuttāb al-muʿāṣirīn* (Cairo: Maktabat al-Sunna, 1989), p. 131.

of the manifest and unperceptible—not in the physical world.[27]

These interpretations demonstrate the potential scope for *taʾwīl* and the willingness of Muslim scholars to give their scripture a second glance in the face of mounting scientific concerns—even if these interpretations were not free from criticism. For instance, al-Kashmīrī's explanation that the hadith pertains to Ādam's height in Paradise does not satisfactorily address the contentious part of the hadith that states that humans have since been decreasing in height. This prompted others, such as the Muftī and hadith commentator from Pakistan, Muḥammad Taqī ʿUthmānī, to refine this explanation into a more fitting and holistic answer that involves a rereading of the phrase "gradually decreased" (*lam yazal yanquṣ*).[28] A cursory review of how the hadith commentary tradition dealt with other problematic hadiths discloses a common tendency among scholars to strive to accommodate the prophetic hadith to a great extent, while remaining mindful of rational and empirical considerations.[29]

2. Prioritization

In the absence of a satisfactory interpretation of the hadith which accords with established empirical evidence, the conflict between the two often demands that scholars prioritize one over the other. Hadiths are complex narratives, often relayed through multiple lines of transmission over several generations, and sometimes resulting in divergent wording between the different routes of a single report. As such, a detailed analysis of each route of a hadith's transmission is required to identify its ur-text (*aṣl*) and unearth potential transmission errors—a process that the early Basran hadith scholar Ibn al-Madīnī (d. 234/849) emphasized to determine hidden defects in a narration.[30] As Ibn al-Qayyim (d. 751/1350) underscores, forcibly reconciling conflicting iterations of a hadith by amalgamating them—rather than prioritizing one iteration and attributing a mistake to one of the transmitters—is the approach of "the deficient literalists from the lay transmitters" (*wa-hādhihi ṭarīqat ḍuʿafāʾ al-ẓāhiriyya min arbāb al-naql*).[31]

27. ʿAbd al-Razzāq Ḥamza, "Addendum," in *al-Qāʾid ilā taṣḥīḥ al-ʿaqāʾid* (Beirut: al-Maktab al-Islāmī, 1984), p. 255.

28. Muḥammad Taqī ʿUthmānī, *Takmilat Fatḥ al-Mulhim* (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 2006), 6:158.

29. Jonathan A.C Brown, "The Rules of Matn Criticism: There Are No Rules," *Islamic Law and Society* 19 (2012): pp. 380–381.

30. al-Khaṭīb al-Baghdādī, *al-Jāmiʿ li-akhlāq al-rāwī wa-ādāb al-sāmiʿ* (Riyadh: Maktabat al-Maʿārif, 1983), 2:212.

31. Ibn al-Qayyim, *Zād al-maʿād fī hady khayr al-ʿibād* (Beirut: Muʾassasat

The description of Ādam's height as sixty cubits features in all major hadith collections in a longer hadith narrated by Abū Hurayra and other Companions. In fact, there are several hadiths on the subject, each transmitted through varying routes of transmission. Within the framework of conflict resolution, prioritization (*tarjīḥ*) is the process of preferring the epistemically weightier of the two conflicting sides. One way to apply this strategy in our case study is to carefully examine the various routes of transmission of the hadith. This involves assessing whether there are any errors, weaknesses, or inconsistencies in the chains of transmission and determining how the epistemic strength of the contentious clauses in the hadith fairs in comparison to the weight of the empirical concerns. If the veracity of the hadith does not meet the standard required to counterbalance the empirical evidence, the latter will be preferred and the hadith will be dismissed as unreliable.

For the sake of simplicity,[32] we can distill the various versions that reference the height of Ādam as sixty cubits into four main hadiths, only one of which includes the mention of the progressively reducing height of humankind:

1. "The first batch will enter Paradise in the image of the full moon. . . in the image of one man, the form of their father Ādam, sixty cubits in the sky."[33]

2. "Allah created Ādam with a height of sixty cubits. He said, 'Go and greet that group of angels and hear how they return your greeting; that is the greeting for you and your progeny.' [Ādam] said, 'Peace be upon you,' and they replied, 'Peace be upon you and Allah's mercy.' Thus, they added, 'and Allah's mercy.' Everyone who enters Paradise will be in Ādam's image. *And people have been decreasing* [*in height*] *until this day*."[34]

3. "Those destined for Paradise will enter Paradise without body hair or beards, bright, with wavy hair and eyes anointed with kohl, thirty-three years of age, in the image of Ādam, sixty cubits [in height] and seven cubits in width."[35]

4. "Ādam was a tall man like an enormous date palm, sixty cubits, with full hair."[36]

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al-Risāla, 1994), 3:38.

32. For a study of nearly seventy routes of transmission for this hadith, see Zaman, *the Height of Prophet Adam*, pp. 58–79.

33. *Ṣaḥīḥ al-Bukhārī*, no. 3327.

34. *Ṣaḥīḥ al-Bukhārī*, no. 3326.

35. *Musnad Aḥmad*, no. 7933.

36. Ibn Jarīr al-Ṭabarī, *Tārīkh al-rusul wa-l-mulūk* (Beirut: Dār al-Turāth,

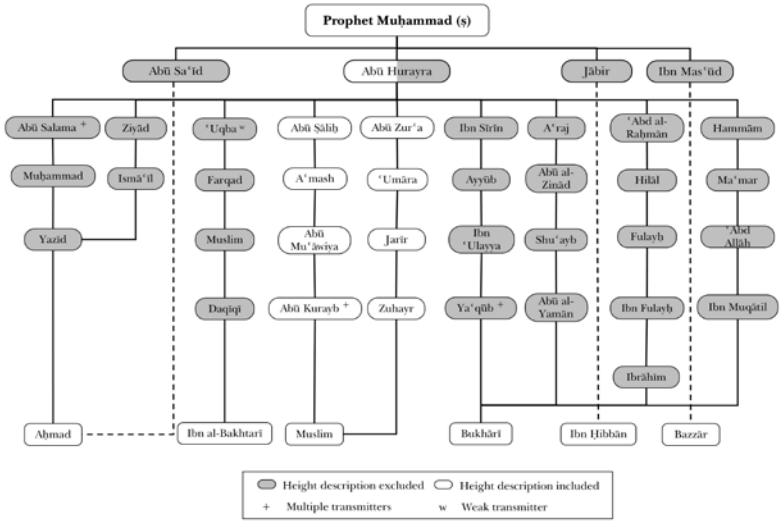
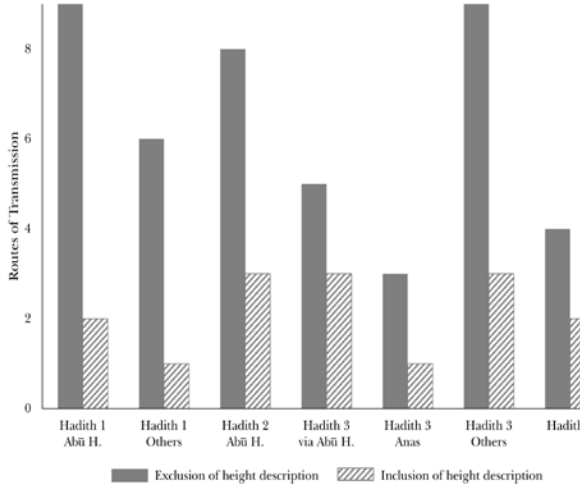


Figure 1: Transmission routes of hadith no. 1 on the height of Ādam. Details provided in the appendix.



1967), 1:160.

Figure 2: Quantitative comparison of inclusion and exclusion of the contentious clauses across narrations.

The analysis summarized in Appendix I on the varied transmission routes of these four hadiths reveals that the last two are unreliable and inadmissible as evidence, and in the first two hadiths, most of the narrators relate versions of the hadith that do not include the contentious clauses. For example, the Companion Muʿādh b. Jabal narrated the third hadith as "Those destined for Paradise will enter Paradise without body hair or beards, bright, with wavy hair and eyes anointed with kohl, thirty-three years of age," without any mention of the height clause. Figure 1 illustrates the variations within the first hadith.

Once we repeat this process for all the routes of transmission, we conclude that the epistemic status of the contentious clauses decreases significantly, even though individually some of the chains are formally sound (*ṣaḥīḥ*) per the conditions of the hadith scholars. Figure 2 compares the number of narrators who include or exclude the contentious clauses in each of the relevant hadiths.

With this information in mind, let us examine the point of conflict. On the one hand, there are formally authentic, unitary hadiths that suggest that (1) Ādam was sixty cubits tall, and that (2) humankind gradually decreased in height. On the other hand, there are substantive scientific concerns with accepting these two clauses at face value. Based on a thorough analysis of the transmission of the relevant hadiths, we learn that most transmitters narrate the relevant hadiths without the contentious passages regarding height. The dominant position among legal theorists is that it is valid to prioritize one of two conflicting sets of reliable reports based on the preponderance of its narrators.[37]

To be sure, this analysis is not based on sheer numbers. Many of the routes that exclude the height description are transmitted through seminal students of the common source (e.g., al-Aʿraj → Abū Hurayra). Hence, the routes are also being "weighed" by taking the status of the narrators into consideration. Taking a bird's eye view of prophetic hadith on the subject, it is clear that a preponderance of narrators, among whom many are "weighty" sources, do not transmit either of the contentious clauses. This preponderance is true for the generation of the Companions (the height clause is arguably transmitted via Abū Hurayra alone) and it is predominantly the case for the second generation of transmission, including Abū Hurayra's students. This fact decreases the epistemic value of the contentious words, thus making them far more probabilistic (*ẓannī*) in their transmission. It should be emphasized that

37. Ghāzī al-ʿUtaybī, "al-Tarjīḥ bi-kathrat al-ruwāh: dirāsa uṣūliyya taṭbīqiyya," *Majallat Jāmiʿat Umm al-Qurā li-ʿUlūm al-Sharīʿa wa-l-Dirāsāt al-Islāmiyya* 44 (2008): pp. 311–322.

the preponderance argument alone is not sufficient to deem the contentious words unreliable. Rather, the epistemic value of the contentious words decreases substantially because of the preponderance argument, which then impacts how they will fair when weighed against the epistemically stronger empirical objections.

The Jordanian researcher Jamīl Farīd opined that the conflict between the archeological data and the hadith has thus far reached an impasse: both sides are equally probabilistic, and therefore, no judgment can be made until further evidence tips the scale in favor of one side.[38] His argument, however, is based on the fact that the lack of fossil records to support a literal reading of the hadith constitutes "an absence of evidence" (i.e., negative evidence), rather than evidence to disprove the hadith. He completely overlooks the positive evidence from physics and biology that suggests that humans could not have been ninety feet tall. By augmenting the archeological evidence with more data, a case can be made based on the methodology of hadith prioritization to accept both the empirical evidence and versions of the hadith that do not contain the two contentious clauses regarding Ādam's height as sixty cubits and the gradual decrease of human height, while dismissing versions that do include them.

Although the nature and form of the argument here is more developed, the proposal to prioritize empirical evidence over the hadith has precedence in premodern scholarship. Recall that al-Maqdisī regarded the words "sixty cubits" as explanatory comments added by a transmitter, rather than part of the hadith itself, because many people considered such a height too extraordinary to accept; Ibn Fūrak dismissed any hadith describing Ādam as taller than an ordinary human as a product of *isrāʾīliyyāt*; and Ibn Khaldūn rejected the notion of human giants based on archaeological evidence. Furthermore, the late Indian hadith scholar Yūnus Jawnpūrī (d. 2017) proposed that the second clause, which mentions the reduction in human height, was an insertion by a narrator influenced by *isrāʾīliyyāt* traditions.[39] Although the reasoning behind their judgment varied, these scholars gave credence to the empirical data by revisiting the reliability of the hadith, albeit with different degrees of skepticism.

Although our transmission analysis reveals a reduction in the epistemic strength of the hadith, one might ask: Is the concept of giants corroborated by other scriptural evidence, thereby enhancing its epistemic weight? Certain

38. Abū Sāra Jamīl Farīd, *Athar al-ʿilm al-tajrībī fī kashf naqd al-ḥadīth al-nabawī* (Beirut: Markaz Namāʾ, 2016), p. 116.

39. Akram Nadwī, annotation on *al-Farāʾid fī ʿawālī al-asānīd wa-ghawālī al-fawāʾid* (Beirut: Dār al-Bashāʾir al-Islāmiyya, 2015), p. 80.

Qurʾānic verses suggest that individuals and civilizations throughout history were relatively larger in stature, such as the "domineering people" (*jabbarīn*) of the Amalekites (Q. 5:22). However, exegetical remarks on such verses often include exaggerated descriptions not grounded in authentic textual evidence.[40] Many early statements from Muslims espousing belief in giants are transmitted through unreliable routes; as the historian Abū al-Ḥasan al-Madāʾinī (d. 225/839) observes, this notion largely originates from the *isrāʾīliyyāt* and Near Eastern lore, which are not epistemically significant due to their dubious origins.[41]

Ibn Kathīr (774/1373) explains that Qurʾānic verses on the large stature of certain nations (e.g., "and increased you amply in statutre" [Q. 7:69]) simply mean that they were the largest relative to the people of their era.[42] Similarly, the Qurʾānic analogy comparing certain destroyed nations to date palms does not refer to their physical size but to their remnants—likened to the trunks of date palms scattered on the ground.[43] Furthermore, the Qurʾān's descriptions of peoples such as ʿĀd and Thamūd being larger in stature seem to emphasize their uniqueness among humans, as opposed to the hadith under discussion, which appears to describe a phenomenon across humankind.[44]

If the claim is that the Prophet Muḥammad, upon him blessings and peace, did not say that Ādam was sixty cubits tall or that humans have been shrinking since, then a question arises: where did these notions originate and how did they come to be attributed to him? As noted above, some scholars suggest that the notion of human giants may have derived from *isrāʾīliyyāt*, the lore of the People of the Book (*ahl al-kitāb*), particularly regarding Ādam's massive size,[45] and that it was mistakenly incorporated into the hadith. Some

40. Rashīd Riḍā, *Tafsīr al-manār* (Cairo: Dār al-Manār, 1948), 6:331.

41. Ibn al-Jawzī, *al-Muntaẓam fī tārīkh al-mulūk wa-l-umam* (Beirut: Dār al-Kutub al-ʿIlmiyya, 1992), 1:202; Ṭāriq ʿIwaḍ Allāh, *Jāmiʿ al-masāʾil al-ḥadīthiyya* (Cairo: Dār Ibn ʿAffān, 2006), 5:143–145.

42. Ibn Kathīr, *Tafsīr al-Qurʾān al-ʿAẓīm* (Riyadh: Dār Ṭayba, 1999), 1:666, 3:434.

43. Ibn ʿĀshūr, *Tafsīr al-taḥrīr wa-l-tanwīr* (Tunis: al-Dār al-Tūnisiyya, 1984), 29:118.

44. Muḥammad Taqī ʿUthmānī, *Takmilat Fatḥ al-Mulhim* (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 2006), 6:158.

45. See, for instance, Psalms 139:5. James Kugel traces the origins of this motif in the Bible and highlights the problems with using Psalms 139:5 for that purpose. See Kugel, *Traditions on the Bible A Guide to the Bible as It Was at the Start of the Common Era* (Cambridge, MA: Harvard University Press, 1998), pp. 82–84. Another Talmudic

of the transmitters of the relevant hadith interacted with Kaʿb al-Aḥbār (d. 32/652), a former Jewish rabbi and convert to Islam, who espoused the idea that Ādam was sixty cubits and that everything was originally larger and gradually shrunk.[46] There are other documented cases of hadith transmitters unintentionally incorporating Kaʿb al-Aḥbār's words into Prophetic sayings.[47]

The argument for prioritization raises other important questions for Muslims: how does one reconcile the rejection of certain hadith found in the sound collections of al-Bukhārī and Muslim, which are universally recognized as the most reliable and meticulously vetted sources of hadith? Would such rejection not cast doubt on the entire hadith tradition, which prides itself on its rigorous preservation and authenticity? If even these two collections are subject to critique, does it not follow that all other hadith collections are even more vulnerable to scrutiny?

While the hadith in question may indeed appear in the works of al-Bukhārī and Muslim, two key points must be considered. First, in our case study, the process of prioritization does not entail rejecting an entire hadith, but rather choosing to accept certain versions of the hadith over others. This means dismissing routes that contain the contentious clauses while accepting other versions of the same hadith that exclude those clauses—versions that are also recorded in the collections of al-Bukhārī and Muslim. Second, some of the very scholars who upheld the authenticity of "the two *Ṣaḥīḥ*s," such as al-Nawawī, Ibn Taymiyya, and Ibn Ḥajar, also subjected certain narrations within these works to critical scrutiny.[48] Al-Bukhārī and Muslim themselves engaged in this process by including narrations in their respective collections

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reference on the height of Prophet Ādam reads, "Rabbi Meir says: In the future, the Jewish people will have the stature of two hundred cubits, equivalent to two times the height [*komot*] of Adam the first man, whose height was one hundred cubits." See *Bava Batra*, 75a. It should be noted that the Hebrew cubit was roughly 17.5 inches, which is slightly shorter than the conventional cubit. See Robert Scott, "The Hebrew Cubit," *Journal of Biblical Literature* 77, no. 3 (1958): p. 215.

46. Ibn al-Ḍiyāʾ, *Tārīkh Makka al-musharrafa* (Beirut: Dār al-Kutub al-ʿIlmiyya, 2004), p. 45; al-Ḍiyāʾ al-Maqdisī, *al-Muntaqā min masmūʿāt Marw* (Damascus: al-Assad National Library, manuscript no. 344), fol. 64r.

47. Muslim b. al-Ḥajjāj, *Kitāb al-Tamyīz* (Riyadh: Sharikat al-Ṭibāʿa al-ʿArabiyya, 1982), p. 175.

48. Muḥyī al-Dīn al-Samarqandī, *Naqd matn al-ḥadīth fī ḍawʾ natāʾij al-ʿulūm al-tajrībiyya* (Beirut: Dār al-Kutub al-ʿIlmiyya, 2008), p. 345.

to highlight defects or transmission errors therein.[49] Ultimately, the prioritization of empirical data and the critique of specific hadiths within the two *Ṣaḥīḥ*s is not a wholesale rejection of their reliability, but rather a nuanced engagement with their contents, guided by the methodologies established by the very scholars who upheld their preeminence.

As noted above, hadith scholars approached "probabilistic hadith" with a default assumption of historical truth, though this assumption was subject to gradations based on the reliability of each hadith. This is demonstrated in how hadiths which are all categorized as *ṣaḥīḥ* but whose degree of proliferation varies are all accepted, but cannot necessarily serve the same functions: only hadiths of the highest degree of proliferation can be used to establish necessary theological beliefs, whereas less widely narrated hadiths can still be used to establish laws related to ritual practice. Hadiths that narrate historical events, without unique theological or legal implications, have an even lower threshold to be considered acceptable to disseminate as truth.

It is worth adding that the prioritization strategy assumes the reader has a devotional conviction that the Prophet could not have said something untrue, and thus the hadith requires revisiting (rather than asserting that the hadith is formally sound and therefore the Prophet made a scientifically inaccurate statement). However, our analysis has shown that, even if we set the empirical concerns aside, there are still questions that undermine the probability of the contentious clauses in the hadith. Given the exceptionally probabilistic nature of these clauses, the empirical concerns bring to light transmission problems that might otherwise have remained unnoticed. That is why a scholar like Ibn Fūrak did not even cite empirical concerns as his reason for rejecting such hadith. That said, this strategy (i.e. prioritization) is particularly useful in cases where doubt arises in the mind of a Muslim who is convinced that the Prophet could not have uttered an empirically untrue statement and is seeking to resolve the conflict.

3. Withholding Judgment

After exhausting the hermeneutic techniques in their toolbox, scholars would withhold judgment in the face of uncertainty or conflicting evidence. Scholars have taken noncommittal stances in nearly every Islamic discipline, and hadith is no different. When asked about a hadith on washing a utensil that was licked by a dog, Mālik b. Anas (d. 179/795) said, "This hadith has come [to us], but I

49. See, for instance, Saʿīd Bāshanfar, *Manhaj al-Imām al-Bukhārī fī ʿarḍ al-ḥadīth al-maʿlūl fī al-Jāmiʿ al-ṣaḥīḥ* (Beirut: Dār Ibn Ḥazm, 2016); Ḥamza al-Malībārī, *ʿAbqariyyat al-Imām Muslim fī tartīb aḥādīth Musnadihi al-ṣaḥīḥ* (Beirut: Dār Ibn Ḥazm, 1997).

do not know what the reality of it is."[50] Regarding our case study, Ibn Ḥajar al-ʿAsqalānī took a noncommittal stance on the clause of humankind's gradually decreasing size. He comments on the words "humankind has since been decreasing," saying:

> This is problematized by the remnants of previous civilizations, like the cities of Thamūd. Their homes indicate that their stature was not excessively tall as would be demanded by the succession [mentioned in the second clause]. They were undoubtedly a nation of old, and the timespan between them and Ādam is less than that between them and the first of this nation. I have yet to come upon a solution to this problem.[51]

Interestingly, the contention that led Ibn Ḥajar to withhold judgment regarding the hadith was clearly not definitive; it was based on a limited archaeological observation. Yet, it was a strong enough reason for him to not dismiss the validity of the contention. This suggests the seriousness with which scholars regarded certain empirical propositions even if they did not yield absolute certainty. While Ibn Ḥajar only suspended judgment on the last part of the hadith, one can extend this approach and suspend judgment on the first part as well (i.e., the height of Ādam being sixty cubits) given the concerns posed by a literal reading of it.

Nearly every theory, no matter how holistic, will struggle to account for certain factors. This is not necessarily a flaw in the theory but may instead reflect our epistemic limitations. A theory should be judged not merely for encountering unresolved issues but by whether its overall explanatory strengths outweigh its shortcomings. Although one might remain uncertain about how to resolve the specific problem of Ādam's height, the uncertainty is vastly outweighed by the strong reasons to believe in Islamic scripture, making it insufficient to undermine one's overall epistemic commitment to Islam. In such cases, suspending judgment on this particular issue is reasonable, and supported by broader considerations about the faith as a whole. For example, al-Ḥasan al-Baṣrī (d. 110/728) said regarding the hadith in question, "God knows best which cubit [is intended]."[52] Framed in this way, withholding judgment may not immediately solve the problem, but it becomes an important part of

50. Saḥnūn, *al-Mudawwana al-kubra* (Beirut: Dār al-Kutub al-'Ilmiyya, 1994), 1:115.

51. Ibn Ḥajar, *Fatḥ al-Bārī sharḥ Ṣaḥīḥ al-Bukhārī* (Beirut: Dār al-Kutub al-lmiyya, 1997), 6:366–367.

52. Yaḥyā Ibn Sallām, *Tafsīr Yaḥyā b. Sallām* (Beirut: Dār al-Kutub al-ʿIlmiyya, 2004), 2:815.

the broader effort to mitigate religious doubt.[53]

Miracles and Science

Beyond this case study, there are many hadith that challenge modern scientific theories, such as reports of Prophetic miracles, yet these are often accepted literally without appealing to a figurative interpretation. Why then, one may ask, should this hadith be treated any differently? Could Ādam's height and the diminishing height of humankind not have been the result of divine intervention and therefore obviate the need for any scientific explanation? This assertion is problematic for several reasons. For one, according to the theologian exegete Fakhr al-Dīn al-Rāzī (d. 606/1210), to establish that something or someone broke away from the habitual course of nature (*kharq al-ʿāda*) requires epistemically satisfactory evidence,[54] which is absent in our case study. The question here is not whether God is able to allow for such a miraculous occurrence—to which a Muslim would respond in the affirmative—but whether there are other epistemological considerations that outweigh the possibility of a miracle.

There is no credible archeological evidence to prove that humans were once giants gradually decreasing in height, and our current knowledge of physics and biology strongly asserts that humans could not have been ninety feet tall while maintaining their current physiological and anatomical properties. To establish anything that goes against these premises—which themselves are based on the physical laws that God created for the functioning of the world—would require evidence that is epistemically acceptable in its transmission and unambiguous in its meaning. As noted, the contentious clause on the gradual decrease of human height is probabilistic (*ẓannī*) in both its transmission and semantic import (*dalāla*)—its semantic flexibility is what allowed scholars to offer multiple reinterpretations. Accordingly, resolving the inherent tension via the three-tiered framework is more hermeneutically appropriate and epistemically sound than accepting the hadith at face value as a divine miracle.

Additionally, attempts to resolve the problems with the hadith by explaining it as a prophetic miracle (*muʿjiza*) fail to consider the broader implications of the hadith and overlook the function of prophetic miracles (i.e. to establish the truth of a prophet's claim to prophethood). The hadith

53. Zaid Abu Huraira, "Towards a universal framework for resolving conflicts between science and scripture," (Unpublished manuscript, 2024: www.academia.edu/83313028).

54. Fakhr al-Dīn al-Razī, *Mafātīḥ al-ghayb* (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1999), 26:291.

also states that subsequent generations after Ādam were of a similar albeit gradually decreasing height, at which point the issue ceases to be one of prophetic miracles because the argument would then be that the miracle of defying the known laws of physics also applied to generations of non-prophets. Furthermore, Ibn Hubayra had anticipated another major implication when he raised the question about Ādam's horse: if people were that large, everything else, such as their food, shelter, and personal effects would have been proportionally sized. One would, therefore, have to accept that for a very long time the entire world was drastically different, a bold claim that lacks the requisite evidence. Interestingly, Tāj al-Dīn al-Subkī (d. 771/1370) mentions that the experts opine that saintly wonders (*karāmāt*) and even prophetic miracles cannot occur so regularly that they are confused for the habitual course of nature.[55]

Paradigm Shifts

Theoretically, the fields of archaeology, physics, and anatomy could undergo a "paradigm shift," to borrow Thomas Kuhn's terminology, and allow for a literal reading of the hadith. However, the mere potential for such a shift does not invalidate the present concerns, which are substantiated enough to merit serious consideration. The Ḥanafī legal theorist Ṣadr al-Sharīʿa al-Maḥbūbī (d. 747/1346) notes that the designation of epistemic certainty also encompasses "tranquil knowledge" (*ʿilm al-ṭumaʾnīna*), which entails knowledge of a given issue with a margin of error.[56] Similarly, al-Ghazālī elaborates on the epistemic value of empirical propositions derived from the observation of recurring events in the world (*tajrībiyyāt*), such as the law of gravity. He explains that these propositions provide a degree of certainty to those who observe them, with the level of certainty varying according to an individual's knowledge and experience.[57] As such, one can operate with well-proven scientific premises as functionally certain, even if they are not irrefutable and do not engender absolute certainty.

It goes without saying that simply because certain hadiths are studied through a scientific lens to better gauge their veracity, it does not follow that scripture in its entirety can be put under an empiricist's microscope. Studying

55. Tāj al-Dīn al-Subkī, *Ṭabaqāt al-Shāfiʿiyya al-kubrā* (Cairo: ʿĪsā al-Bābī al-Ḥalabī, 1964), 2:319.

56. ʿUbayd Allāh al-Maḥbūbī, *al-Tawḍīḥ sharḥ al-Tanqīḥ* (Cairo: Maktabat Ṣabīḥ, n.d), 1:248; Ḥāfiẓ al-Din al-Nasafī, *Kashf al-asrār sharh al-musannif'alā al-Manār* (Beirut: Dar al-Kutub al-Ilmiyya, n.d), 2:6–7.

57. Abū Ḥāmid al-Ghazālī, *al-Mustaṣfā min ʿilm al-uṣūl* (Beirut: Dār al-Kutub al-ʿIlmiyya, 1993), 1:36–37.

every hadith through a strictly naturalistic lens overlooks the fact that providing guidance on scientific matters was not the raison d'être of the Prophet's mission. The Indian reformer Shāh Walī Allāh al-Dihlawī (d. 1176/1763) aptly observes that the prophets did not occupy themselves with matters unrelated to "the refinement of the soul and governing of the community unless it was incidental."[58]

An axiomatic Islamic principle is that the prophets in general and the Prophet Muḥammad in particular were divinely protected from error, a concept known as prophetic infallibility (*ʿiṣmat al-anbiyāʾ*).[59] The extent of the Prophet's infallibility (*ʿiṣma*) has been a topic of significant debate among Muslim scholars, but for our purposes, a crucial question arises: could the Prophet have made statements that are medically or scientifically questionable? Notably, in one hadith, the Prophet himself acknowledged to his Companions that in worldly matters, they might possess greater knowledge than him. This admission followed his agricultural advice about cross-pollination, which did not yield the desired results.[60]

Muslim scholars unanimously agree that the Prophet would not miscommunicate divine revelation. If he issued an incorrect judgment, divine inspiration would guide him to the correct course of action.[61] When it comes to medical and scientific matters, however, scholars like Ibn Khaldūn suggest that the Prophet's advice often reflected the inherited wisdom of his time and region, rather than divinely ordained guidance.[62] That said, in our case study, the discussion transcends the question of the Prophet's scientific knowledge; instead, it is a question of historical fact—was Ādam a giant, and did humanity progressively diminish in stature? Addressing this is more complex than a hadith on scientific matters of negligible import that happen to be empirically implausible but ultimately inconsequential.

It should be clear by now that Muslim scholars have employed diverse empirical methods in analyzing hadiths, but they acknowledged the limits of such analysis. Scriptural matters of the unseen—such as angels and the afterlife—are, by definition, supra-rational and metaphysical, and ipso facto,

58. Shāh Walī Allāh Dihlawī, *Ḥujjat Allāh al-bāligha* (Beirut: Dār al-Jil, 2005), 1:158

59. Aḥmad al-Dardīr, *Sharḥ al-Kharīda al-bahiyya fī ʿilm al-tawḥīd* (Damascus: Dār al-Daqqāq, n.d), p. 111.

60. *Ṣaḥīḥ Muslim*, no. 2361.

61. al-Sharīf Ḥātim al-ʿAwnī, *Iḍāʾāt baḥthiyya fī ʿulūm al-sunna al-nabawiyya* (Riyadh: Dār al-Ṣumayʿī, 2007), pp. 12–13.

62. Ibn Khaldūn, *Dīwān al-mubtadaʾ wa-l-khabar*, 1:651.

they should not and cannot be weighed on the scales of science and human reason, as they occupy different epistemic domains. Ibn Khaldūn analogizes this incommensurability in saying, "One might compare it with a man who sees a scale in which gold is being weighed and wants to weigh mountains in it."[63]

Conclusion

Students of Islamic intellectual history will notice that premodern discussions on reason (*ʿaql*) and revelation (*naql*) revolved around issues that may not immediately resonate with modern concerns, such as the divine attributes of God. Yet, the core challenge remains the same today as it did for over a millennium: reconciling tensions between scripture and extra-scriptural sources. Rather than fixating on the specific issues they addressed, it is more valuable to examine the causes of these tensions and the tools employed to resolve them. The key takeaway lies in understanding the methodology and framework used, which can then be applied beyond their original context. For example, while our case study focuses on Ādam's height, the same approach can be used to reexamine other hadith which have come under scrutiny in our time—such as hadiths on the Prophet's wars and marriages, the fly dipped into water, and the sun setting beneath God's throne.

Classical scholars were not oblivious to the conflicts between scripture and empirical evidence. They engaged in similar debates and developed coherent methodologies that remain relevant for addressing analogues today. This methodology involves a critical appraisal of both sides of scriptural/empirical conflict along a spectrum of epistemic value, followed by an evaluation based on a three-tiered model—harmonization, prioritization, and withholding judgment—to determine the best course of action.

The hadith describing Ādam's height as sixty cubits and humankind's subsequent decrease in height has been placed in the spotlight due to scientific and archeological concerns that a literal reading poses. In this study, we examined how scholars understood this hadith through the three-tiered model of conflict resolution. The aim of this paper is not to advocate for the superiority of one strategy over another, but to propose a diverse framework for addressing scriptural tensions, offering multiple solutions which may be more or less convincing depending on the text in question. Intriguingly, Jawnpūrī's solution demonstrates that multiple strategies within the framework can be applied together; he proposed a reinterpretation of sixty cubits as a heavenly phenomenon but prioritized the decreasing height clause as a narrator's insertion.

63. Ibn Khaldūn. *Dīwān al-mubtadaʾ wa-l-khabar*, 1:582.

Anyone researching this topic will find extensive commentary on the pronoun antecedent in the words "God created Ādam in His/his image" found in some versions of the hadith, with little focus on Ādam's height. A recent scholar dedicated an entire monograph to whether Ādam was created in God's form,[64] and centuries earlier, the Mālikī jurist Aḥmad al-Fayyūmī (d. 1101/1690) wrote a treatise on Ādam's creation, with only a fleeting reference to the archaeological concerns.[65] Today, studies abound on the question of Ādam's height with little new commentary on the pronoun debate, reflecting how evolving paradigms and discoveries shape scholarly discourse. These studies reflect the utility of Ādam's height as a case study of the hermeneutic techniques that both classical and modern scholars applied when they found themselves at the crossroads of science and scripture.

Appendix I

Under the prioritization (*tarjīḥ*) proposal, it was argued that an analysis of the four hadiths and their various transmission routes reveals that most omit the contentious clauses. This reduces these clauses' epistemic weight, creating space to prioritize empirical concerns. There are a number of other secondary hadiths and reports on the topic, but what follows is a summarized analysis of the four key hadiths.

Hadith 1

The first hadith describes the first batch of people to enter Paradise. Abū Hurayra narrates that the Prophet said, "The first batch will enter Paradise in the image of the full moon. . . in the image of one man, the feature of their father Ādam, sixty cubits in the sky." Abū Zurʿa and Abū Ṣāliḥ narrate this from Abū Hurayra with the words "the feature of their father Ādam, sixty cubits in the sky."[66] On the other hand, al-Aʿraj, ʿAbd al-Raḥmān b. Abī ʿAmra, Hammām b. Munabbih, Muḥammad b. Sīrīn, Abū Salama, ʿIyāḍ b. Dīnār, ʿUqba b. Abī al-Ḥasnāʾ, Ziyād al-Makhzūmī, and ʿAṭāʾ b. Yasār narrate a truncated version of the hadith without the relevant words.[67] A similar hadith is transmitted from

64. Ḥamūd al-Tuwayjirī. *ʿAqīdat ahl al-īmān fī khalq Ādam ʿalā ṣūrat al-Raḥmān* (Riyadh: Dār al-Liwāʾ, 1989).

65. Ahmad al-Fayyūmī. *al-Qawl al-tāmm fī bayān aṭwār sayyidinā Ādam ʿalayhi al-ṣalāh wa-afḍal al-salām* (King Abdul Aziz Library, item no. 684).

66. *Ṣaḥīḥ al-Bukhārī*, no. 3327; *Ṣaḥīḥ Muslim*, no. 2834.

67. *Ṣaḥīḥ al-Bukhārī*, nos. 3245, 3246, 3254; *Ṣaḥīḥ Muslim*, no. 2834; *Musnad Aḥmad*, nos. 7486, 10548; Abū Ja'far Ibn al-Bakhtarī, *Majmū' fihi muşannafāt Abī Ja'far b. al-Bakhtarī*. (Beirut: Dar al-Bashā'ir al-

other Companions, such as Abū Saʿīdal-Khudrī,[68] Ibn Masʿūd,[69] Jābir,[70] and Anas,[71] without any mention of sixty cubits.

Hadith 2

The second hadith describes the creation of Ādam and his greeting the angels. This version alone includes the clause on humankind gradually decreasing in height. Hammām b. Munabbih narrates from Abū Hurayra that the Prophet said:

> Allah created Ādam with a height of sixty cubits. He said, "Go and greet that group of angels and hear how they return your greeting; that is the greeting for you and your progeny." [Ādam] said, "Peace be upon you," and they replied, "Peace be upon you and Allah's mercy." Thus, they added, "and Allah's mercy." Everyone who enters Paradise will be in Ādam's image. And people have been decreasing until this day."[72]

Al-Shaʿbī, Abū Salama, Abū Ṣāliḥ, Saʿīd al-Maqburī, and Yazīd b. Hurmuz narrate a version of this hadith from Abū Hurayra without the description of sixty cubits or the gradual decrease in height,[73] An unreliable and truncated version is related from ʿAṭāʾ al-Khurāsānī from Abū Hurayra with only the words "Whoever enters Paradise will be in Ādam's form. People have since been decreasing till this day."[74]

Hadith 3

The third hadith describes the physical features of those who will enter Paradise. Variations of this hadith are narrated by Abū Hurayra, Anas b. Mālik, Muʿādh b. Jabal, al-Miqdām b. Maʿdīkarib, al-Miqdād b. al-Aswad, among others. From the Companions, the mention of Ādam's height as sixty

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Islāmiyya, 2001), no. 217; Abū Nuʾaym al-Aşfahāni, *Ṣifat al-Janna* (Damascus: Dar al-Maʾmūn, 1995), no. 250.

68. *Musnad Aḥmad*, no. 11126.

69. Abū Bakr al-Bazzār, *al-Musnad* (Medina: Maktabat al-ʿUlūm wa-l-Ḥikma, 2009), 5:243, no. 1855.

70. *Ṣaḥīḥ Muslim*, no. 2835.

71. Abū Bakr al-Bayhaqī, *al-Baʿth wa-l-nushūr* (Riyadh: Maktabat Dār al-Ḥijāz, 2013), no. 406.

72. *Ṣaḥīḥ al-Bukhārī*, no. 3326.

73. al-Nasāʾī, *al-Sunan al-kubrā* (Beirut: Muʾassasat al-Risāla, 2002), no. 9977.

74. Ibn Rāhawayh, *al-Musnad* (Cairo: Dār al-Taʾṣīl, 2016), no. 435.

cubits is recorded in the routes of Abū Hurayra and Anas, but these routes are problematic. The route of Abū Hurayra is transmitted through the following people: Ḥammād b. Salama → ʿAlī b. Zayd b. Jadʿān → Saʿīd b. al-Musayyab → Abū Hurayra → the Prophet, who said, "Those destined for Paradise will enter Paradise without body hair or beards, bright, with wavy hair and eyes anointed with kohl, thirty-three years of age, in the image of Ādam, sixty cubits [in height] and seven cubits in width."[75] The majority of Ḥammād's students, including Yaḥyā b. al-Sakan, Yazīd b. Hārūn, and ʿAffān b. Muslim, narrate the hadith with the description of Ādam's height.[76] On the other hand, Ādam b. Abī Iyās and Abū Salama al-Ṭabūdhakī narrate the hadith from Ḥammād without the words "sixty cubits [in height] and seven cubits in width".[77] Regardless of its exact wording, the hadith is unreliable due to the weakness of ʿAlī b. Zayd b. Jadʿān, as stated by Abū al-Faḍl al-Maqdisī (d. 507/1113).[78] Similar problems can be observed in the hadith of Anas noted above.[79]

Hadith 4

The fourth hadith describes Ādam as an enormous date palm. Variations of this hadith are narrated by Ubayy b. Kaʿb, Anas b. Mālik, and ʿAbd Allāh b. ʿAmr. Though certain routes of Ubayy's hadith include the sixty cubits description, the routes of this hadith from all three Companions have been criticized. The primary source for this hadith is Ubayy. Ibn Jarīr al-Ṭabarī (d. 310/923) transmits it via al-Ḥasan al-Baṣrī → Ubayy b. Kaʿb → the Prophet, who said, "Ādam was a tall man like an enormous date palm, sixty cubits, with plenty of hair."[80] However, authoritative transmitters from al-Ḥasan, such as Qatāda b. Diʿāma, narrate this report without the words "sixty cubits."[81] Even the version of the hadith without mention of sixty cubits was described by ʿAmr

75. *Musnad Aḥmad*, no. 7835.

76. Ibn Saʿd, *al-Ṭabaqāt al-kubrā* (Beirut: Dār Ṣādir, 1968), 1:32; Ibn Abī Shayba, *al-Muṣannaf* (Riyadh: Maktabat al-Rushd, 1988), no. 34006; *Musnad Aḥmad*, no. 8524.

77. Ibn Abī Ḥātim al-Rāzī, *ʿIlal al-ḥadīth* (Riyadh: Maṭbaʿat al-Ḥumayḍī, 2006), 5:502–503.

78. Al-Maqdisī, *Dhakhīrat al-huffāẓ al-mukharraj ʿalā al-hurūf wa-l-alfāẓ* (Riyadh: Dār al-Salaf, 1996), 4:2020.

79. Ibn Abī al-Dunyā, *Ṣifat al-janna* (Beirut: Muʾassasat al-Risāla, 1997), p. 163, no. 218.

80. Ibn Jarīr al-Ṭabarī, *Tārīkh al-rusul wa-l-mulūk* (Beirut: Dār al-Turāth, 1967), 1:160.

81. Ibn Sallām, *Tafsīr Yaḥyā b. Sallām* (Beirut: Dār al-Kutub al-ʿIlmiyya, 2004), 2:815.

al-Fallās (d. 249/863) as a "detestable" hadith.[82] Ibn Kathīr (d. 774/1373) states that it is more accurate to attribute this statement to Ubayy b. Kaʿb—not to the Prophet. There is also discontinuity in the chain between al-Ḥasan and Ubayy, so it cannot be admitted as evidence on the subject.[83]

In summary, of the four hadiths analyzed, the last two are inadmissible as evidence due to their weakness. While the first two hadiths are considered generally reliable, there are significant discrepancies among their transmitters regarding the inclusion of the contentious clauses, which diminishes their epistemic weight. This reduction in certainty lends to favoring versions of these two hadiths that align more closely with the substantive scientific data.

Bibliography

Abū Shahba, Muḥammad. *Difāʿ ʿan al-sunna wa-radd shubah al-mustashriqīn wa-l-kuttāb al-muʿāṣirīn*. Cairo: Maktabat al-Sunna, 1989.

Abu Huraira, Zaid. *Towards a universal framework for resolving conflicts between science and scripture*. 2024. Unpublished manuscript. www.academia.edu/83313028.

al-Aṣfahāni, Abū Nuʾaym. *Ṣifat al-Janna*. Damascus: Dar al-Maʾmūn, 1995.

Al-ʿAwnī, al-Sharīf Ḥātim. *Iḍāʾāt baḥthiyyah fī ʿulūm al-sunnah al-nabawiyyah wa baʿḍ al-masāʾil al-sharʿiyyah*. Ed. Hāniʾ ibn Munīr. 1st. Riyadh: Dār al-Ṣumayʿī, 2007.

al-Baghawī, al-Ḥusayn. *Sharḥ al-sunna*. Beirut: al-Maktab al-Islāmī, 1983.

al-Baghdādī, Abū Bakr al-Khaṭīb. *al-Jāmiʿ li-akhlāq al-rāwī wa-ādāb al-sāmiʿ*. Riyadh: Maktabat al-Maʿārif, 1983.

Bāshanfar, Saʿīd. *Manhaj al-Imām al-Bukhārī fī ʿarḍ al-ḥadīth al-maʿlūl fī al-Jāmiʿ al-ṣaḥīḥ*. Beirut: Dār Ibn Ḥazm, 2016.

al-Bayhaqī, Abū Bakr. *al-Baʿth wa-l-nushūr*. Riyadh: Maktabat Dār al-Ḥijāz, 2013.

———. *Kitāb al-Asmāʾ wa-l-ṣifāt*. Edited by Muḥammad Zāhid al-Kawtharī. Cairo: al-Maktaba al-Azhariyya, n.d.

al-Bazzār, Abū Bakr. *al-Musnad*. Medina: Maktabat al-ʿUlūm wa-l-Ḥikma, 2009.

Bonner, John. *Why Size Matters: From Bacteria to Blue Whales*. Princeton: Princeton University Press, 2006.

Brown, Jonathan A.C. *Hadith: Muhammad's Legacy in the Medieval and Modern World*. 1st ed. Oxford: Oneworld Publications, 2009.

"Did the Prophet Say It or Not? The Literal, Historical and Effective Truth of

82. Ibn ʿAdī, *al-Kāmil fī ḍuʿafāʾ al-rijāl* (Beirut: Dār al-Kutub al-ʿIlmiyya, n.d.), 1:547.

83. Ibn Kathīr, *Tafsīr al-Qurʾān al-ʿaẓīm* (Riyadh: Dār Ṭayba, 1999), 3:397, 5:321.

Ḥadīths." *Journal of the American Oriental Society* 129, no. 2 (2009): 259–285.

———. "The Rules of Matn Criticism: There Are No Rules." *Islamic Law and Society* 19 (2012): 356–396.

al-Bukhārī, Muḥammad b. Ismāʿīl. *al-Jāmiʿ al-musnad al-ṣaḥīḥ al-mukhtaṣar min umūr Rasūl Allāh wa-sunanihi wa-ayyāmihi*. Edited by Zuhayr Nāṣir. 9 vols. Beirut: Dār Ṭawq al-Najāh, 2001.

al-Dardīr, Aḥmad al-ʿAdawī. *Sharḥ al-Kharīda al-bahiyya fī ʿilm al-tawḥīd*. Damascus: Dār al-Daqqāq, n.d.

Daneshgar, M., (2023) "The Qurʾān and Science, Part I: The Premodern Era." *Zygon,* 58(4), 952–969.

———. The Qurʾān and Science, Part II: Scientific Interpretations from North Africa to China, Bengal, and the Malay-Indonesian World. *Zygon,* 58: 970-1004.

Dallal, Ahmad. *Islam, Science, and the Challenge of History*. Yale: Yale University Press, 2010.

Dihlawī, Shāh Walī Allāh. *Hujjat Allāh al-bāligha*. Beirut: Dār al-Jil, 2005.

Duyar, İzzet, and Barış Özener. "Evolution of Human Body Height and Its Implications in Ergonomics." *Gaziantep Üniversitesi Sosyal Bilimler Dergisi* 1 (2009): 63–75.

El-Tobgui, Carl Sharif. *Ibn Taymiyya on Reason and Revelation: A Study of Dar taʾarud al-ʾaql wa-l-naql*. Leiden: Brill, 2020.

al-Fasawī, Yaʿqūb. *al-Maʿrifa wa-l-tārīkh*. Beirut: Muʾassasat al-Risāla, 1981.

al-Fayyūmī, Aḥmad. *al-Qawl al-tāmm fī bayān aṭwār sayyidinā Ādam ʿalayhi al-ṣalāh wa-afḍal al-salām*. King Abdul Aziz Library, item no. 684.

Farīd, Abū Sāra Jamīl. *Athar al-ʿilm al-tajrībī fī kashf naqd al-ḥadīth al-nabawī*. Beirut: Markaz Namāʾ, 2016.

Gallagher, Andrew. "Stature, Body Mass, and Brain Size: A Two-Million-Year Odyssey." *Economics and Human Biology* 11 (2013): 551–562.

al-Ghazālī, Abū Ḥāmid. *The Incoherence of the Philosophers: A Parallel English-Arabic Text*. Edited and translated by Micheal E. Marmura. Provo, UT: Brigham Young University Press, 2000.

———. *al-Mustasfā min ʿilm al-uṣūl*. Beirut: Dār al-Kutub al-ʿIlmiyya, 1993.

Guessoum, Nidhal. *Islam and Science: Past, Present, and Future Debates*. Cambridge: Cambridge University Press, 2023.

Ḥamza, ʿAbd al-Razzāq. "Addendum," in *al-Qāʾid ilā taṣḥīḥ al-ʿaqāʾid*. Beirut: al-Maktab al-Islāmī, 1984.

Ibn Abī al-Dunyā, Abū Bakr. *Ṣifat al-janna*. Beirut: Muʾassasat al-Risāla, 1997.

Ibn Abī Shayba, Abū Bakr. *al-Muṣannaf*. Riyadh: Maktabat al-Rushd, 1988.

Ibn ʿAdī, Abū Aḥmad. *al-Kāmil fī ḍuʿafāʾ al-rijāl*. Beirut: Dār al-Kutub al-ʿIlmiyya, 1997.

Ibn ʿĀshūr. *Tafsīr al-taḥrīr wa-l-tanwīr*. Tunis: al-Dār al-Tūnisiyya, 1984.

Ibn al-Bakhtarī, Abū Jaʾfar. *Majmūʿ fihi muṣannafāt Abī Jaʾfar b. al-Bakhtarī*. Beirut: Dar al-Bashāʾir al-Islāmiyya, 2001.

Ibn al-Ḍiyāʾ, Abū al-Baqāʾ. *Tārīkh Makka al-musharrafa wa-l-masjid al-ḥarām wa-l-Madīna al-sharīfa wa-l-qabr al-sharīf*. Beirut: Dār al-Kutub al-ʿIlmiyya, 2004.

Ibn Fūrak, Abū Bakr. *Mushkil al-ḥadīth wa-bayānuhu*. Beirut: ʿĀlam al-Kutub, 1985.

Ibn Ḥajar, Abū al-Faḍl. *Fatḥ al-Bārī sharḥ Ṣaḥīḥ al-Bukhārī*. Beirut: Dār al-Maʿrifa, 1960.

Ibn Hajar al-ʿAsqalānī, Abū al-Fadl. *Fath al-Bārī sharh Ṣahīh al-Bukhārī*. Edited by ʿAbd al-ʾAzīz bin Bāz and Ayman Fuʾad ʿAbd al-Baqi. 14 vols. Beirut: Dār al-Kutub al-Ilmiyya, 1997.

Ibn Ḥanbal, Aḥmad. *al-Musnad*. Edited by Shuʿayb al-Arnāʾūṭ. Beirut: Muʾassasat al-Risāla, 2001.

Ibn Hubayra, Yaḥyā. *al-Ifṣāḥ ʿan maʿānī al-Ṣiḥāḥ*. Riyadh: Dār al-Waṭan, 1996.

Ibn al-Jawzī. *al-Muntaẓam fī tārīkh al-mulūk wa-l-umam*. Beirut: Dār al-Kutub al-ʿIlmiyya, 1992.

Ibn Kathīr, Ismāʿīl. *Tafsīr al-Qurʾān al-ʿaẓīm*. Riyadh: Dār Ṭayba, 1999.

Ibn Khaldūn, ʿAbd al-Raḥmān. *Dīwān al-mubtadaʾ wa-l-khabar*. Beirut: Dār al-Fikr, 1988.

Ibn al-Mubārak, ʿAbd Allāh. *Kitāb al-Raqāʾiq*. Bahrain: Wizārat al-ʿAdl wa-l-Shuʾūn al-Islāmiyya, 2014.

Ibn al-Qayyim, Muḥammad. *Zād al-maʿād fī hady khayr al-ʿibād*. Beirut: Muʾassasat al-Risāla, 1994.

Ibn Rāhawayh, Isḥāq. *al-Musnad*. Cairo: Dār al-Taʾṣīl, 2016.

Ibn Saʿd, Muḥammad. *al-Ṭabaqāt al-kubrā*. Beirut: Dār Ṣādir, 1968.

Ibn Sallām, Yaḥyā. *Tafsīr Yaḥyā b. Sallām*. Beirut: Dār al-Kutub al-ʿIlmiyya, 2004.

ʿIwaḍ Allāh, Ṭāriq. *Jāmiʿ al-masāʾil al-ḥadīthiyya*. Cairo: Dār Ibn ʿAffān, 2006.

Jawnpūrī, Yūnus. *al-Nibrās al-sārī ilā riyāḍ al-Bukhārī*. Gujarat: Maktabat al-Qalam, n.d.

Kashmīrī, Anwar Shāh. *al-ʿArf al-shadhī sharḥ Sunan al-Tirmidhī*. Beirut: Dār al-Turāth al-ʿArabī, 2004.

Khayyāṭ, Usāma. *Mukhtalif al-ḥadīth bayna al-muḥaddithīn wa-l-uṣūliyyīn wa-l-fuqahāʾ*. Riyadh: Dār al-Faḍīla, 2001.

Laher, Suheil. "Twisted Threads: Genesis, Development and Application of the Term and Concept of Tawatur in Islamic Thought." PhD dissertation, Harvard University, 2014.

al-Maḥbūbī, ʿUbayd Allāh. *al-Tawḍīḥ sharḥ al-Tanqīḥ*. Cairo: Maktabat Ṣabīḥ, n.d.

al-Maqdisī, al-Ḍiyāʾ. *al-Muntaqā min masmūʿāt Marw*. Damascus: al-Assad National Library, manuscript no. 344.

al-Maqdisī, Muṭahhar b. Ṭāhir. *Kitāb al-Badʾ wa-l-tārīkh*. Cairo: Maktabat al-Thaqāfa al-Dīniyya, n.d.

———. *Dhakhīrat al-huffāẓ al-mukharraj ʿalā al-hurūf wa-l-alfāẓ*. Riyadh: Dār al-Salaf, 1996.

al-Maqrīzī, Aḥmad. *al-Mawāʿiẓ wa-l-iʿtibār bi-dhikr al-khiṭaṭ wa-l-āthār.* Beirut: Dār al-Kutub al-ʿIlmiyya, 1997.

Moog, Florence. "Gulliver Was a Bad Scientist." *Scientific American* 179, no. 5 (1948): 52–55.

al-Muʿallimī, ʿAbd al-Raḥmān. *al-Anwār al-kāshifa li-mā fī kitāb Aḍwāʾ ʿalā al-sunna min al-zalal wa-l-taḍlīl wa-l-mujāzafa*. Jeddah: Majmaʿ al-Fiqh al-Islāmī, 2012.

al-Muṭīʿī, Muḥammad Bakhīt. *Tawfīq al-Raḥmān li-l-tawfīq bayna mā qālahu ʿulamāʾ al-hayʾa wa-bayna mā jāʾa fī al-aḥādīth al-ṣaḥīḥa wa-āyāt al-Qurʾān*. Beirut: Dār al-Minhāj, 2016.

al-Nasafī, Ḥāfiẓ al-Din. *Kashf al-asrār sharh al-musannif ʿalā al-Manär.* Beirut: Dar al-Kutub al-Ilmiyya, n.d.

al-Nasāʾī, Aḥmad b. Shuʿayb. *al-Sunan al-kubrā*. Edited by Shuʿayb al-Arnāʾūṭ. Beirut: Muʾassasat al-Risāla, 2002.

al-Nawawī, Yaḥyā b. Sharaf. *al-Minhāj fī sharḥ Ṣaḥīḥ Muslim b. al-Ḥajjāj.* Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1972.

al-Qushayrī, Muslim b. al-Ḥajjāj. *Kitāb al-Tamyīz*. Riyadh: Sharikat al-Ṭibāʿa al-ʿArabiyya, 1982.

———. *al-Musnad al-ṣaḥīḥ al-mukhtaṣar min al-sunan bi-naql al-ʿadl ʿan al-ʿadl ʿan Rasūl Allāh*. Jeddah: Dār al-Minhāj, 2013.

Riḍā, Rashīd. *Tafsīr al-manār.* Cairo: Dār al-Manār, 1948.

al-Razī, Fakhr al-Dīn. *Mafātīḥ al-ghayb.* Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1999.

al-Rāzī, Ibn Abī Ḥātim. *ʿIlal al-ḥadīth*. Riyadh: Maṭbaʿat al-Ḥumayḍī, 2006.

Sahnūn, Ibn Saʾīd al-Tanūkhī. *al-Mudawwana al-kubra*. Beirut: Dār al-Kutub al-'Ilmiyya, 1994.

Shea, John. *Prehistoric Stone Tools of Eastern Africa: A Guide*. New York: Cambridge University Press, 2020.

al-Samarqandī, Muḥyī al-Dīn. *Naqd matn al-ḥadīth fī ḍawʾ natāʾij al-ʿulūm al-tajrībiyya*. Beirut: Dār al-Kutub al-ʿIlmiyya, 2008.

al-Subkī, Tāj al-Dīn. *Ṭabaqāt al-Shāfiʿiyya al-kubrā*. Cairo: ʿĪsā al-Bābī al-Ḥalabī, 1964.

al-Ṭabarī, Ibn Jarīr. *Jāmiʿ al-bayān fī taʾwīl āy al-Qurʾān*. Beirut: Muʾassasat al-Risāla, 2000.

———. *Tārīkh al-rusul wa-l-mulūk*. Beirut: Dār al-Turāth, 1967.

al-Tuwayjirī, Ḥamūd. *ʿAqīdat ahl al-īmān fī khalq Ādam ʿalā ṣūrat al-Raḥmān*. Riyadh: Dār al-Liwāʾ, 1989.

al-ʿUtaybī, Ghāzī. "al-Tarjīḥ bi-kathrat al-ruwāh: dirāsa uṣūliyya taṭbīqiyya." *Majallat Jāmiʿat Umm al-Qurā li-ʿUlūm al-Sharīʿa wa-l-Dirāsāt al-Islāmiyya* 44 (2008): 297–364.

ʿUthmānī, Muḥammad Taqī. *Takmilat Fatḥ al-Mulhim*. Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 2006.