

The Islamic Golden Age: The Myth of Lost Knowledge

Zaman Keemasan Islam: Mitos Pengetahuan yang Hilang

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Abstract

It has been claimed that European scholars lost nearly all the Greek and Latin proto-scientific, mathematical, and philosophical texts after the fall of the Roman empire. Alison Abbott, Senior European Correspondent for the scientific journal Nature claims that by the fifteenth century "Many Arabic works had by then been translated into Latin, but the sources themselves were neglected"¹. This has become entrenched in pop history. In reality, the Greek sources of those Arabic translations were not neglected. Most of the Greek knowledge which has been preserved was maintained independently of the Muslim world. Even without the help of the Muslim scholars who curated, studied, critiqued, and developed the Greek knowledge tradition, the modern knowledge of Greek mathematics and science would be virtually the same as it is now.

Keywords

Islamic Golden Age, Myth, Lost Knowledge, History, Greek Science

Abstract

Telah diklaim bahwa para sarjana Eropa kehilangan hampir seluruh teks proto-saintifik, matematis, dan filosofis Yunani serta Latin setelah jatuhnya Kekaisaran Romawi. Alison Abbott, Koresponden Senior Eropa untuk jurnal ilmiah Nature, menyatakan bahwa pada abad kelima belas "Banyak karya berbahasa Arab pada saat itu telah diterjemahkan ke dalam bahasa Latin, tetapi sumber aslinya diabaikan." Pandangan ini telah mengakar dalam sejarah populer. Pada kenyataannya, sumber-sumber Yunani dari terjemahan Arab tersebut tidak diabaikan. Sebagian besar pengetahuan Yunani yang berhasil dilestarikan tetap terjaga secara independen dari dunia Muslim. Bahkan tanpa bantuan para sarjana Muslim yang mengkurasi, mempelajari, mengkritisi, dan mengembangkan tradisi pengetahuan Yunani, pengetahuan modern tentang matematika dan sains Yunani akan tetap hampir sama seperti yang kita miliki saat ini.

Keywords

Masa Keemasan Islam, Mitos, Pengetahuan yang Hilang, Sejarah, Sains Yunani

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¹ "Many Arabic works had by then been translated into Latin, but the sources themselves were neglected.", Alison Abbott, "Rebuilding the Past," *Nature* 432.7019 (2004): 794.

Introduction

When the roman empire collapsed, western european scholars found their access to greek classical writings severely limited. This was caused firstly by the rise of latin as the lingua franca of the west, so that knowledge of greek became scarce, and greek texts could not be read. However, it was not because the classical texts themselves were destroyed, or because they were no longer being copied.

One reason for their lack of availability was the viking raids which burned monasteries, destroying their libraries.² Historians reynolds and wilson explain “the stocks of classical books in britain had been devastated by the viking raids and other disorders of the ninth century and recovery was slow”.³ Another reason was the lack of greek literacy in western europe, which had been replaced by latin. The stanford encyclopedia of philosophy explains that the greek texts “were “lost” not in the sense that the texts were simply unavailable but in the sense that very few people could read them, since they were written in the wrong language”.⁴

The stanford encyclopedia of philosophy article continues by explaining that even though there was a scarcity of primary greek philosophical texts in the west, knowledge of greek philosophy had also been

² “When King Alfred reflected on the decline of learning in the ninth century, he remembered ‘how, before everything was ransacked and burned, the churches throughout England stood filled with treasures and books’, Peter H Sawyer, *The Oxford Illustrated History of the Vikings* (Oxford; New York: Oxford University Press, 1997), 59.

³ “The stocks of classical books in Britain had been devastated by the Viking raids and other disorders of the ninth century and recovery was slow.”, L. D Reynolds and N. G Wilson, *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature* (Oxford: Clarendon, 1991), 108–109.

⁴ “They were “lost” not in the sense that the texts were simply unavailable but in the sense that very few people could read them, since they were written in the wrong language. As the Western Roman Empire gradually disintegrated, the knowledge of Greek all but disappeared.”, Paul Vincent Spade et al., “Medieval Philosophy,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Summer 2018. (Metaphysics Research Lab, Stanford University, 2018), <https://plato.stanford.edu/archives/sum2018/entries/medieval-philosophy>.

preserved in christian philosophical commentaries on plato and aristotle, written by theologians such as tertullian, victorinus, ambrose, themistius, ammonius, simplicius of cilicia, boethius, and john philoponus. Consequently, the article comments “it is also important to recognize that the medievals knew a good deal about greek philosophy anyway”.⁵

Similarly, historian of philosophy frederick copleston wrote that modern research into the transmission of the greek classics has shown “it can no longer be said that the mediaevals had no real knowledge of aristotle”.⁶ Historian of philosophy cristina d’ancona says “at the end of the fifth century and during the sixth, within a christian environment both in alexandria and in athens, the neoplatonic schools continued to comment upon aristotle and plato”.⁷

Research Methode

This study employs a qualitative, historical–philosophical method, drawing upon primary sources such as extant Greek manuscripts, Byzantine commentaries, and early Latin translations, alongside secondary literature

⁵ “Still, while it is important to emphasize this absence of primary texts of Greek philosophy in the Latin Middle Ages, it is also important to recognize that the medievals knew a good deal about Greek philosophy anyway. They got their information from (1) some of the Latin patristic authors, like Tertullian, Ambrose, and Boethius, who wrote before the knowledge of Greek effectively disappeared in the West, and who often discuss classical Greek doctrines in some detail; and (2) certain Latin pagan authors such as Cicero and Seneca, who give us (and gave the medievals) a great deal of information about Greek philosophy.”, Paul Vincent Spade et al., “Medieval Philosophy,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Summer 2018. (Metaphysics Research Lab, Stanford University, 2018), <https://plato.stanford.edu/archives/sum2018/entries/medieval-philosophy>.

⁶ “As modern investigation has shown that translations from the Greek generally preceded translations from the Arabic, and that, even when the original translation from the Greek was incomplete, the Arabic-Latin version soon had to give place to a new and better translation from the Greek, it can no longer be said that the mediaevals had no real knowledge of Aristotle, but only a caricature of his doctrine, a picture distorted by the hand of Arabian philosophers.”, Frederick Copleston, *A History of Philosophy* (A&C Black, 1999), 207–208.

⁷ “At the end of the fifth century and during the sixth, within a Christian environment both in Alexandria and in Athens, the Neoplatonic schools continued to comment upon Aristotle and Plato.”, Cristina D’Ancona, “Greek into Arabic: Neoplatonism in translation,” in *The Cambridge Companion to Arabic Philosophy*, ed. Peter Adamson and Richard C Taylor (Cambridge: Cambridge Univ. Press, 2005), 16.

from peer-reviewed journals and scholarly monographs that address the transmission of Greek knowledge. Materials were sourced from academic repositories including JSTOR, Project MUSE, and specialised manuscript archives, with selection criteria focusing on direct discussion of the preservation of Greek science and philosophy, and evidential analysis of Byzantine, Christian, and Muslim contributions. Through comparative historiography and source criticism, the research juxtaposes the popular “lost knowledge” narrative with counter-arguments, tracing conceptual and textual lineages from Greek originals through Byzantine stewardship to later Latin and Arabic renderings. Cross-referencing diverse traditions allowed for the identification of both continuities and transformations in Aristotelian and Platonic thought, while acknowledging the study’s limitations due to the fragmentary survival of texts, the uneven transmission of manuscripts, and the interpretative challenges posed by multilingual and cross-cultural contexts.

Findings and Discussion

1. Preservation of Greek texts by the monastic tradition

Although scientific progress in western Europe was delayed by a combination of the destruction of libraries, a lack of classical sources, and widespread illiteracy (especially of Greek), study of the Greek classical literature was carefully fostered within the Christian church, and the monasteries in particular proved to be essential to the preservation and study of Greek philosophical and proto-scientific commentary.

Physicist John Freely observed that “the development of the monastic movement not only increased literacy, but it produced the first European scientists, who would lay the foundations for the emergence of modern science”.⁸

⁸ “Progress would be glacially slow at first, for western Europe had only a few fragments of classical learning to start with and most of the population was illiterate. But in time, as we will see, the development of the monastic movement not only increased literacy, but it produced the first European scientists, who would lay the foundations for the emergence of modern science, a process that would begin far from the former centers of ancient Graeco-Roman culture.”, John

In England, classical studies continued to flourish under the patronage of church leaders. Freely relates that the English bishop Benedict Biscop (seventh century), made five trips to Rome in order to collect Greek classical texts for monastic libraries in England, where they could be preserved and studied. As a result of Benedict's efforts, the library of his abbey became famous in Europe for its collection of classical literature⁹.

Freely also describes how Benedict brought other scholars to England, to help foster the preservation and study of the Greek classics, such as Theodore of Tarsus (a Greek), and Hadrian the African (a Berber from North Africa)¹⁰. Theodore and Hadrian were highly influential on the development of the English academic tradition. Freely wrote that they "founded a monastic school in Canterbury that began what has been called the golden age of Anglo-Saxon scholarship".

The eighth-century Anglo-Saxon historian Bede wrote that their school "attracted a large number of students, into whose minds they poured the waters of wholesome knowledge day by day"¹¹. Arguably their most

Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe* (New York, NY: Overlook Duckworth, 2013), 46.

⁹ "Saint Benedict Biscop (c. 628–690) was the founding abbot of the monasteries in Wearmouth and Jarrow on Tyne in Northumbria, for which he made five trips to Rome to bring back building materials, artisans, and books to stock their libraries. The library at Wearmouth became famous throughout medieval Europe, its most prized possession being the Codex Amiatinus, the earliest manuscript of the complete Bible in the Latin Vulgate version, the translation done by Saint Jerome.", John Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe* (New York, NY: Overlook Duckworth, 2013), 51-52.

¹⁰ "On his third trip to Rome Benedict returned with Theodore of Tarsus (602–690), a Greek from Asia Minor who had studied in Antioch and Constantinople before joining a monastery in Rome, where in 668 Pope Vitalianus (r. 757–768) appointed him as archbishop of Canterbury. Benedict also brought back the monk Hadrian the African, a Greek-speaking Berber from Tunisia who had twice turned down appointments to the archbishopric of Canterbury.", John Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe* (New York, NY: Overlook Duckworth, 2013), 52.

¹¹ "Theodore and Hadrian founded a monastic school in Canterbury that began what has been called the golden age of Anglo-Saxon scholarship. According to the Venerable Bede, Theodore and Hadrian "attracted a large number of students, into whose minds they poured the waters of wholesome knowledge day by day. In addition to instructing them in the holy Scriptures, they also taught their pupils poetry, astronomy, and the calculation of the church calendar.... Never have there been such happy times as these since the English settled Britain.", John Freely, *Before*

influential contribution was the teaching of greek, in addition to arithmetic and physical science. According to the historian bede, some of their students could speak greek and latin with native level fluency¹².

Bede himself was a competent scholar who made several scientific contributions of his own, such as explaining how the earth's spherical shape resulted in the differing length of daylight throughout the year. Remarkably, bede also deduced the effect of the moon on tides, attributing it to a force exerted by the moon itself. Speaking of the tidal rise and fall of the sea, he wrote "it is as if it were dragged forwards against its will by certain exhalations of the moon, and when her power ceases, it is poured back again into his proper measure".¹³

This was a remarkable conclusion given the fact that the concept of gravity was still centuries in the future. Bede's observations on the causal effect of the moon on the tides was in fact far ahead of all his peers. Muslim contributions to the understanding of the tides were not made until a century later, when persian astrologer abu ma'shar made independent observations on the relationship of the moon and the tides.

However, although his work did not become available to western scholars until the twelfth century, and his view that the tides were caused by the properties of the moon's light (which he incorrectly believed was generated by the moon and heated the earth's seas), was wrong. Also in the

Galileo: The Birth of Modern Science in Medieval Europe (New York, NY: Overlook Duckworth, 2013), 52.

¹² "Theodore and Hadrian taught Greek and Latin as well as arithmetic and physical science. Bede says that in his own time, early in the eighth century, there were students of Theodore and Hadrian who spoke Greek and Latin as fluently as their own language.", John Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe* (New York, NY: Overlook Duckworth, 2013), 52.

¹³ "De temporum ratione presented the traditional view of the geocentric cosmos, explaining how the spherical earth influenced the changing length of daylight during the year, of how the appearance of the sickle moon at twilight was due to the motion of the sun and moon, and of how to relate the occurrence of the tides at a given place to phases of the moon. He discussed spring and neap tides and suggested that tidal action followed a nineteen-year cycle related to the motions of the sun and moon.", John Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe* (New York, NY: Overlook Duckworth, 2013), 56.

twelfth century, the spanish arab astronomer al bitruji suggested an alternative explanation of the tides, which was likewise wrong, attributing them to the movement of the heavens.

Bede was correct in deducing that the moon was exerting some kind of attractive force at a distance, which caused the movement of the earth's bodies of water. However, he was so far ahead of his time that this theory was not developed further until 1608, when the flemish mathematician simon steven argued strongly for a model like bede's. The next year, in 1609, german astrologer and mathematician johannes kepler proposed a kind of gravitational power as an explanation for bede's mysterious attractive force. This was famously refined by isaac newton, who introduced a unified model of gravity which not only explained the moon's effect on the tides, but the relationship of the sun, moon, and planets to each other.

Having been re-ignited in the seventh century, the western academic tradition continued to develop without interruption, as the greek philosophical texts were copied and studied by important scholars such as alcuin of york in the eighth century, john scotus in the ninth century, and adelard of bath in the twelfth century, all of whom made important contributions to the foundations of western science.

Classical scholars leighton durham reynolds and nigel guy wilson describe how charlemagne hired alcuin of york "to take charge of his palace school and be his adviser on educational matters" ¹⁴. It was alcuin's work which reintroduced the study of the greek classics into the eighth century european educational curriculum. Consequently, although the availability of the greek classical texts in western europe was extremely limited, neither the texts nor the knowledge of them was ever completely lost. Not only were they

¹⁴ "When it came to creating an educated class out of next to nothing, the Anglo-Saxons were past masters, and it was a shrewd move on the part of Charles to turn to York, at this time the educational centre of England and indeed of Europe, and in 782 to invite Alcuin, the head of its school, to take charge of his palace school and be his adviser on educational matters.", L. D Reynolds and N. G Wilson, *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature* (Oxford: Clarendon, 1991), 93.

still studied, but gradual progress in scientific knowledge continued to be made.

2. Byzantine preservation of greek classical texts

In eastern europe, where greek remained the lingua franca of the byzantine empire, the situation was far better, and almost all the available greek philosophical tradition was preserved. Peter adamson, professor of philosophy at the university of munich, writes “in the eastern part of the roman empire, the greek-speaking byzantines could continue to read plato and aristotle in the original”.¹⁵

In their review of the historical transmission of greek texts, scholars reynolds and wilson note that from the ninth century onwards there was “a practically continuous tradition of classical studies in byzantium”, during which time numerous classical greek works were copied, studied, and used as textbooks.¹⁶

Professor of ancient philosophy katerina ierodiakonou likewise says that the byzantine christians “had access to most of the major ancient texts we still have”, adding that there are at least 1,000 byzantine greek copies of or commentaries on aristotle, and over 260 copies of plato’s dialogues.¹⁷

¹⁵ “In the eastern part of the Roman Empire, the Greek-speaking Byzantines could continue to read Plato and Aristotle in the original.”, Peter Adamson, “Arabic Translators Did Far More than Just Preserve Greek Philosophy — Peter Adamson | Aeon Ideas,” Aeon, 4 November 2016, <https://aeon.co/ideas/arabic-translators-did-far-more-than-just-preserve-greek-philosophy>.

¹⁶ “From this time onwards, as a result of the activity in Photius’ salon and in various schools, there is a practically continuous tradition of classical studies in Byzantium. Literary texts were copied regularly and more technical works, especially mathematical and medical, were much studied, not least because they were still in general the best textbooks available.”, L. D Reynolds and N. G Wilson, *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature* (Oxford: Clarendon, 1991), 64.

¹⁷ “They certainly had access to most of the major ancient texts we still have, and the continuity of the Greek language, of course, made it possible for them to study the ancients in the original. To take the obvious case of Plato’s and Aristotle’s works, at least a thousand Byzantine manuscripts have survived which either preserve Aristotle’s text, or in addition also comment on it; in Plato’s case there are more than 260 Byzantine manuscripts of his dialogues.”, Katerina Ierodiakonou, “Introduction,” in *Byzantine Philosophy and Its Ancient Sources*, ed. Katerina Ierodiakonou (Oxford: Clarendon Press, 2004), 9.

3. Origin of the myth

The myth of christian europe losing the greek classical knowledge tradition from the fall of the roman empire to the point at which it was returned via latin translations of arabic copies, has ancient roots. Ironically, it was perpetuated not only by muslim opponents of christianity but also by christians themselves, and later by secular historians in modern europe.

Dr nadia maria el cheikh of the american university of beirut in lebanon, has written extensively on the subject of the early muslim strategy of accusing christians of bringing about the death of greek science¹⁸. El cheikh records that muslims commonly attributed the decline of greek science to the fourth century, subsequent to christianity's rise under constantine¹⁹.

Professor maria mavroudi, historian at the university of california in berkeley, notes that during the ninth and tenth centuries, muslim scholars constructed a narrative that "the sciences died out in christian byzantium and were transferred to the islamic world".²⁰

However, the obscuring of christian involvement in the development of greek science and the translation of greek texts into arabic, was not merely an anti-christian argument originating from muslims. It was repeated by christians of the renaissance, who wished to depict themselves as the true revivers of the greek intellectual heritage, and who created the myth of the

¹⁸ "Like the Hellenes of late antiquity, who were convinced that the rise of Christianity meant the end of Greek science, Muslim authors blamed the decline of science and philosophy on the Christianization of the Roman empire.", Nadia Maria El Cheikh, *Byzantium Viewed by the Arabs*, Harvard Middle Eastern Monographs 36 (London: Harvard University Press, 2004), 106.

¹⁹ "Writing in the Almohad court, Abu Yahya b. Mas'ada similarly places the blame for the decline of science on Constantine the Great:", Nadia Maria El Cheikh, *Byzantium Viewed by the Arabs*, Harvard Middle Eastern Monographs 36 (London: Harvard University Press, 2004), 108; "They all stress that the decline began in the fourth century A.D. and that Christianity was its root cause.", Nadia Maria El Cheikh, *Byzantium Viewed by the Arabs*, Harvard Middle Eastern Monographs 36 (London: Harvard University Press, 2004), 108.

²⁰ "The claim that philosophy and the sciences died out in Christian Byzantium and were transferred to the Islamic world can be found in a number of ninth- and tenth-century Arabic sources, edited and translated from the nineteenth century onwards and mostly taken at face value since.", Maria Mavroudi, "Translations from Greek into Latin and Arabic during the Middle Ages: Searching for the Classical Tradition," *Speculum* 90.1 (2015): 38.

dark ages in order to depict the christians of the middle ages as anti-intellectual and scientifically ignorant. In this view, greek science was lost after the fall of rome, and not restored until the renaissance era. Mavroudi says “we now know that this argument was created by renaissance humanists who sought to dismiss earlier scholastic aristotelianism”.²¹

Finally, a couple of centuries later, secular scholars repeated the claim of an intellectual dark age during which christians neglected greek texts and learning. The seventeenth century scholar edward gibbon was one of the earliest secular historians to make this claim, and his work not only popularized the idea but gave it such credibility that it was continued well into the twentieth century. Gibbon poured scorn on the idea of any scientific progress during the middle ages, and ridiculed the medieval scholars of england’s most famous universities, saying “the schools of oxford and cambridge were founded in a dark age of false and barbarous science”.²²

In the post-enlightenment era, when secular interests were gaining social acceptance and political power, non-religious and anti-religious figures found this a useful weapon with which to attack their religious opponents, and discredit christianity. Two nineteenth century writers in the united states, andrew dickson white and john william draper, were responsible for establishing what is known in the history of science as the conflict thesis, arguing not only that science and religion are incompatible, but that christianity in particular was responsible for both the death of greek

²¹ “This rapid look at the twelfth- and thirteenth-century translations from Greek into Latin brings us to the argument, presented earlier, that ancient Greek science and philosophy were known in medieval Latin through translations from the Arabic, while direct recourse to Greek did not take place until the Renaissance. We now know that this argument was created by Renaissance humanists who sought to dismiss earlier scholastic Aristotelianism.”, Maria Mavroudi, “Translations from Greek into Latin and Arabic during the Middle Ages: Searching for the Classical Tradition,” *Speculum* 90.1 (2015): 54.

²² “The schools of Oxford and Cambridge were founded in a dark age of false and barbarous science; and they are still tainted with the vices of their origin.”, Edward Gibbon, *The Miscellaneous Works of Edward Gibbon: With Memoirs of His Life and Writing Composed by Himself, Illustrated from His Letters with Occasional Notes and Narrative*, vol. 5 (B. Blahe, 1837), 23.

science and the suppression of scientific knowledge and advancement during the centuries between the fall of rome and the renaissance.

This narrative has long been abandoned by modern historians, though it is still preserved in the occasional academic work. Two recent books attempting to revive this model are “the closing of the western mind” (2003), by historian charles freeman, and “the darkening age: the christian destruction of the classical world” (2017), by classical scholar catherine nixley. However, these works have received only a lukewarm response from mainstream scholarship, which shows no interest in returning to the conflict thesis.

Conclusion

scholarly works on the history of the islamic golden age still have a tendency to obscure the christian involvement in the work of translating the greek literature for the benefit of the muslims who could not read it. this is particularly apparent in works written by arab and muslim scholars. in their article on the translation movement of the islamic golden age, drs hala al-khalidi and basma ahmad sedki dajani of the university of jordan say “arabs borrowed from all known cultures”,²³ citing the arabs borrowing knowledge from greeks, indians, egyptians, nabateans, and chaldeans. they do not mention the christian translators and scholars on whom the translation movement relied,²⁴ nor do they mention the jewish scholars who also made significant contributions of their own.

²³ “Arabs borrowed from all known cultures. For example, they relied on Greek knowledge when dealing with philosophy, medicine, engineering, astronomy and music. Arabs relied on Indians as they studied the stars, biographies, literature, history and law. They gained from Nabataeans and Chaldeans in the fields of agriculture, astrology, magic and incantations. Also, Arabs depended on Egyptians in the fields of chemistry and anatomy.”, Hala Al-Khalidi and Basma Ahmad Sedki Dajani, “Facets from the Translation Movement in Classic Arab Culture,” *Procedia — Social and Behavioral Sciences* 205 (2015): 572.

²⁴ “Out of the forty-four names of translators from foreign into Arabic language in IN’s list, twenty-eight (64%) are Christians, two are Sabians, one is a Jew, none are Muslims, and thirteen

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(29.5%) are unknown. This study supports Rosenthal's assertion that almost all translators from Greek and Syriac into Arabic were Christians belonging to various churches.", Mohammad Hannan Hassan, "Where Were the Jews in the Development of Sciences in Medieval Islam? A Quantitative Analysis of Two Medieval Muslim Biographical Notices," *Hebrew Union College Annual* 81 (2010): 113–114.

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