

# The Role of Monotheism in Science<sup>1</sup>

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In our current intellectual milieu, there exists a prevailing notion that faith in the Divine constitutes an obstacle for those aspiring to pursue careers in the scientific realm. This perspective mandates that believers meticulously guard against allowing their spiritual convictions to bias their empirical inquiries. There's an underlying implication that only individuals of faith approach their scientific endeavours with preconceived notions. Moreover, there's a widespread belief that the realms of science and research stand in stark opposition to religious faith, with a particular emphasis on the notion that historically, religions such as Christianity have posed a barrier to the evolution of modern science—a barrier that needed to be surmounted. However, this stance overlooks the fact that these assumptions lack empirical verification within the annals of science history. Contrary to these views, the zeniths of scientific advancement have frequently coincided with eras, regions, and personalities deeply rooted in monotheistic beliefs. This raises the question: Is this synchronicity mere coincidence, or does historical evidence imply that monotheism played a pivotal role in fostering the development of modern science and its associated research culture? While numerous discussions have explored the historical dimensions of this debate, I posit that the philosophical underpinnings of this discourse warrant further examination.

Raised in the Sepharadi Jewish tradition, my formative years were steeped in a cultural and religious milieu that celebrated inquiry and knowledge. Contrary to the experiences of some who were taught to view the natural sciences with suspicion or outright disdain, my heritage encouraged a harmonious view of science and religion. In the Sepharadi worldview, the pursuit of scientific knowledge was not seen as antithetical to religious devotion. Instead, it was considered a means to deepen one's understanding of the Divine's creation. This perspective was fundamentally at odds with the notion that religion and science are inherently incompatible—an idea that, unfortunately, is all too common in many circles.

My journey through academia further dismantled the binary opposition between science and faith that I had been led to believe existed by the broader society. It became increasingly clear that a genuine commitment to understanding the Divine as the creator naturally fosters a profound interest in exploring the intricacies of the natural world. This realisation was a stark departure from the “science versus religion” narrative that had been portrayed as self-evident truth. This binary, I discovered, was not only unfounded but also neglected the rich history of interplay between religious thought and scientific exploration, particularly within the monotheistic traditions.

As we delve deeper into the relationship between monotheism and the emergence of the natural sciences, it becomes evident that this connection is not merely coincidental. The intellectual rigour and curiosity championed by Judaism, among other monotheistic traditions, have significantly contributed to the scaffolding upon which modern science was built. This exploration seeks to unravel the intricate tapestry of this relationship, shedding light on the philosophical, rather than solely historical, dimensions that underpin the synergy between faith and scientific inquiry.

## **Science in non-Monotheistic Societies**

The acknowledgment that significant technological and engineering achievements were accomplished by ancient civilisations, including the early Greeks, Persians, Babylonians, Indians, and Chinese, presents a nuanced challenge

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<sup>1</sup> This essay is a brief overview of a detailed topic, and it does not include specific citations. These sources can be found in the following books: “Monotheism and the Rise of Science” by J. L. Schellenberg, and “Ideas: Shemot” by Sina Kahen

to the argument attributing a pivotal role to monotheism in the genesis of science. These societies demonstrated remarkable proficiency in areas such as mathematics, geometry, metalworking, and more, achieving feats in construction and engineering, producing glass and mirrors, and even making use of electricity. Their astronomical observations were notably precise, often serving astrological purposes, and they possessed a medical and anatomical knowledge that would remain unrivaled for many centuries.

Given these advancements occurred within predominantly polytheistic or non-monotheistic cultures, the question arises: Did monotheism contribute anything indispensable to the emergence of science? This query necessitates a critical differentiation between science and technology—a distinction that is vital for a comprehensive understanding of both the argument linking monotheism with the development of science and the broader history of scientific progress.

While technology and science are intimately related, with scientific discoveries often precipitating technological innovations, they are not synonymous. The ancient achievements in understanding mathematics, geometry, predicting solar eclipses, and developing ancient war machinery, impressive as they are, do not fully encapsulate what we define as science today. What appears to have been absent, or at least not systematically pursued in these societies, was a deep-seated curiosity about the underlying principles governing natural phenomena, the interconnectedness of these principles, and a structured methodology for expanding our understanding of the natural world.

These societies undoubtedly grappled with questions about the workings of the universe, but there lacks evidence of a consistent and integrated pursuit of such knowledge that was explicitly connected to an overarching worldview or methodology. The systematic approach to inquiry, characterised by the formulation of hypotheses, rigorous experimentation, and the application of a methodological framework to understand the natural world, emerged more conspicuously within contexts influenced by monotheistic thought.

Monotheism, with its emphasis on a singular, rational creator, may have uniquely fostered an environment conducive to the development of science as it is recognised today. This environment encouraged not only the asking of questions about the natural world but also the belief in the possibility of discovering unified laws governing it. Therefore, while acknowledging the monumental technological accomplishments of ancient non-monotheistic cultures, it's crucial to recognise that the philosophical underpinnings and methodological approaches that are hallmarks of modern scientific inquiry were significantly shaped and nurtured within the monotheistic traditions.

### **Science in Monotheistic Societies**

One of the most compelling arguments for the significant role of monotheism in the emergence and development of scientific inquiry lies in the explanatory power of the scientific method itself. The scientific method, fundamentally, values the capacity of a theory to elucidate and encompass a broad spectrum of data. A theory that accounts for a wider array of phenomena is considered more robust and credible. In this context, the proposition that monotheism facilitated the rise of science demands more than a mere catalogue of historical coincidences. It requires a thorough examination of the specific advantages that monotheistic belief systems provided to the nascent scientific enterprise. These advantages must not only be identified but also evaluated in terms of their impact on the evolution of scientific thought and practice from the intellectual ferment of ancient Greece, through the intellectual zenith of Islamic scholarship, to the burst of scientific innovation in 16th and 17th century Christian Europe.

At its core, monotheism offered a paradigm within which the natural world became a subject of inquiry rather than a realm pervaded by capricious deities. In the polytheistic frameworks that dominated much of the ancient world, the divine suffused all aspects of existence. Natural phenomena were interpreted as manifestations of divine will, with each event attributed to the whims of specific gods or spirits. This worldview left little room for the

concept of natural laws or secular explanations for natural events. Max Weber highlighted how the shift towards a monotheistic outlook effectively desacralised the natural world, laying a foundational premise for a scientific approach to understanding nature. The critical shift was not merely in reducing the pantheon to a single deity but in transforming the relationship between the divine and the natural world. Monotheism, particularly in its affirmation of a singular, sovereign, and rational Creator, posited a universe governed by consistent laws that could be discovered and understood. This worldview did not deny divine intervention but suggested that such interventions were exceptions rather than the rule within an orderly cosmos that reflected its Creator's rationality.

Furthermore, monotheism inherently promoted the unity of knowledge. This principle is vividly embodied in the Jewish and Islamic concept of monotheism, which asserts the oneness of God and, by extension, the fundamental interconnectedness of all aspects of creation. This doctrinal commitment motivated early Jewish and Muslim scholars to pursue knowledge across a spectrum of disciplines, seeking a unified understanding of the natural world that mirrored the unity of its Creator. Christian thinkers, too, drew parallels between the unity of God (even within the complexity of the Trinitarian concept) and the coherent structure of the universe. Such a perspective encouraged the pursuit of knowledge as a coherent whole, where the investigation of natural phenomena was not a disparate endeavour but a unified quest to understand the divine order.

The assumption that a logical, coherent deity would fashion a world that is equally logical and comprehensible underpins monotheism. This belief in the rationality of the divine mind suggested that the universe, as a product of this mind, could be understood through rational inquiry. The quest for the laws of nature, as pursued by scientists and philosophers of the 17th century, was thus also a quest to discern the divine logic underpinning the cosmos.

Monotheism also contributed to intellectual freedom by fostering an environment where questioning and doubt were permissible. The Abrahamic faiths, at their core, depict a God who welcomes inquiry and does not require human defence. This theological openness has, at its best, allowed for a diversity of thought and inquiry that has been vital for scientific advancement, especially when monotheism has been rightly understood and practiced, as seen in the intellectual flourishing of the Islamic Golden Age.

Lastly, the emphasis on sacred texts within monotheistic traditions has played a crucial role in promoting literacy and the dissemination of knowledge. The reverence for the written word in Judaism, Christianity, and Islam not only facilitated the preservation and transmission of religious texts but also encouraged the recording and sharing of scientific and philosophical ideas.

In summary, the ascendancy of modern science and its associated culture of research owes much to the intellectual climate fostered by monotheistic belief systems. These systems provided the intellectual freedom to explore the natural world, posited a universe governed by rational laws that reflected the mind of a single Creator, and encouraged a holistic pursuit of knowledge. These foundational assumptions underpinned the remarkable advancements in science from the philosophical inquiries of ancient Greece, through the scholarly achievements of the Islamic Golden Age, to the scientific revolutions of early modern Europe. Without the profound influence of monotheistic thought, it is doubtful that the scientific enterprise as we know it today would have come into being.

### **The Ten Plagues as a Case Study**

In the Book of Exodus (*Sefer Shemot*), the narrative of the enslaved Israelites in Egypt transitions dramatically as God intervenes to challenge the oppressive Egyptian regime and its polytheistic underpinnings. This divine intervention, manifesting through the Ten Plagues, serves as a profound case study in the existential and theological confrontation between monotheism and polytheism.

God's intention behind these plagues is articulated through a series of declarations, underscoring the desire for the Egyptians to recognise His sovereignty: "The Egyptians shall know that I am the Lord" (Exodus 7:5), "By this you

shall know that I am the Lord” (Exodus 7:17), “That you may know that there is none like the Lord” (Exodus 8:6), and “That you may know that I the Lord am in the midst of the land” (Exodus 8:18). These statements frame the plagues not merely as punitive actions but as educational tools, designed to reveal the true nature of divine power.

The plagues themselves are a direct challenge to the Egyptian pantheon, each targeting the deities associated with various aspects of nature, such as the Nile’s transformation into blood or the onslaught of locusts. This strategic undermining of Egyptian deities is encapsulated in God’s declaration: “I will bring judgment on all the gods of Egypt” (Exodus 12:12), highlighting the plagues’ role in disproving the existence of these gods.

The rationale behind targeting specific aspects of nature, such as the Nile river, is further elaborated upon through traditional Jewish texts. The Midrash Rabbah asks, “Why were the waters first attacked, and with blood? Because Pharaoh and the Egyptians worshipped the Nile,” illustrating the plagues’ intention to dismantle the Egyptians’ religious convictions directly.

Rabbi Jonathan Sacks provides a broader perspective on the plagues, stating, “The plagues were not merely intended to punish Pharaoh and his people for their mistreatment of the Israelites, but also to show them the powerlessness of the gods in which they believed.” This view aligns with the narrative’s aim to educate both the oppressors and the oppressed about the supremacy of the Israelite God.

As each plague unfolds, a chain reaction is set in motion, with each event naturally leading to the next, illustrating the interconnectedness and unity of the natural world under a singular divine will. This demonstration of divine power not only challenges the segmented, polytheistic worldview but also encourages a monotheistic understanding of existence.

This theological shift from polytheism to monotheism is not presented as merely a victory in religious debate but as a foundational change necessary for the advancement of human knowledge and civilisation. Robert Fuller asserts, “Monotheism is the theological counterpart of the scientist’s belief in the ultimate reconcilability of apparently contradictory observations into one consistent framework.” Similarly, Rabbi Matis Weinberg questions, “Did you ever wonder why, of the many civilisations that flowered through history, only [monotheistic civilisations] developed fundamental science?”

The narrative of the Ten Plagues, thus, represents a dual liberation: the physical emancipation of the Israelites from bondage and the intellectual liberation from a fragmented understanding of the divine. The plagues, in targeting the Egyptian gods, offer a compelling argument for the superiority of monotheism, not only as a theological truth but as a prerequisite for scientific and philosophical advancement.