

THE DEBATE BETWEEN SCIENCE AND RELIGION: EXPLORING ROADS LESS TRAVELED

by *Harold Morowitz*

Abstract. The confrontation between Hellenism and Judaism goes back to the invasion of the Middle East by the armies of Alexander the Great. The differing ideologies, first rationalized by Philo of Alexandria, have emerged repeatedly for the past 2,000 years. The inability to resolve the differences can be traced to the differing epistemologies of religious fundamentalists and scientists with views that can be traced to Karl Popper, Immanuel Kant, and, ultimately, Aristotle.

Keywords: Alexander; constructs; *ding an sich* (thing in itself); epistemology; evolution; Immanuel Kant; Philo; transcendence.

I want to use this opportunity to comment on John Caiazza's article (2005) to explore some of the roads less traveled in the differences between Hellenistic philosophy and Judaic monotheism that have persisted in the debate between science and religion. First, remember that the confrontation goes back to the conquest of Judea by the Hellenizing armies of Alexander of Macedon (356–323 B.C.E.), the original large-scale interaction between the Mosaic tradition and the Socratic-Platonic-Aristotelian worldview. Indeed, the celebrated Maccabean revolt (170 B.C.E.) was a bloody confrontation between Jews, who were rebelling against the Hellenistic lifestyle that was being imposed in violation of their religious law, and the armies of Antiochus the Great, Seleucid King of Syria and ruler of the Hellenizing descendants of Alexander. Thus, the tension in theology has gone on for four hundred years longer than Caiazza states. This important confrontation predates Christianity by at least two hundred years.

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The early intellectual entanglement of Athens and Jerusalem reached a high point in Alexandria shortly after the Old Testament was translated into Greek in the third century B.C.E. In Alexandria, Athens and Jerusalem were able to compete on a somewhat level playing field. Our best example of the interaction comes in the writings of Philo Juddaeus (30 B.C.E.–45 C.E.). Rather than a confrontation, Philo sought an amalgamation of Hellenic philosophy and Judean scripture. Ronald Williamson notes,

The philosophy he had embraced, with enthusiasm, was largely a mixture of Platonism and Stoicism, with Platonism and in particular the Platonic Theory of Ideas contributing the most to his way of thinking. . . . He was therefore confronted with the necessity of reconciling the Greek philosophical ideas and ideals he had accepted with the scriptural religion and morality he had, as a Jew, inherited from his ancestors. In addition, he was faced with the problem of dealing, in a way that satisfied the philosopher in him without denying the beliefs he shared with his fellow-Jews, with statements and passages in the text of the Scriptures which were, in various ways and for various reasons, offensive and unacceptable. It was fortunate for him that the allegorical method of exegesis lay to hand for his use, for it presented him with the perfect tool, handled by him with extreme skill, for deriving philosophical ideas from even the most unlikely sections of the Pentateuch. (1989, 144–45)

Philo was thus important to the Christian church fathers, who early on faced the meeting of the two cities. For the rabbis, the full impact awaited Maimonides' studying Aristotle in Arabic translation over one thousand years after Philo. Philo and his contemporaries were near the beginning of the Athens-Jerusalem dialogue for Judaism as well as Christianity.

Caiazza's rejection of non-overlapping magisteria can be fully endorsed. Theologians and scientists are trying to understand the same universe, and alternative attempts at understanding should not be confused with alternative universes. The current problem in trying to reconcile science and religion is one of *non-overlapping epistemologies*. Science is not necessarily atheistic, and reductionism is not necessarily materialistic, but these truths may not be widely recognized.

It is perhaps best to look first at scientific epistemology, which, in my view, began to be formalized in Immanuel Kant's *Critique of Pure Reason* (1929) and was put into a modern embodiment in Henry Margenau's *The Nature of Physical Reality* (1977). This viewpoint was tempered by Karl Popper's *The Logic of Scientific Discovery* (1959). Margenau notes, "We hold with Kant that epistemology must precede ontology and that epistemology denotes the methodology of the cognitive process" (1977, 81).

Thus, knowing begins with the sensory world, the phenomena, the a posteriori of Kant. The phenomenological is filtered by what the mind brings to sensory input, the a priori of Kant. Note that epistemology begins with mind, the ultimate starting point of science. From the sensory we "construct" a hierarchical series of explanatory devices, starting from

objects and going down to molecules, atoms, particles, quarks, and so forth. Margenau calls these items “constructs” as a reminder that they are constructed by the mind. This process of constructing downward is reduction. The underlying world or lowest level of this construction has been designated the *ding an sich* (thing in itself) by Kant, who does not deny the existence of the *ding an sich* but asserts that it is unknowable. Naive realists assume the reality of the lowest contemporary reductionist level and attempt to construct the world from this reality. Doing so involves the curious assumption that the constructs of the mind are more real than the mind that constructs them. This view may be held by many scientists, but it lies outside the best developed epistemology of science. As noted, the validation of a theory that generates a construct has been developed by Popper. Thus, theory starts with phenomenal data and predicts through its constructs other phenomenal data. The failure to predict correctly is reason to reject a theory. A scientific framework consists of theories that have not been rejected.

Reduction does not imply materialism, nor does it reject the mind; within the Kantian framework it must start with the mind. High-speed computers may introduce novel features in the Athens-Jerusalem discussion: the new approach starts with elements arrived at reductively and works up the hierarchy in an attempt finally to arrive at the mind from below. The epistemological path from mind to mind is thus circular. The upward path is emergence.

There is no reason to assume that science needs to deny the primacy of mind or to accept the naive reality of a *ding an sich* whose existence and nature we are unable to penetrate. We do assume that there is an underlying world independent of the human mind, but this is of the nature of a metaphysical assumption.

Science is social. The sensory experiences that lead to the constructs and validate or refute the predictions must be available to all of the practitioners, who must in the end agree on the experiences. Ultimately science is validated by a vote of the practitioners. (This may be a follow-up to the contentious democracy of Athens.)

In any case, the epistemology of science differs from the epistemology of Abrahamic religions (Jerusalem), which seek to know in a variety of ways. This was recently brought home to me in theologian Philip Clayton’s critique of an essay I had written on panentheism. He wrote,

Although Morowitz is tempted to limit transcendence to the self-transcending human mind, he is also drawn to the possibility of a truly transcendent God (or, as I would say, a truly transcendent moment within the divine nature). He is right, it seems to me, to find himself drawn in this direction. After all, a central feature of the self transcendence of the human mind, stretching back to the dawn of species and the dawn of religion, is to find oneself confronted with (at least the idea of) a force that is greater than oneself and greater than the world as a whole. The theistic

traditions hold this force to be genuinely transcendent—a Creator and not just the creation of our minds.

Morowitz's current epistemological commitments, however, rule out two of the three ways such being might be known. He is skeptical of metaphysical theories about the divine, which conflict with certain Kantian assumptions that he holds, and of theological reflections within the context of specific religious traditions. Perhaps he believes that the latter are undercut by skepticism concerning the historical origins of these traditions. Both dismissals strike me as overhasty. Moreover, one would have expected Morowitz to be open to the third classic source of knowledge of the divine: knowledge through direct experience, or "intuitions of [genuine] transcendence" (to modify his phrase), which are part of the mind's experience. In any event, there is something about panentheism that rests uncomfortably under the shackles of immanence alone, that refuses to be satisfied by subordination to the strictures of the self-transcending human mind. (Clayton and Peacocke 2003, 260–61.)

The first of Clayton's categories, "metaphysical theories about the divine," requires the same sort of analysis as the validation of scientific knowledge. God becomes a construct whose validity must be tested in the phenomenological world. Clayton's second source of knowledge, "the historical origins of these traditions," must include (1) Moses on Mount Sinai, (2) Paul on the road to Damascus, and (3) Mohammed hearing the sound of the bell. These "historical events" become subject to the epistemological criteria of history. The events are unique, not subject to replication, and not fulfilling the social criteria. Clayton's third criterion, "knowledge through direct experience," is restricted to those who have the experience, according to William James (1997). This criterion is not fully social, either. Thus, epistemological gaps remain between Athens and Jerusalem.

The approaches of emergence suggest that the scientific epistemology may not be complete. It is also not clear that theological epistemology has exhausted its possibilities, so some future narrowing of differences may be possible.

For the first six hundred years of the Common Era, the discussion of Athens and Jerusalem was largely the province of the church fathers. Because they tended to identify Athens with the philosophy of Plato, whose epistemology was not highly dependent on the phenomenological shadows on the wall of the cave, there was less conflict between science and religion.

In Baghdad and Sura from about 800 C.E., the rich age of Islamic scholarship was accompanied by the translation of the great works of Athens into Arabic. In this period the Hebrew Bible also was translated into Arabic. Once again Athens and Jerusalem were facing each other, but now it was also the Athens of Aristotle rooted in the phenomenology of that great Athenian biologist-philosopher. Baghdad was an intellectual center of Islam, Christianity, Zoroastrianism, Judaism, and diverse views including Buddhism and other Eastern views.

The rise of epistemology can be seen in the work of Saadia ben Joseph (892–942), Gaon of Sura. “Saadia describes the three natural sources of knowledge; namely the perception of the senses, the light of reason, and logical necessity, as well as the fourth source of knowledge . . . the ‘veritable revelation’ contained in the scriptures” (Bacher 1916, 584). Thus, the fourth source of Saadia points to the knowledge of Jerusalem: Abrahamic religion. The first three sources point back to the Athens of Aristotle and point forward to the Königsberg of Kant.

The thought of Baghdad perhaps came to its peak with the Arabic philosopher Avicenna (980–1037). The radical change to orthodoxy is associated with al-Ghazali (1058–1111), as noted by Richard Rubenstein:

His book attacking both Aristotle and Avicenna, *The Incoherence of the Philosophers*, “broke the back of rationalistic philosophy and in fact brought the career of philosophy . . . to an end in the Arabic part of the Islamic world.” A bit later, Muslim Spain saw a last resurgence of Aristotelian thinking in the remarkable ward of Averroës and Maimonides, but after a fundamentalist North African regime conquered much of Spain, both philosophers found themselves in exile. From this time forward, gripped by what one commentator calls a “slavish traditionalism,” the Muslim world turned definitively away from scientific inquiry. So did the Jewish world, which saw Maimonides’ Aristotelian masterpiece, *The Guide to the Perplexed*, denounced as heretical by the same rabbis who applauded his legal and moral works. (2003, 85–86)

The Athens-Jerusalem dialogue then moves to Western Europe, climaxing in the writings of Thomas Aquinas (1225–1276). There was in the West some sympathy with the al-Ghazali perspective, and in 1210 the first of several bans was placed on Aristotle’s works at the University of Paris. Thomas’s views on Aristotle were condemned in Paris in 1277. In the intervening years, however, Thomas managed to form a compromise that allowed many thinkers to accept Aristotle and the limiting requirement of faith. The result led to the Renaissance and several hundred years of uneasy peace between Athens and Jerusalem. Recall that it took 350 years for the Roman Catholic Church to remove Galileo’s work from the restricted list. The whole saga of the emergence of Thomism is told in Rubenstein’s fascinating book *Aristotle’s Children* (2003).

The Athens-Jerusalem case was reopened in the nineteenth century when the geological dating of the age of the earth and the Darwinian theory of evolution came into sharp confrontation with the book of Genesis. That battle (which did not involve the Roman Catholic Church as a main player) still goes on, with scientists in opposition to fundamentalist Protestants, Jews, and Muslims. Again, the varying epistemologies make the resolution of the problems very different.

Caiazza’s arguments for techno-secularism are not convincing. I do think that the steam engine, the telegraph, and the industrial revolution provided a setting in which scientists had a level of prestige that gave credibility to the Darwinian revolution, but I do not see a continuing change of

religious perspective along with the enormous growth of science in the twentieth century. Most Americans still do not believe in evolution, and the Scopes trial seems to be repeated every half century or so. Indeed, some American presidents have expressed doubts about the theory of evolution.

I suspect that the vast majority of believers in various religions accept technologies without questioning the effect of the theoretical roots of technology on the basis of theological thinking. These believers seem to find this a case of non-overlapping magisteria. Over the last fifty years the rise of a broad range of technologies has been accompanied by a worldwide rise of fundamentalism in the Abrahamic religions. The suicide bomber is a frightening example of combining technology and belief.

Technology has had an enormous effect on contemporary life. Engineering has largely, but not entirely, used the epistemological foundations of science. Nevertheless, I see little evidence that techno-secularism has triumphed over alternative ideologies in the global conflicts, as noted by Samuel P. Huntington (1996) and F. S. C. Northrop (1987). Resolving the approaches of Athens and Jerusalem is still an open issue.

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