

## THE RELIGION-SCIENCE DISCUSSION AT FORTY YEARS: "REPORTS OF MY DEATH ARE PREMATURE"

by *Philip Clayton*

*Abstract.* The startling success of the religion-science discussion in recent years calls for reflection. Have old walls been broken down, old antagonisms overcome? Have science and religion finally been reconciled? Or is all the activity just so much sound and fury, signifying nothing? Postmodern equations of scientific and religious beliefs disregard a number of enduring differences that help make sense of the continuing tensions. Yet the skepticism of authors such as John Caiazza is also ungrounded. I describe five major types of approaches that are being employed in the recent literature. These methods have led to a deeper understanding of the commonalities between science and religion and have produced new productive partnerships between them.

*Keywords:* John Caiazza; ethics and values; phenomenology of science and religion; postmodernism; religion-science debate; research programs; science and metaphysics; sociology of science; spirituality; theory of knowledge.

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The twenty-first century has dawned with the massive showering of attention upon the boundaries between science and religion. In the centuries since Francis Bacon, science, the former teenager, has grown into the full powers of adulthood: calm, sometimes cocky, in its powers; comfortable with the riches and the prestige it now commands; sometimes lean and fit, at other times a bit pudgy around the middle, as it moves forward confidently to face tomorrow's challenges. Theology, by contrast, many would say, has grown old, like a retired priest: somewhat lame and hard of hearing, weakened by the usurpation of his former powers, he now rests in his rocking chair at the edges of the action, no longer the center of attention,

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sometimes a little melancholy, but ready to reminisce and to share stories with those who will still listen.

Or so it seemed until recently. Something has happened in the last few decades. One notices a new blaze of attention to the frontiers between science and religion: a series of sorties back and forth between the camps, with new treaties and joint undertakings arising between these two great projects of the human spirit. How are we to understand this new trampling of boots in both directions—platoons of popular writers, armies of media producers, the *paparazzi* of science and religion? Frontiers are in the news, but now they are the frontiers of trade between two kingdoms whose commerce is growing. Our newspapers and academic journals, and now even our movies, highlight those scientists and religionists who now stand proudly on the wall that formerly divided the two kingdoms, not unlike those students who stood atop the Berlin Wall on that night in November 1989, champagne bottles raised above their heads, celebrating the inconceivable: that the two cities might again be united. Of course, frontiers still confront us, but now they are the frontiers of unexpected intercourse, cross-fertilization—the uncrossable being crossed.

*Zygon*, the founding journal for the contemporary religion-and-science discussion, approaches its fortieth birthday, and, like an adult facing that frightening milestone in life, decides that it is time to take stock. What of the whole religion-and-science discussion? Now that it is no longer a novelty, what judgment should be passed on the flurry of recent books, articles, and conferences? Is the field “threadbare” or “bankrupt,” as John Caiazza (2005) thinks? Is it full of sound and fury, signifying nothing? Do the monographs published in the last, say, six years begin to sound like the “same old, same old”?

Between the lines of *Zygon's* call to debate I read a deeper question: Is it time for a fundamental reorientation, a reopening of core assumptions? Thomas Kuhn (1970) taught us that revolutions in knowledge soon become “normal science.” Yet isn't there something strange, even anomalous, about the idea of “normal religion and science”? Do not science and religion remain two of the most fundamentally opposed forces of the modern world? The warfare metaphor may no longer be apt, but surely the tension between the two opposing camps has not just evaporated into thin air. Could it be that the gurus, traveling itinerant speakers, and media stars of religion-and-science have too quickly turned what should be a continual scandal into business as usual?

#### ANALYZING THE CURRENT SITUATION

Let us review briefly why the very idea of science-religion discourse should continue to be disturbing. None of the following four reasons justifies drawing an absolute dichotomy between science and religion, but they do

stand in the way of the “shotgun weddings” that are becoming increasingly popular in the postmodern climate.

First, the perceived authority of these two “magisteria” (see Gould 1999) is very different. In liberal circles and major universities around the world, the natural sciences are accorded an unrivaled authority as knowledge-producing activities, whereas religion falls under the category of “lifestyle choices”—alongside matters such as choosing one’s wardrobe, cuisine, and hobbies and one’s sexual preferences. Now, it is true that fundamentalists reverse the valences, ascribing to their scriptures absolute authority and cavalierly dismissing wide swatches of scientific results with no apparent discomfort. The net effect, however, is the same: neither liberals nor conservatives will countenance an overquick identification of science and religion.<sup>1</sup>

On one point Caiazza is right: Technology has much to do with the authority of science. The high priestess’s authority is always related to the miracles we see in her work, and if the means and powers behind her works remain a mystery to us, that will only increase her authority in our eyes. Four-year-olds watch the wondrous shapes bouncing across their computer screens; teenagers experience miraculous powers and detail in online gaming; successful professionals know that their success would be impossible without cutting-edge technology; grandmothers marvel to see their computers printing labels for the next club mailing. Few of these users have more than a foggy notion of just how technology performs these miracles, but they know the name of the god who produces them: Science. Just as, with the help of his god, Yahweh, Elijah humiliated the prophets of Baal with powers they could not match (1 Kings 18), so is this god absolutely unrivaled. “By their fruits ye shall know them” (Matthew 7:16 KJV), and under this widely accepted religious criterion, science has won the battle for authority hands down.

Second, this cultural observation is buttressed by a sociological one. The convergence that characterizes science supports the development of common institutions and forms of collaboration that are impossible in the religious world. Close encounters with other religious traditions are not always humbling to devout believers, but they often are sobering. Whatever your degree of authority within your home religious community, when you come to the Parliament of the World’s Religions you are faced with others whose authority and claim to truth is equal to your own. In the absence of shared criteria of evaluation—for the other leaders do not acknowledge the grounds that buttress your tradition’s authority and, in fact, cite similar grounds in support of their own—differences cannot be reconciled. At best there may be mutual respect, but arbitration between truth claims is impossible. How different things are in science! Scientists repeatedly report the experience of traveling to vastly different cultural contexts and meeting with people who share the same understanding of

the theories and experiments on which they are experts. Even persons whose language, customs, food, and religious convictions are startlingly foreign comprehend the empirical data and theories as if they had been educated in the same laboratory or classroom. Sociologically the existence of *the* worldwide community of science contrasts sharply with the deeply lodged incommensurability between religious beliefs and practices.

Nancey Murphy and I, following Ian Barbour, have stressed the analogies between research programs in theology and in science (Clayton 1989a; Murphy 1990; Barbour 1974). I stand by these analogies, but the disanalogies also should be acknowledged. It is not unusual to find published scientific papers by half a dozen coauthors, and papers in high-energy experimental physics may have as many as fifty authors listed. By contrast, to find a research article in theology written by even two coauthors is a relatively rare occurrence. The joke is frequently told that wherever four theologians are gathered, at least five theologies will be found. Indeed, within Protestantism this principle of theological divergence is elevated to the status of a defining principle (something similar could be said of Rabbinical Judaism). By following one's conscience and the "inner light," by being prepared always to say "Here I stand, I can do no other," as Martin Luther did, we splinter incessantly, forming new churches and new denominations, such as the 2,000-plus Baptist denominations in the United States—or we merely move down the road to the next Protestant church when our opinions begin to diverge too greatly from those in our current church.

Third, we all are aware of challenges to the objectivity of scientists and their claims to knowledge; indeed, some of these attacks are repeated in the pages of this symposium. As much as claims for absolute objectivity have become suspect, however, I daresay they undercut the science-religion distinction rather less than Caiazza and others believe. Could it not be that some of the enduring tension between science and religion results from an actual epistemic authority on the part of science? As heretical as that statement may sound, there is something about predicting experimental outcomes to the precision of three decimal places that is hard to compete with. Admittedly, such accuracy, while possible for closed systems in physics, is not possible in predicting the outcome of selection pressures on a species, much less the outcome of complicated human decision-making processes. But is that not the point? Restricting the domain of knowledge to physical or chemical systems allows for precise, testable knowledge claims of a sort undreamed of in humanistic psychology or literary theory. My thesis is not that intuitive or "hermeneutical" knowledge is invalid but rather that the highest standards for making and testing assertions *in any field of human inquiry* are to be found in the physical sciences. This epistemic difference may not be popular today, but denying its existence would be hard.

Fourth, and in summary, science and religion are *at best* equal yet different. Consider how divergent are their strengths. The religious or spiritual attitude is holistic, self-involving, and integrative. It helps one to construe one's life in a meaningful way (Clayton 1989a, chaps. 3–5); it offers “personal disclosure value” (Holmes 1971, 5ff.); it is not limited to what is empirical, checkable, and falsifiable but extends as far as the human imagination goes. It refuses subordination to any specified domain or any set canon of methods and procedures. By contrast, the scientific method allows one to abstract from the chaotic details of experience as they affect us. By focusing on one particular domain, a given science is able to produce a more systematic and more rigorous analysis, prediction, and explanation of that domain than would otherwise be possible. Relative to a particular interest, then—say, predicting changes in the distribution of mass and energy or understanding the structures and functions of organisms as they seek to maximize reproductive success—there is no competing with the science in question.

In light of these differences, what should one say concerning the core questions of this symposium?

#### THE CAIAZZA ESSAY

What is disappointing about Caiazza's approach in “Athens, Jerusalem, and the Arrival of Techno-secularism” (2005)—and he is not alone in this weakness—is that he treats the quest for integration as impossible from the start. Persons working with scientific and religious presuppositions, it seems, cannot talk directly to one another—and, apparently, secular and sacred worldviews cannot, either. Caiazza describes “techno-secularism” as if the seductive powers of technology, and its support for a secular worldview, are irresistible, yet he does not describe religion as having any commensurate means for undercutting secularism's authority or for establishing an appropriate authority of its own. As provocative and intriguing as the piece may be, it offers the reader no systematic analysis, no hint of where the solutions might lie. Caiazza offers no treatment of the status of scientific knowledge and no analysis of the common assumptions, or even the common questions, that are shared between science and religion. The article ends on a poetic note by evoking a flower, but poetic pictures hardly help to guide us out of the impasse.

Worse, at the one point where Caiazza discusses a valuable resource for making progress—the religious phenomenology of William James—he dismisses James's analysis as a crass reduction of religion to consumerism, relativism, and market forces. Ironically, the James of *The Varieties of Religious Experience* ([1902] 1999) in fact offers the same sort of mystical appreciation of a Something Beyond that Caiazza himself hints at in his closing lines. Indeed, since Caiazza shows no interest at all in philosophical reflection either on the conditions of knowledge or on the metaphysics that

underpin science and religion, what positive resource *might* he draw on other than phenomenological analysis? Clearly, we need to find some more positive means of proceeding than Caiazza offers if we are to make any progress on these issues.

#### POSSIBLE RESPONSES

What are the approaches that offer some hope for making progress on the impasse? I consider five: the phenomenological, the epistemological, the metaphysical, the ethical, and the spiritual.

*Phenomenological Approaches.* To be phenomenological means to describe the phenomena as they are seen, measured, or experienced; comparative phenomenologies explore similarities and differences between the careful descriptions of two or more distinct types of experience. Some of the most productive comparative treatments of science and religion have been phenomenological.<sup>2</sup> In books edited by W. Mark Richardson, Gordy Slack, Philip Clayton, and Jim Schaal, leading scientists who are also religious describe the similarities and differences between their experiences as practitioners in both fields (Richardson and Slack 2001; Clayton and Schaal in press). Nobel laureate Charles Townes (2004) gives a particularly clear description of these differences. Scientists and religious persons seek truth; both groups can adopt an experimental attitude; both can be critical about their beliefs, just as both can be dogmatic; and both can (and often do) have an attitude of awe and reverence for their subject matter. Indian physicist George Sudarshan draws similar conclusions: "In the Hindu tradition . . . the spiritual quest is in fact not distinct from the scientific, aesthetic or, for that matter, any academic pursuit" (2002, 252). He also writes, "In my own life, I have been privileged to experience the joy and ecstasy of discovery in both the scientific and spiritual domains. In such moments, the distinction between scientific and spiritual paths vanishes for me. In fact, the feeling is identical for both" (p. 251).

If the *practice* of these two domains reveals such significant similarities, can they ultimately be as sharply opposed as is sometimes claimed? Or may there not be more of the "sacred" attitude in science, and more of the "secular" critical mindset in religion, than the separationists have acknowledged? For some, the phenomenological parallels will in the end prove more convincing than the more complex comparisons in the next two approaches.

*Epistemological Approaches.* The parallels are not merely psychological or phenomenological. It can be shown that the nature of searching for and defending knowledge claims in science and religion is much more similar than was once thought. Both spheres of activity, as the followers of Imre Lakatos have argued, involve research programs that contain a "hard core" of central beliefs and a series of "auxiliary hypotheses" that in turn give rise

to the specific predictions and tests relevant to that particular research program. Disanalogies do in fact exist (see Clayton 1989b), but these do not invalidate the close epistemic parallels that also exist.

There is a reason for these epistemological similarities: all rational inquiry shares certain features, as C. S. Peirce's theory of inquiry demonstrates. "Discourse aimed at understanding" (Habermas 1984, chap. 1) requires participants to give reasons for their views, to allow criticism and open discussion of their views, and to commit themselves, at least in principle, to following the force of the better argument. Of course, inquiry in different fields employs different criteria, and moving between diverse disciplines is never easy. Nonetheless, the commonalities involved in rational discourse belie claims for complete incommensurability. Something similar can be said for different religious communities. Even when their truth claims cannot be directly compared, and even when no external criteria allow for a neutral comparison between them (no "God's-eye view," so to speak), one can still detect and explore significant family resemblances.

*Metaphysical Approaches.* This is not the place to engage in detailed metaphysical argumentation, but the list would not be complete without noting that the various schools of thought in the science-religion debate—physicalism, materialism, naturalism, dualism, emergentism, theism, and atheism—actually represent competing positions within long-standing metaphysical debates. Resolving such debates is no easy matter. Still, arguments for one position and against another can be formulated, and careful treatments exist in the literature for one or another conclusion. (For example, for a summary of the recent debate on emergentism see Clayton 2004.)

The key point is that the transition to metaphysical discussion is smoother, more natural, and perhaps more inevitable than is often realized. Earlier I cited Townes's defense of close phenomenological similarities between science and religion. In the same essay, however, he moves beyond phenomenology to give metaphysical reasons for the parallels: "There are two fundamental reasons why I believe that religion and science must be parallel and must interact. One is that, if there is purpose and meaning in the universe, then the purpose must be related to its structure—and in fact must determine its structure. The second is that in both fields we use all our human abilities in a quest to understand the world we inhabit" (2004, 308). The movement back and forth between scientific and metaphysical reflection is more extensive and more natural than the metaphysically phobic twentieth century was willing to acknowledge.

*Ethical Approaches.* Even when a common metaphysical foundation cannot be found, it is often possible to agree on widely shared statements of value. The medical staff, the patient, and her family may agree on the importance of her quality of life in determining when to engage in medical

interventions and when to forsake them, even though the individuals involved may be religious or antireligious, humanist, Christian, Muslim, Buddhist, or agnostic. The deeper reasons people give for accepting obligations toward the environment and toward human beings, other animals, and future generations may vary enormously, yet they may agree on the urgency of the obligations. Nowhere is this sometimes-mysterious convergence of values more evident than in the environmental movement. Scientists, Native Americans, ecofeminists, the traditionally religious, and the nonreligious draw on metaphors and value statements from a wide variety of traditions, sharing reasons and arguments for action even when no deeper metaphysical agreement is evident. Even if science is nothing more than a series of methods and the theories, data, and technologies that result from applying these methods, a wide variety of ethical values can nonetheless supplement science and guide its application. This surely is a fruitful link between the two fields, one whose efficacy is hard to deny even for the most hard-nosed skeptic.

*Spiritual Approaches.* It is easy to criticize use of the term *spiritual* for being too broad and vague. But, in the face of skeptical voices such as Caiazza's, this breadth is perhaps a virtue. A dimension of awe, wonder, and reverence certainly underlies both scientific and religious activity and is essential to both (Goodenough 1998). Those who acknowledge the common spiritual source of both of these basic movements of the human spirit are hard pressed to treat them as absolutely dichotomous. The common spirit in the two core quests for understanding provides grounds for optimism that we will be able to recognize and to express their similarities. Sudarshan gives powerful expression to this conviction: "The Hinduism of Central and South Asia believes instead that God manifests Himself, or Herself, in many ways and in many contexts. My tradition affirms that any spiritual search, whether academic or not, is bound to lead to God. Within Hinduism, there is nothing which is not sacred. God is not an isolated event, something separate from the universe. God is the universe" (2002, 250).

#### CONCLUSION

Sudarshan's standpoint is voiced by numerous other authors. The human scientific quest and the human spiritual quest are certainly not identical; they often manifest themselves in separate sorts of activities that use different tools and methods. But the differences must not be overstated; the two are not at heart opposed. The enduring value of the science-religion discussion is to have begun with the two activities as separate and to have shown why, at a more fundamental level, they must be viewed as complementary. Each quest needs the other, and together they offer deeper insights than either one could on its own.



In this symposium, which aims to take stock of the science-religion discussion at age 40, we have examined reasons for being skeptical about “shotgun weddings” between the two partners. Nonetheless, I believe the treatment has undercut Caiazza’s strangely skeptical tone about the entire endeavor. At least five approaches have the potential to build bridges between the two “cultures,” and numerous scholars are already engaged in construction projects using one or another of the five approaches. It is good to step back from the crush of everyday activity in the field to ask some fundamental questions about whence it has come and where it is going. After taking stock in this manner, however, it is most productive to step back again onto one’s particular construction site, take one’s chosen tools again in hand, and contribute in whatever way one can to the ongoing building project.

#### NOTES

1. Although evangelicals—by far the larger category in the United States—are often lumped together with fundamentalists on this matter, and although the rhetoric of their discourse sometimes supports such an interpretation, the truth is that they are far less willing to dismiss scientific support than is sometimes claimed. Consider Nicholas Wolterstorff’s *Divine Discourse* (1995): although Wolterstorff insists on the possibility of miracles of healing and of God’s speaking directly to individual believers, his examples also envision an important role for doctors and even psychotherapists in assessing the veracity of miracle claims. One thinks of the related position of John Locke, that it is possible that God has been revealed in one or another scripture, but one still needs reasons for thinking—or at least reasons to confirm—that such a revelation has actually taken place.
2. For explorations of the phenomenological approach to religion see Dupré 1979 and Twiss 1992. For a basic phenomenological essay on science and religion see Clayton 1990.

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