TAKING SCIENCE SERIOUSLY WITHOUT SCIENTISM: A RESPONSE TO TAEDE SMEDES

by Ian G. Barbour

Abstract. In responding to Taede Smedes, I first examine his thesis that the recent dialogue between science and religion has been dominated by scientism and does not take theology seriously. I then consider his views on divine action, free will and determinism, and process philosophy. Finally I use the fourfold typology of Conflict, Independence, Dialogue, and Integration to discuss his proposal for the future of science and religion.

Keywords: Karl Barth; creationism; determinism; divine action; free will; linguistic philosophy; logical positivism; Arthur Peacocke; John Polkinghorne; process philosophy; scientism; Taede Smedes; Alfred North Whitehead

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In "Beyond Barbour or Back to Basics? The Future of Science and Religion and the Quest for Unity" (2008) Taede Smedes raises some basic questions about my writing and that of others participating in the dialogue between science and religion in recent years. His essay is important because it recommends a future for the dialogue very different from that sought by the authors whom he criticizes. I respond first to his central thesis that we have been dominated by scientism and do not take theology seriously, then consider his specific comments on divine action. I then turn to his criticisms of process philosophy as a common metaphysics for interpreting both science and religion. I attempt finally to evaluate our disagreements in the light of my fourfold typology.

Smedes's main thesis is stated thus:

> I look at the quest for integration and unity of science and religion that underlies much of the contemporary field of science-and-religion and that was stimulated particularly by Barbour's efforts. I argue that his quest echoes the logical positivist

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vision of unification and has a strong bias toward science as the sole source of rationality, which does not take theology completely seriously. (p. 237)

It is true that the logical positivist vision of unification had "a strong bias toward science as the sole source of rationality." Its goal was to unify the theories of the diverse scientific disciplines. Most of its exponents defended reductionistic physicalism. They said that any cognitive claims that could not be verified by science should be dismissed as meaningless. But my goal is a very different kind of unification, an integration of science and religion that preserves the integrity of each. The fact that I pointed to *similarities* between the methods of scientific and religious inquiry does not mean that I do not take the distinctive character of theology seriously, since I have discussed at considerable length the *differences* between them (Barbour 1997, 137–61). Smedes does not mention that I have advocated a *theology of nature*—which starts with interpretations of historical revelation and religious experience and asks how they may need to be reinterpreted in the light of scientific discoveries—rather than a *natural theology* that seeks the derivation of theological conclusions from the study of nature alone.

I hope that I have not been guilty of making science the criterion of rationality. In a section titled "Diverse Types of Explanation" (Barbour 1997, 140–41), I summarized Philip Clayton's 1989 volume on the contextual character of explanations and the use of different types of rationality in differing contexts. More recently Wentzel van Huyssteen (1999) has explored "the many faces of rationality" in diverse spheres of human life. Moreover, for the Christian the conviction that God is rational is not based primarily on an understanding of scientific rationality.

Smedes holds that scientism has been implicit in Western thought since the eighteenth-century Enlightenment.

I propose to call this scientific way of thinking *scientism as a cultural mode of thinking*, which also affects the way we deal with religious and theological notions. One could call it a tacit faith or basic trust in science, an incorporation and internalization of scientific modes of thinking in our everyday-life mode of thinking—or, alternatively, the accommodation of our everyday-life mode of thinking to a scientific mode of thinking. (p. 242)

Smedes uses the term *scientism* in a very broad sense that includes "a cultural mode of thinking" and "a basic trust in science" that is "tacit" or "implicit." Along with many other writers I use the term in a more specific sense to include two kinds of assertion that I believe need to be distinguished: (1) the epistemological claim that the scientific method is the only path to knowledge, and (2) the ontological claim that matter is the fundamental reality in the universe (materialism). A challenge to the first (epistemological) claim weakens the second (ontological) claim. If science is selective and abstractive in what it can study and has inherent limitations (denying the first claim), it is clear that materialism is a philosophical

assumption and not a conclusion proven by scientific investigation (Barbour 1997, 78).

I would say that *philosophical naturalism* (also called metaphysical or ontological naturalism) is a form of scientism, but *methodological naturalism* is not. Science can only study relationships among events in nature and is inherently unable to say how they might be related to anything beyond nature (see chapters by Howard van Till and Nancey Murphy, and opposing views by Alvin Plantinga and William Dembski, in Pennock 2001). In 2005 the school board in Dover, Pennsylvania, maintained that evolutionary theory entails atheism and should be presented in the classroom only when accompanied by an alternative, intelligent design (ID). After long court hearings judge John Jones ruled against the school board, concluding that ID is based on religious faith rather than genuine science and arguing that methodological naturalism is a ground rule of science and should be distinguished from philosophical naturalism (Jones 2005).

Smedes asserts that John Polkinghorne, Arthur Peacocke, and I all have been infected by cultural scientism transmitted specifically by logical positivism.

> If it is true that cultural scientism is pervasive in Barbour's, Polkinghorne's, and Peacocke's approaches, and if we take into account the influence these three scholars have had and still have on the science-religion dialogue, it seems to me that, contrary to what we might expect, the context in which the contemporary dialogue takes place is very much determined by scientistic presuppositions.
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> This scientism is a remnant from logical positivism. . . . It may be partly explained by the fact that before turning to theology they received their original training in science, in an era in which the influence of logical positivism upon science was strong. (pp. 253–54)

Smedes has made similar criticisms in his book *Chaos, Complexity and God: Divine Action and Scientism* (2004), devoted entirely to the work of Polkinghorne and Peacocke. I believe that he greatly overestimates the influence of the logical positivist movement on scientists fifty years ago. When we were doing our first interdisciplinary writing we were reading a very different group of philosophers of science, including Thomas Kuhn, who claimed that all data are theory-laden and all theories rest on philosophical assumptions. All three of us were impressed with the role of imaginative metaphors and models in both scientific and religious thought, a far cry from positivist views.

Smedes refers to my discussion of Ludwig Wittgenstein and his followers, the linguistic philosophers, who portray a variety of incommensurable languages serving contrasting functions in human life. I had said that we cannot remain content with a multiplicity of unrelated languages if they are languages about the same world, as critical realism holds. Smedes concludes: "Here again is a faint echo of logical positivism, especially concerning its obsession with a single language" (p. 251). I have never maintained that the attempt to relate scientific and religious languages to each other

requires reduction to a single language, especially not to a scientific one. I am unable to hear the "faint echo" that Smedes hears.

Smedes says that particularly in our discussion of divine action we have failed to take theology seriously:

> These days it seems that more scientists are involved in the field than theologians. Barbour, John Polkinghorne, and Arthur Peacocke, some of the most influential scholars in the field, were all actively engaged in science before turning to theology. Their personal religious conviction and questions are present throughout their engagement with the interaction of science and theology. Yet, reading their books, it becomes obvious fairly quickly that they approach those theological questions as scientists. . . . In their attempts to understand divine action, they are looking in the wrong direction and thereby not taking theology seriously. (pp. 245–46)

What does *taking theology seriously* require? It certainly requires looking in considerable detail at both the methodology of theology and the doctrines of a particular historical tradition, as I think all three of us have done. Does it require uncritical acceptance of those doctrines in their classical form? Not if theology is a human enterprise interpreting what is taken to be God's revelation in the experience of a historical community. Smedes emphasizes the presence of cultural and ideological assumptions in the scientific enterprise but says little about their role in the theological enterprise. As an example I would note that the Nicene and Chalcedonian creeds in the fourth and fifth centuries expressed an understanding of Christ using the concepts of Greek philosophy (such as one "substance" and two "natures") that have little meaning for people today. Christian theology is not a static deposit of dogmas but an ongoing process of reinterpretation and reevaluation in new contexts, including that of modern science, while trying to remain faithful to the central message of the gospel.

The issue of free will and determinism has indeed been prominent in recent discussions of divine action. Incompatibilists hold that human freedom is incompatible with complete determination by the laws of nature or absolute determination by God. Compatibilists hold that human freedom is compatible with both natural and divine determinism because they refer to different and distinct orders. Immanuel Kant asked us to distinguish between the noumenal and the phenomenal orders. For linguistic philosophers, freedom and determinism are assertions in incommensurable languages. For Thomists, God's determination as primary cause is on a totally different level from secondary causes including human choices.

These questions and the status of "laws of nature" were extensively debated in the series of volumes sponsored by the Vatican Observatory and the Center for Theology and the Natural Sciences in Berkeley, California, to which Smedes refers. An excellent summary has been given by Wesley Wildman (2004). Polkinghorne and I were incompatibilists, and Peacocke was a compatibilist. Most (but not all) of the incompatibilists invoked the indeterminism of nature (as seen in quantum theory, complexity theory,

and some interpretations of chaos theory) to allow room for divine action, as Smedes points out. The compatibilists, by contrast, said that nothing of theological importance is at stake whether nature is deterministic or not.

It is not surprising that Smedes is a compatibilist, in keeping with his favorable view of linguistic philosophy. He emphasizes divine transcendence in much the same way as exponents of the distinction between primary and secondary causes do (though he does not use that terminology). The great strength of his position is that it avoids making God a force like natural forces acting in the world and competing with them in influencing events. All of the participants in the divine-action discussions denied supernatural intervention in violation of the laws of nature, but some claimed that quantum indeterminacy alone provides the flexibility needed for God to act in the world (Russell 1998). If God chose one among the potential events which quantum laws only predict probabilistically (such as when a radioactive atom will decay), it would not violate those laws, and no energy input would be required because the events have equal energy. But it seems to me reductionistic to seek explanations in the quantum world at the lowest level in the hierarchy of levels. Peacocke also criticizes bottom-up causality from the quantum level and speaks instead of top-down causality from higher levels. Process thought does not have this problem because it says that God has a role in the unfolding of events at all levels, but it portrays God's role as different from the kinds of causal influence that science studies.

Smedes makes another distinction about which I am more dubious. In defending divine omnipotence he says that God can do anything that is *logically possible* (that is, not logically self-contradictory), even if it is not *physically possible*. It seems to me that this distinction breaks down if our universe reflects God's intentions (however many other universes may be logically possible). Further, we believe that God acts in accordance with God's nature because to do otherwise would be a violation of God's character, not a logical contradiction. This is a speculative question on which there has been extensive theological debate, but the answer does not seem to me clear enough to give it a central place in a critique of recent writing on divine action.

Smedes offers particular criticisms of my use of process philosophy.

> It is clear that for the later Barbour the underlying drive to relate science and religion is a quest for unity, a unified view of the world. To achieve such a unified worldview, categories common to both disciplines should actively be sought. . . . Barbour employs the metaphysical, panentheistic framework of process philosophy, which constitutes a complete metaphysical cosmology that encompasses both science and theology and harmonizes the two. . . . Barbour aims to unify and harmonize science and religion via process philosophy. Although there is a categorial difference between Barbour's approach and logical positivism, especially concerning the role of metaphysics, I believe that there is at least a resonance between them. (pp. 250–51)

Apart from the "resonance" with logical positivism (which seems particularly dubious granted the positivists' aversion to metaphysics), this has indeed been my goal. Perhaps it seems to give to philosophy too large a role in mediating between science and religion, but I would say that philosophical assumptions are inescapable in theology. Thomas Aquinas was influenced by Aristotle, for example, and Protestant thought by Kant. Moreover, I have drawn primarily not from Alfred North Whitehead himself but from process theologians such as Charles Hartshorne and John Cobb who have reinterpreted and modified some of Whitehead's ideas in accordance with their understanding of the Christian tradition.

The danger of using any comprehensive metaphysical system is that it may fail to do justice to the diversity of human experience. Theological doctrines (or religious beliefs) are only one component of the religious life of a community, a life that includes ethical norms, communal worship, and individual religious experience. Process philosophy often sounds like a set of speculative abstractions expressed in esoteric terms. Process theologians, however, usually use more familiar concepts and often wrestle with the concrete dilemmas of life in the world. I have tried to *adapt* rather than *adopt* Whitehead's ideas, suggesting neo-Whiteheadian modifications that would allow for stronger representations than he provided for God's transcendence, the continuity of human selfhood, and the diversity among entities in the world (for example, Barbour 1997, 290). I have recently explored some of these ideas further in comparing my views with those of Peacocke (Barbour 2008).

In his concluding remarks Smedes makes it clear that his skepticism about the search for integration is based not only on his misgivings concerning metaphysical systems but also on his understanding of the contextuality of science, religion, and the dialogue between them.

> This means that in my work in science-and-religion I have abandoned grand visions of unification and set myself the modest goal of reaching understanding between theologians and scientists. The longer I work in the field, the more I become convinced that perhaps it is even inappropriate to speak of *the* field of science-and-religion, even though for simplicity's sake I have done so here. Every spatiotemporal context needs its own dialogue. . . . (p. 254)

In support of the contextuality of science Smedes says that the historian David Livingstone is correct in emphasizing the "local, regional, and national features of science," so that "What passes as science is contingent on time and place; it is persistently under negotiation" (p. 254). I am sympathetic to much that historians and sociologists have said about the cultural assumptions and philosophical commitments that influence scientific theories, to which Kuhn drew attention many years ago. The idealized picture of the scientist's objectivity and pure pursuit of truth also neglects the roles of professional recognition, personal, corporate, and national interests, and ideological biases. But I have argued that the "social construction of sci-

ence" movement has gone too far toward historical and cultural relativism, underestimating the constraints placed on theories by experimental data (even if data are never theory-free or presuppositionless). Critical realism recognizes the human element in science but nevertheless seeks universality. Christian thought asserts both the limitations of human knowledge and the conviction that the order of nature is God's creation and therefore universal. I have observed at several conferences that the scientists almost invariably have been opposed to theories of "the social construction of science"; they have upheld universality as a goal, though one never fully attainable (Barbour 1997, 144–46).

I find that I can concur in the first three of Smedes's concluding recommendations. Science education is important at a time when scientific illiteracy is rising. Theologians should listen to scientists and let themselves be educated by them. Methodological questions are critical (and have perhaps received more attention on the Continent than in the English-speaking world, although I do not think they have been "largely forgotten" in the latter). But I have reservations about his last two comments: "Scholars active in science-and-religion need to learn that most of the time the answers are not as important as finding the right questions. This we can learn from science." "Why do we need an interaction between science and religion? What is the use? and for whom? I believe that there is no single answer to these questions that is generally applicable to all times and places" (p. 255). I suggest that if we were left with these unanswered questions we would have little motivation to pursue the dialogue.

Let me close by looking at my disagreements with Smedes from the perspective of my fourfold typology of Conflict, Independence, Dialogue, and Integration. Any typology is a way of seeking broad patterns in comparing ideas. Such generalities (and exceptions to them) must of course be supported by detailed studies of particular people in particular religious traditions writing about specific sciences in specific historical contexts.

Conflict. In another recent article (Smedes 2007), Smedes refers to my typology and argues that American authors, and Barbour in particular, were interested in Dialogue and Integration not in order to resolve Conflict but in order to avoid Independence because it tended to isolate theology in an intellectual ghetto irrelevant to other spheres of contemporary life. He points out that my 1966 volume, *Issues in Science and Religion*, did not even list Conflict as a separate type. He also shows that in America in the first half of the nineteenth century there were few examples of Conflict, and during the second half of that century the popular model of "the warfare between science and religion" was largely the product of social forces such as the desire of the scientific and educational communities to establish their professional and institutional autonomy.

As I look back, I think the cause of my failure to list Conflict as a separate type in 1966 was my erroneous belief that creationism (which with

fundamentalism was a distinctively American response to the growth of theological liberalism early in the twentieth century) was no longer a major force more than forty years after the Scopes trial in Tennessee. I underestimated the appeal of creationism and the new forms it would take in public education after losing repeated challenges in the courts. I also did not foresee the extent to which prominent scientists in their popular writing would defend scientific materialism. In 1966 I did think that Independence (especially the intellectual isolation encouraged by Barthianism, existentialism, and linguistic philosophy) presented a more serious obstacle to serious dialogue than Conflict did. But by the time I was writing my Gifford lectures in the late 1980s, Conflict was more widespread and Independence had fewer advocates than two decades earlier.

Independence. Smedes himself seems to subscribe to Independence, which also can be termed Separation or Compartmentalization. He mentions the legacy of Barthianism in Germany and the Netherlands. He draws on the linguistic philosophers who describe the incommensurable functions of different conceptual schemes or "languages." He defends the compatibility of human freedom and divine determination because they are assertions about totally different orders. He describes a group of scientists and theologians who convened in the Netherlands and almost terminated their meetings because they were "unable to decide on the theme or contents of future deliberations, due to lack of problems." He continues:

> Being influenced by the German hermeneutical tradition, all participants accepted a functional and conceptual separation of science and religion. . . . So, in the fourteen ensuing years, theologians explained to scientists the basic notions of Christian theology, and scientists explained to theologians the foundations of the scientific worldview. . . . The Committee did not resolve any problems, but they learned to rule out the wrong questions. In the process, they were conducting the dialogue they were searching for, simply by doing it. (p. 240)

This may have been a valuable educational project, but it sounds more like fourteen years of monologues than a genuine dialogue.

I still think that Independence has much to commend it. It would prevent Conflict of the kind that occurs when creationists reject evolution or when ID proponents claim unbridgeable gaps in the evolutionary account. It would prevent the other kind of Conflict that occurs when defenders of materialism claim that science disproves the existence of God. Conflicts occur when either theologians or scientists transgress the boundaries of their disciplinary expertise. A form of Independence that has much in common with Smedes is the distinction noted earlier between primary and secondary causality. God as primary cause works through the secondary causes studied by science but does not operate on the same level. It is not as if God and natural causes compete with each other, nor does the natural nexus have gaps in which God intervenes.

Dialogue. Independence may be effective in preventing Conflict by assigning science and theology to watertight compartments of human thought. But at the same time it cuts off any possibility of constructive interaction. It is for this reason that I have advocated Dialogue in either of two forms. The first is the examination of presuppositions in science (such as the role that the doctrine of creation played in the rise of modern science by suggesting the intelligibility and contingency of the world), or the raising of boundary questions not answered by science (such as Why is there a universe at all, and why does it have the form it has?). I believe Smedes would be quite comfortable with these forms of Dialogue. The second is the exploration of methodological and conceptual parallels between science and religion. Smedes encourages methodological comparisons but concludes that the differences far outweigh any similarities (or parallels). Examples of conceptual parallels would be the extension of Niels Bohr's idea of complementarity in quantum physics to apply to the relation between science and religion, or Polkinghorne's extension of the scientific concept of the communication of information to apply to God's action in the world. Smedes suggests a conceptual parallel in the concluding chapter of his 2004 book where he proposes that the concept of dimensions in relativity theory (in which time is a fourth dimension and the curvature of space can be represented as a fifth dimension) can be used analogically to imagine God as acting from another dimension, thereby combining immanence and at least some features of transcendence (Smedes 2004, 220–23).

Integration. This is the main target of Smedes's criticisms. As I presented it, the first form of Integration is *natural theology*, which is not prominent in my thought. The one exception is the fine-tuning of the physical constants in the early moments of our universe (the Anthropic Principle). The evolution of life and mind would have been impossible if these apparently arbitrary constants had been even a tiny amount smaller or larger; the universe would have expanded too rapidly or too slowly for galaxies and planets to form. A theistic understanding of God's purposes seems as plausible an explanation of fine-tuning as the cosmological theories that postulate an infinite array of universes with differing constants, among which our universe happens by chance to have constants just right for life. (It is very unlikely that one of these highly speculative multiverse theories will be confirmed, since other universes would be in principle beyond the limits of possible observation, and any empirical support for the theory would have to be very indirect. But if such a theory were confirmed I would believe that God's purposes could be fulfilled through multiverses. I do not want to tie the theological doctrine of creation too tightly to the idea of a unique Big Bang).

I gave Peacocke as an example of a *theology of nature*, the second form of Integration. Whereas Dialogue finds limited parallels or analogies between

scientific and theological concepts, a theology of nature extends scientific concepts more systematically in interpreting a theological tradition. Peacocke takes from systems theory and complexity theory the concept of top-down influence from higher to lower levels in a hierarchy of levels and then extends it to describe God as the highest level influencing lower levels in the world. He also speaks of the influence of wholes on parts and takes God to be the most inclusive whole. He develops panentheism (the idea that God includes but is not exhausted by the world), which he sees as a middle ground between pantheism and theism. He says that it provides a better balance between immanence and transcendence than classical theism, which overemphasized transcendence. Such a theology of nature allows modifications in classical theological ideas without depending exclusively on science as most forms of natural theology do.

The final form of Integration I called *systematic synthesis.* The Thomistic synthesis of Christian and Aristotelian thought was a creative intellectual accomplishment that was relevant to almost all spheres of human activity. In some ways it fostered attitudes conducive to the development of science, but it hindered modern science when Aristotelian science was supported by the authority of the Roman Catholic Church (as occurred in the trial of Galileo, for example). The dominance of Thomism in Catholic thought was one reason for the opposition to Pierre Teilhard de Chardin's alternative systematic synthesis, even though evolution itself had been widely accepted by Catholic leaders. (Biblical literalism has never been as prominent in Roman Catholic as in Protestant circles, both because early and medieval authors acknowledged the variety of literary genres in the Bible and because the ultimate authority is the church as it interprets the Bible, not the Bible itself). The case of Thomism shows the value of a systematic synthesis but also its dangers, especially when it is used by an authoritative institution to exclude new ideas.

I have already discussed process philosophy and its strengths and limitations as a form of systematic synthesis. Suffice it to say that there are many forms of Integration of which some may be more subject than others to the objections raised by Smedes. Many of Peacocke's ideas, for example, are shared by process thinkers but can be defended without adopting all features of process metaphysics. There is indeed widespread skepticism about metaphysical systems that claim to be all-inclusive and a recognition of the value of using a variety of models for a God who transcends all human concepts.

In concluding a chapter describing the four types I wrote:

> In examining particular sciences in each of the chapters that follow, I will indicate my reasons for disagreeing with the Conflict thesis. I will point out what I consider to be valid themes in the Independence position, even though I do not accept its conclusions. I will describe some significant proposals for Dialogue, especially those suggesting methodological and conceptual parallels. Finally, I will

draw from advocates of Integration in the reformulation of the doctrines of creation, human nature, and (more briefly) environmental ethics, including a cautious use of ideas from process philosophy. (Barbour 2000, 38)

Perhaps I have not been cautious enough in my use of process philosophy, but I still maintain that it is one of several options worth exploring.

Smedes thinks that I do not take theology seriously enough because I have been influenced by an implicit scientism as very broadly defined. I think he does not take science seriously enough as a dialogue partner with theology, perhaps under the influence of linguistic philosophy and the legacy of Barthian theology. I believe that a promising future for genuine dialogue and efforts at integration requires taking both theology and science seriously while avoiding scientism as more narrowly defined. I suggest that this is the challenge of the future as members of other religious traditions are beginning to engage in similar interaction with scientific thought.

References

Barbour, Ian G. 1966. *Issues in Science and Religion.* Englewood Cliffs, N.J.: Prentice-Hall.

———. 1997. *Religion and Science: Historical and Contemporary Issues.* San Francisco: HarperSanFrancisco.

———. 2000. *When Science Meets Religion.* San Francisco: HarperSanFrancisco.

———. 2008. "Remembering Arthur Peacocke: A Personal Reflection." *Zygon: Journal of Religion and Science* 43:89–102.

Clayton, Philip. 1989. *Explanation from Physics to Theology: An Essay in Rationality and Religion.* New Haven: Yale Univ. Press.

Jones, John E. III. 2005. *Kitzmiller vs Dover Area School District.*

Pennock, Robert E., ed. 2001. *Intelligent Design Creationism and Its Critics: Philosophical, Theological, and Scientific Perspectives.* Cambridge: MIT Press.

Russell, Robert John. 1998. "Special Providence and Genetic Mutation: A New Defense of Theistic Evolution." In *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, ed. Robert John Russell, William R. Stoeger, S.J., and Francisco J. Ayala, 191–223. Vatican City State: Vatican Observatory, and Berkeley, Calif.: Center for Theology and the Natural Sciences.

Smedes, Taede A. 2004. *Chaos, Complexity, and God: Divine Action and Scientism.* Louvain: Peeters.

———. 2007. "Social and Ideological Roots of 'Science and Religion.'" *Theology and Science* 5:185–201.

———. 2008. "Beyond Barbour or Back to Basics? The Future of Science and Religion and the Quest for Unity." *Zygon: Journal of Religion and Science* 43:235–58.

van Huyssteen, Wentzel. 1999. *The Shaping of Rationality: Interdisciplinarity in Theology and Science.* Grand Rapids, Mich.: Eerdmans.

Wildman, Wesley. 2004. "The Divine Action Project, 1988–2003." *Theology and Science* 2:31–76.