

The Agenda for Religion-and-Science

A BIOLOGIST'S PERSPECTIVE ON THE FUTURE OF THE
SCIENCE-RELIGION DIALOGUE IN THE TWENTY-FIRST
CENTURY

by John J. Carvalho IV

Abstract. In recent issues of *Zygon*, numerous reflections have been published commenting on where the field of science-and-religion has been, where it presently stands, and where it should move in the future. These reflections touch on the importance of the dialogue and raise questions as to what audience the dialogue addresses and whom it should address. Some scholars see the dialogue as prospering, while others point out that much work needs to be done to make the dialogue more accessible to a larger audience and more successful at tackling the provocative questions before us. Other academics view the questions themselves as needing further consideration and focus before answers to them can even be explored. In this article I provide a general overview of these essays by outlining some general categories of thought that seem to emerge from the contributors. I then present some of my own opinions concerning the future of the science-religion field and emphasize that the dialogue, in addition to its traditional roles, must further the philosophical framework that can aid humanity in resolving the most pressing global concerns of our time.

Keywords: evolutionary biology; global warming; human rights; philosophy; religion; science-religion; technology; theology; third world poverty; world health

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OVERVIEW OF RECENT ZYGMON ESSAYS

It is my pleasure to provide a brief summary of the many essays that have been published in recent issues of *Zygon* on “the future of the science-religion dialogue.” It is an equal joy to write a few reflections of my own. Having acted as a scientist in the biomedical research area and as a contributor and witness to the science-religion field since my research days at Harvard Medical School and the Washington University School of Medicine in St. Louis, I feel truly honored to have been given this opportunity. I have not engaged the science-religion dialogue for as long as many of the scholars who have written on the topic at hand in this journal, but I hope to do justice in this overview and also to be provocative in my comments on the future direction of the field.

Indeed, the authors are well versed in the science-religion dialogue and span many exciting disciplines: Philip Hefner (systematic theology), K. Helmut Reich (physics, psychology), Joan D. Koss-Chioino (psychology, anthropology), Wesley J. Wildman (theology, ethics), Ann Milliken Pederson (theology), Donald M. Braxton (religious studies), John Polkinghorne (physics, theology), Michael Ruse (evolutionary biology, philosophy of biology, history of science), Gregory R. Peterson (philosophy, religion), Celia Deane-Drummond (theology, biosciences), Eduardo Cruz (religious studies), Taede A. Smedes (philosophical theology), Don Browning (religion, ethics, social sciences), Karl E. Peters (philosophy, religion), Edwin C. Laurensen (law), James Haag (theology), Fraser Watts (theology, psychology) and now myself (biology, biomedicine, philosophy). It would have been interesting to have received the comments of Arthur Peacocke, but he died prior to the publication of these articles. Nevertheless, many diverse opinions have been presented.

Doing justice to all of the reflections from these writers would be difficult, if not impossible. However, I summarize here some general categories of thought that emerge from their analyses.

1. All of the authors propose that we ask the fundamental question that Hefner introduced: Who is our target audience, and is the audience being influenced enough by our discussions? Some, such as Smedes (2007), suggest that the science-religion field is *closed* in terms of its audience, and such a notion may make the scholars in the science-religion arena suspect that the field is dying out or becoming irrelevant to society at large. Clearly the science-religion dialogue wants to expand its debate to include the largest audience possible. A large audience will bring forth energetic scholars who can add new insights to the dialogue and confirm that the present conversations are worthy of being recognized by the broader academy and society. The larger following and renewed interest in the field also would reveal that the discussions taking place within the science-religion dialogue are influencing the perspectives and even, perhaps, actions of people who

read about science-and-religion, and therefore the more likely it would be that the dialogue would contribute to the benefit of humanity.

2. A second area of concern that emerges from the essays is to increase the quality of the scholarship of the science-religion dialogue. This concern is alluded to by Haag, Smedes, Peterson, and, perhaps most strongly, Ruse (see their essays in the June and September 2007 issues of *Zygon*). Ruse suggests, for example, that much of the work in the science-religion field is “second-rate” (Ruse 2007, 579) and that “too many of the people in the science-religion field are simply not properly trained” (p. 580). He argues that “a good background in science and a deep Christian faith are not enough” to write quality literature pertaining to the issues of the field (p. 580). Clearly, if the research within the dialogue is second-rate, the ambition of expanding the target audience may be a noble one, but it will be futile. To answer this concern, Smedes, Haag, Peterson, and Ruse all recommend that the field can improve the quality of its scholarship if its investigators focus more effectively on other academic domains that act as foundational scaffolds from which the dialogue emerges. Ruse and Smedes both argue that scholars need to be well read in the areas of philosophy (Smedes 2007; Ruse 2007) and philosophy of ethics, game theory, philosophy of mind, and theology (Ruse 2007). Braxton (2007) proposes that we need to bring the tools of religious studies to the dialogue as well. Polkinghorne sees the dialogue expanding to encompass a wider array of theological questions to make it a more robust contextual theology (2007, 573–74). Some of the writers, such as Reich, believe the dialogue can be expanded and the scholarship improved when “multidisciplinary teams” of scholars with different academic backgrounds and diverging opinions formulate the results of research together, so as to prevent hasty conclusions and give the scholarship being done a wider scope (2007, 270). Of course, going back to the foundational scholarship of philosophy would train us to determine whether the questions of the dialogue need further reflection and focus before the answers can be explored. This again is a position that is advocated by Haag, Ruse, and Smedes in their articles.

One fundamental question that certainly arises is how the relation between science and religion should be understood, a question clearly recognized by Haag and Peterson. Sometimes this relation can be seen as one of conflict in which either theology or science is viewed as subordinate in some fashion to the other. Haag introduces the question “How committed should theologians be to ‘new’ or ‘rogue’ scientific discoveries?” (2007, 817), inherently suggesting that many theologians are cautious of scientific ideas that are not as perennially robust as, perhaps, the canons of theology. By contrast, skeptics of theology view theology as constantly in need of revision because, they argue, the facts of science have invalidated the principles of theology in some way. Consequently, Peterson advises that we reexplore the position of theology in the science-religion dialogue

to determine whether theology is a proper dialogue partner in terms of the truthfulness of its tenets. In so doing we would establish the relevance and validity of theology as a field more worthy of consideration in the university community than it may presently stand. Perhaps this is the very goal of the dialogue, according to Peterson (2007).

Cruz argues that we should take the skeptics' view of the validity of religion and theological reflection seriously and work toward providing models of reality that are reasonable and that cohere with scientific findings (2007, 593). In a previous issue of *Zygon* I myself delved into the "structure of a scientific worldview" and spoke on what justifies a worldview as being scientific as opposed to nonscientific (Carvalho 2006, 121). I brought up the suggestion that *coherency* within the worldview—that nowhere in the worldview should there be gross contradictions that negate the entire system—is one of the justifications for a scientific worldview that is lacking in a nonscientific one (p. 121). In that essay I designated the "scope" of a worldview (how much it tries to address) as its "comprehensiveness" (p. 113). I argued that philosophical and theological worldviews have a greater comprehensiveness than scientific worldviews in light of the more hierarchical questions they attempt to address—questions that the methods of science do not specifically confront, such as ethical questions that, in most cases, require philosophical reflection as opposed to scientific experimentation. I would argue that, as in scientific worldviews, the justification of any comprehensive worldview that attempts to get at the truth of reality must also possess this element of coherency. Such an idea seems in sync with Cruz's position, because such a comprehensive worldview is likely to be a philosophical or perhaps even theological one that has science as one component (Carvalho 2006, 122). I also argue that it is important to determine from the outset what vantage point we are dialoguing from—what worldview we are specifically working in and what could be the immediate suggestions as to how comprehensive it is. This latter point is in agreement with Reich, who argues that multidisciplinary teams of scholars working on a project must clearly indicate their presuppositions and logic used to tackle science-religion research whenever larger conclusions or models are being formed (2007, 270).

3. In addition to the position of further analyzing the relation between science and religion and reflecting more on the proper questions we need to be asking and exploring, there is a movement among scholars in recent issues of *Zygon* to direct the field from the theoretical toward the concrete or practical. The essays have various nuances on this theme. In terms of the immediate workings of the academy, Wildman believes that we "need to shift from synthetic dreaming to concrete problem solving" (2007, 277–78). He writes that "the history of science proved crucial for helping the philosophical study of scientific practices unfold productively" (p. 278). If there is anything to learn from this history, it may well be that multidisci-

plinary problem-solving efforts are more likely to benefit society than dreams of acquiring a theory of integrated knowledge. Hence, scholars in science-and-religion should enhance their background knowledge and skill sets and solve concrete problems that are pertinent to everyone. Such an approach would likely enlarge the audience of the dialogue and simultaneously lead to resolutions of difficult present-day enigmas. Polkinghorne, likewise, mentions the importance of focusing on practical problems, such as pursuing the ethical concerns arising from technological developments, global warming, and so on (Polkinghorne 2007). Similarly, Reich believes that science-religion models should be applied usefully to societal benefit (2007, 272).

In my June 2007 *Zygon* article I explored the role of scientists, especially those engaging the science-religion dialogue, in relation to the larger practical world of human rights, poverty, and third world health issues and provided examples of where the scientist could interface with human rights organizations, political and civic leaders, and medical doctors in the field of third world health. I introduced some general examples of how the theoretical discussions of the science-religion dialogue could contribute to these practical issues. I believe that the dialogue could thereby expand its readership to those scholars on the world stage who deal with immediate, concrete matters. There appears to be a spin-off of this philosophical suggestion by other recent *Zygon* authors. A number of us have looked at the issue of human rights specifically as an important domain for the science-religion field. I mentioned my concern with third world equity matters already and how science-religion can speak on some of these themes (Carvalho 2007). Laurenson, a lawyer by trade, argues in his 2007 essay that focusing on the importance of recognizing the human person as a *subject* who exists and possesses a religious dimension has profound importance for human rights, as history attests. Indeed, Laurenson argues that the reason for the journal *Zygon* is to keep the mechanistic, nihilistic understanding of the human condition under constant scrutiny.

Similarly, Deane-Drummond (2007) believes *seeking wisdom* has a “practical element to it” and that science-and-religion scholars should consider engaging the wider political and social realm. In so doing, such scholars—who arguably possess a more profound understanding of how science, technology, and religion intersect to impact societies—would act as catalysts of change that would benefit humankind.

Aside from focusing on human rights, Browning (2007) suggests that we can expand our audience by situating the conversations within the framework of practical moral reflection in such a way that the science-religion field can shed light on and help clarify such moral reflection. Browning’s argument harkens back to the perspective of Polkinghorne that the dialogue could have much to say on the ethics of using certain technologies. Peters sees the dialogue focused on religion—and the task of religion, he

contends, needs to be properly understood as finding ways of responding to basic human needs in relation to the activity of the sacred. Science should be seen as a tool to help us understand both the causes of suffering and the “more than” human who works to alleviate suffering (Peters 2007). In this sense, Peters suggests, our very investigation of moral issues should reveal to us that there is “more than” the scientific dimension, and it is religion that sheds light on the more transcendent dimension involved in all elements of the human moral condition.

4. Many scholars in the field suggest that the science-religion dialogue needs also to expand the discussion with other areas of science, such as the human sciences, or other religious traditions, or explore the additional anthropological information available on various peoples and cultures (especially Watts 2007; Koss-Chioino 2007). The dialogue could thereby enlarge its audience by either attracting additional scholars to science-religion or recognizing the relevance of other traditions and societies in such a way that members of those traditions can more fully partake in the dialogue and contribute to it. Polkinghorne concurs and sees this approach as a meeting of the world faiths (2007, 575).

I believe that these authors are correct and that this approach also could foster greater understanding between cultures and thus promote peace and harmony in the world. In fact, the objective of the World Council of Religious Leaders is to bring the “collective wisdom and resources of the faith traditions” to support the peace efforts of the United Nations and to resolve the “critical global problems of our time” (Charter of the World Council 2002). Kofi Annan, in his Nobel Peace Prize lecture (2001), said that “in every great faith and tradition one can find the values of tolerance and mutual understanding” and that “mutual respect allows us to study and learn from the other cultures.” Indeed, fostering interreligious and intercultural dialogue is indispensable for furthering world order.

Deane-Drummond believes that we can expand the science-religion audience by “experiencing wonder and seeking wisdom.” She asserts that it is the wonder people experience from science that keeps science in the imagination of individuals (2007, 587). She argues that the wonder in science must be explored in terms of how far it can take us into the realm of the transcendent (p. 588). Of course, wonder always has a connection to the unknown, and whenever we explore the unknown we must humble ourselves in our explorations. Her view that seeking wisdom entails a degree of humility in the way we as scholars deal with our colleagues is a point worthy of mentioning (pp. 588–89). I always have held that the scholar needs great humility to engage in philosophical reflection. Socrates, in my view, took this same perspective, as is attested by Plato’s dialogues. Similarly, Plato in *Parmenides* revealed the true power of humility in philosophical investigation when he explored the various dimensions of being and nonbeing—practically providing the framework for metaphysical dis-

course for centuries to come by taking apart his own theory of the forms and disclosing the alternative possibilities.

Such modesty in our attempts to seek wisdom is advocated by Pederson as well in her essay "Needed: Modest Witnesses and Scholars" (2007). Only through humility can we have the wisdom to listen to each other and thereby gain a better understanding of each other's views. Such an understanding is the key to progress in the science-religion dialogue.

FUTURE DIRECTIONS

Having given a brief overview of these recent essays in *Zygon*, I now offer my own reflections on the future of the dialogue and how it may expand its audience. In my opinion, the dialogue is still vital and relevant to society outside the halls of the academy; nevertheless, we can do more to broaden our following.

Having studied in areas of philosophy and theology, outside of my own area of biology, I agree that scholars in the science-religion field must possess depth across a very broad spectrum of disciplines in order to tackle some of the topics that are of interest to the field. This would give scholars in science-religion an added intellectual dimension that would improve their research and allow them to more fully engage scholars in other disciplines. This in itself could be a way to broaden the audience. I admonish, however, that any true philosophical journey begins with humility. We scholars must learn how to engage philosophical discourse with an open mind, not merely predetermined conclusions, as we venture into areas both within and outside our specialties. All too often in the science-religion field theorists dismiss ideas without providing quality philosophical reasoning to back up their denunciations.

Another problem is the error of lump-summing some ideas with others that are not truly related. It is important to realize that many opinions exist within any religious tradition or scientific research area. Not all theists are from the intelligent-design movement, and it would be unjust to place them all under one false categorical heading. Similarly, not all evolutionists concur with the neo-Darwinian perspective, and the various categories should be delineated appropriately. Also, glossing over robust scientific evidence on a particular topic (such as radioisotope dating and the age of the earth or experiments supporting the validity of natural selection in evolutionary theory), dismissing available scientific information, does not contribute to sound argumentation and therefore fails us in the search for discovering the truth of reality. Scholars from all disciplines must explore their own field and others with a clear and objective eye and with a methodological perspective that is consistent and coherent. Again, a broad educational background in many areas outside of one's specialty is helpful and will make scholars in our field capable of more accurately disseminating the material in science-religion to a broader audience.

When I look over the scholarship in other disciplines, I notice a number of interesting areas of research that may be pertinent to science-religion. For example, I have found the systematic biology work of theoretical physicist Geoffrey West and ecologist Jim Brown at the Santa Fe Institute quite provocative. Both have been studying relationships between animal species and a host of different variables—for example, body weight and metabolic rate or the number of heartbeats of an organism and its life span—and have discovered mathematical formulas that are remarkably precise and accurate for most lineages of animals (Brown and West 2000). One wonders how encompassing and predictive such mathematical calculations are and what they tell us about the structure of the universe and the biosphere. Could these be fundamental laws of biology? The history of the philosophy of biology is riddled with debates about whether or not physical laws exist in biology or whether all of biology is composed of “concepts” and if such biological concepts, in the words of the late evolutionist Ernst Mayr (1982), have exceptions. Some theorists, such as David Hull (1974), have proposed that laws of biology may exist only at the developmental level. I myself am more in line with Mayr on the issue of the existence of biological laws, but it would be interesting to see if the work from the Santa Fe Institute, like the work from Hull and developmental evolutionists, refines evolutionary theory. Similarly, the philosophy of chemistry work from Ross L. Stein, an associate professor of neurology from Harvard Medical School, gives an intriguing model of divine action (2004; 2006), and one wonders how far this philosophical perspective can take the field. Yet another interesting area is the group selection evolutionary biology research being conducted by Elliot Sober and David Sloan Wilson (1998). Indeed, there are a number of research projects that could warrant our attention.

If I had to choose one area of research that would broaden the audience of the dialogue more than any other, however, it must be the work that inspires society to resolve pressing planetary concerns, specifically in the areas of stopping global warming, protecting Earth’s diminishing resources, providing equity health for all people, and safeguarding human rights everywhere. The awarding of the 2007 Nobel Peace Prize to former United States Vice President Al Gore and the United Nations’ Intergovernmental Panel on Climate Change testifies to the fact that there is movement among different agencies and individuals to tackle such problems. In a previous *Zygon* article (Carvalho 2007) I wrote of global equity health matters and third world poverty issues and the fact that individuals of reduced agency need to be united into “collective forces” to foster change in our world. This position was confirmed by Gore in his Nobel Prize speech: “We must abandon the conceit that individual, isolated, private actions are the answer. . . . They will not take us far enough without collective action” (Gore 2007). I can see these areas of research becoming only more important as

the days go by, and I have already provided some examples of where science-religion can intersect in the worldwide debate (Carvalho 2007).

Given that the technologies of today can threaten the quality of life tomorrow, the science-religion dialogue must continue to remind us of the beauty and grandeur of existence itself—and, most important, of life. It must continuously make us aware of the value of our world and the rationale for continuing to protect it. The scholars in the science-religion dialogue stand at the intersection of science, philosophy, and theology, the hierarchical arenas of human thought. Consequently, there is potential—if not obligation—to perform research in this arena and disseminate the findings to the larger world to provide the blueprint for future progress.

CONCLUSION

This brief overview of recent essays in *Zygon* is by no means comprehensive. It leads me to believe, however, that the science-religion dialogue is healthy. Along with Polkinghorne and Browning, I am optimistic that the science-religion field is strong and vital. Part of this strength stems from the fact that science-and-religion acts as a nexus to the greatest questions of the human condition; the tremendous success of science and technology is coupled with the need for further exploration into the perennial questions humans have asked and will continue to ask. As a result, science-religion will always be relevant.

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