Reeves's Against Methodology in Science and Religion

with Paul Allen, "Critical Realism Redux: A Response to Josh Reeves"; J.B. Stump, "Science and Other Common Nouns: Further Implications of Anti-Essentialism"; Peter N. Jordan, "Legitimacy and the Field of Science and Religion"; Jaime Wright, "Making Space for the Methodological Mosaic: The Future of the Field of Science and Religion"; Victoria Lorrimar, "Science and Religion: Moving beyond the Credibility Strategy"; and Josh Reeves, "Methodology in Science and Religion: A Reply to Critics"

METHODOLOGY IN SCIENCE AND RELIGION: A REPLY TO CRITICS

by Josh Reeves

Abstract. Debates about methodology have been central to the emergence of the "field of science of religion." Two questions that have motivated scholars in that field over the past half century: "is it theoretically justifiable to bring scientific and religious beliefs into dialogue?" and "can theology be rational in the same way as science?" This article responds to commentary on *Against Methodology: Recent Debates on Rationality and Theology*, a book which critically examines three major methodologists of recent years: Nancey Murphy, Alister McGrath, and J. Wentzel van Huyssteen. Themes raised in the commentary include the status of realism and truth in science, the unity of science, the adequacy of the term "critical realism," proper ways of seeking legitimacy for an academic discipline, and new directions for the field of science and religion.

Keywords: critical realism; philosophy of science; scientific method; theological method

---

The Argument Summarized

Against Methodology represents at least a decade of my thinking about the methodological relationship of science and religion, and I am grateful to have other scholars willing to engage my arguments, allowing further refinement and extension of them. I do think the field of science and religion has reached an inflection point; if it is to continue as more than

Josh Reeves is Assistant Professor of Science and Religion in the Biblical and Religious Studies Department at Samford University in Birmingham, AL, USA; e-mail: jareeves@samford.edu.

 ISSN 0591-2385

a convenient label for a loose conglomeration of sometimes overlapping conversations — if there is truly an intellectual core that unites science and religion scholars — then we need to find a way to rearticulate the methodology conversation that is consistent with developments in other fields, especially the history and philosophy of science. While any scholar or public intellectual can address "the relationship between science and religion," is there anything that separates the way someone trained in science and religion frames and answers questions? I think the answer is yes, but it would be helpful to spell this out clearly, rather than leaving it for new scholars to indirectly puzzle it out from Peter Harrison's *The Territories of Science and Religion*, for example. As Jim Stump noted in his response, John Hedley Brooke's book *Science and Religion: Some Historical Perspectives* (1991), which influentially defended "the complexity thesis," has been around since the early 1990s. It has been all too common for science and religion scholars to acknowledge the complexity of the terms "science" and "religion," but then to carry on much as before with the project of using science to justify theological or religious inquiry.

In this response, I will first summarize the argument of the book before addressing specific themes raised by the respondents. A brief summary of the book: in my own training in science and religion at Boston University, I was struck by how many science and religion scholars were attempting to use the authority of science to secure the legitimacy of theology as a discipline. Theology had long struggled in the twentieth century to find a secure place in public research universities, for it seemed to rely upon faith claims that are problematic from a philosophical point of view. But, as many theologians realized, if one can show that theology meets the standard of scientific inquiry, then theology will have to be taken seriously as a discipline. This impulse to make theology scientific is not new, but it picked up steam in the debates that emerged in the wake of the philosophy of Thomas Kuhn.

To illustrate the drive for legitimacy, I have picked quotes from three leading science and religion methodologists of the past three decades. Nancey Murphy (1990, 85) has argued that if theology can be shown to meet the standards of recent philosophy of science, it would be an important rebuttal to the general skepticism toward religion generated by the work of David Hume. Likewise, Alister McGrath explicitly argues in his recent book, *The Territories of Human Reason: Science and Theology in an Age of Multiple Rationalities,* that the three main forms of scientific reasoning [deduction, induction, and abduction] are also deployed in Christian theology. Why would he do this? As he says (2019) in the closing chapter: "The main concern of this work is thus to provide intellectual justification for and facilitation of a meaningful conversation between the natural sciences and Christian theology." In other words, if he can show intellectual overlaps in the methodologies and procedures of the two domains,

then we are justified in conferring some respectability onto theology. And finally Wentzel van Huyssteen (2006, 14) argues, "In the postfoundationalist model, theology emerges as a reasoning strategy on a par with the intellectual integrity and legitimacy of the natural, human, and social sciences, even as it defines its own powerful domain of thought that in so many ways is also distinct from that of the sciences." All three thus attempt to use the success of science to support theological inquiry.

To argue that a discipline should be counted as a science, one needs a theory about what distinguishes science from nonscience. The problem, however, is that there is no philosophical consensus about the nature of scientific inquiry. When one surveys the literature, one sees three main approaches to characterizing the essence of science, appealing either to scientific realism, method, or rationality. Each of these approaches comes with different implications for how theology might be made scientific, or at least be brought into comparison with theology. I see Murphy, McGrath, and Van Huyssteen as each endorsing these three different strategies, respectively.

While each of these proposals has individual problems, I argue that all three make assumptions incompatible with the best of recent scholarship in the history and philosophy of science. Although an explicit goal of most scholars in the field of science and religion is to question how the terms *science* and *religion* are set in opposition, they do so by accepting "science" as a universal category — a position that is labeled by historians as *essentialism*.

Like Paul Feyerabend in his classic work *Against Method*, my book argued that no method or theory of rationality can explain all successful science. Such explanations may seem impressive to outsiders, but they are much too simplistic to capture what scientists are doing. However, unlike Feyerabend, my conclusion is not presented as a controversial philosophical thesis meant to provoke positivist philosophers, but as a conclusion that represents the methodological consensus of recent scholarship in the philosophy and history of science. The rejection of essentialism emerged clearly in the work of historians of science in the last half century, especially in Peter Harrison *The Territories of Science and Religion*. The same trend toward antiessentialism is discernible in recent philosophy of science. Philosophers of science over the past 30 years have become considerably less interested in demarcating science from pseudoscience and have instead turned to work on specific problems within specific disciplines (Gutting 2000, 431).

Realism

Turning now to my respondents, perhaps the most common worry that my argument will generate is over the question of truth. Especially for

scholars who have been shaped by classical debates in philosophy of science, a theory of science is needed to be confident that science is (at least approximately) tracking truth. It is little surprise that Paul Allen, a sophisticated defender of critical realism, and Stump, a philosopher of science, would focus their responses on these issues.

Allen is willing to grant my criticisms of McGrath but argues there are more persuasive versions of critical realism on offer. He worries that if I give up all forms of realism, then I have little resources to avoid the untenable position of relativism, that science does not give us some knowledge about the natural world. Allen is thus suspicious of my reference to the work of Paul Feyerabend, who delighted in the anarchy of saying "anything goes" in the philosophy of science, even if his actual philosophy was more nuanced than this phrase implied.

But I think placing my argument in the framework of traditional philosophy of science misses my intended target. I am no relativist. I do think various sciences generate truth and even have no objections here to the correspondence theory of truth. I write this in the middle of the COVID-19 pandemic and believe that medical researchers can tell us many true things about the virus and how it spreads. I do not want to use philosophical arguments to give comfort to irrational science skepticism.

What then am I objecting to? I am objecting to thinking of science as a "natural kind," meaning there is some characteristic or method that unites all the different sciences together. Just because some researchers generate reliable truth in some areas does not mean we should trust the conclusions of "science." Just because we are realists about planets circling the Sun does not mean we have to be about quarks and gluons or dark matter, objects that we do not have access to in our everyday experience. And just because we may be realists about certain areas in science, it does not have any significant bearing on whether we are realists in theology.

Here is a story to explain my argument: imagine a scenario where some person has become isolated from society at a young age, and has to rely upon the instruction of an anonymous person (one could think of all sorts of hypothetical scenarios such as access to a computer) to survive. The anonymous person tells her what medicines to take, what foods are best to eat. And besides telling her things that make a noticeable improvement in her life, it also tells her things about the universe: what stars are made of, why things fall, and how bodies reproduce. In this scenario, our isolated person thinks, whoever is giving me this advice is telling me many true things about things I see, so I should also trust whatever else is being said. Since there is one voice, so the reasoning goes, a true response in one domain should increase our confidence in all things. But then, in our story, it becomes clear that there is not one voice behind all the useful information, numerous voices are giving different sorts of information

independently from each other. For our person on the island, this should change how she weighs what is being claimed. Each voice will need to be evaluated on their own terms. The credibility and usefulness of testimony from one person has no bearing on what someone else is saying.

This story hopefully illustrates what I am objecting to: that science speaks in one voice. Science is not one kind of thing; it is a tremendous variety of approaches and voices. Since there is not a methodological unity between the different things we lump under the category science, success in one area has no bearing on truth claims made in a different area. I do not object to the idea that many sciences give us truths, what I object to is that the success of different sciences has any relevance for theological arguments. Trying to establish methodological parallels between theology and "science" as a universal category will not work because there is not methodological core that underwrites "science."

One implication of antiessentialism is that there is no cognitive bedrock underlying science (and science alone) that we can use to demarcate science from nonscience. I would agree with Allen that there is a cognitive bedrock in the sense that scientists build upon general human reasoning abilities that we all share. For example, I remember vividly all the different experimental strategies that I used to get my kids to sleep when they were younger, playing with variables of noise, temperature, and so on. My efforts there depended on my general reasoning ability, but that does not make me a scientist. Once one pushes beyond the rhetoric associated with science, which portrays it as relying on a unique method and transcending normal human intellectual limits, the practice of science resembles all other human knowledge-making activities (Shapin 1995, 259).

The amount of consensus that science can generate from people from widely divergent backgrounds and cultures is exemplary. But this is not because science has uncovered some unique method or approach. Rather the logic is the other way around: wherever we find consensus in the natural realm, we attach the label science to it after the fact. Science is just a good shorthand word for those theories that we think have the best evidential support in the natural world. A discipline does not gain entry to the scientific "club" merely by showing methodological overlaps with established science. It is the results that counts.

Everything that I have argued here could be accepted by a "critical realist." I do not see anything in critical realism that requires that one embrace essentialism about the category "science." As long as one defends that at least some sciences are generating real knowledge about the world — as long as one holds on to the concept of truth — then one can describe oneself as a critical realist. My real problem with critical realism is that it tends toward philosophical sloppiness that leads one to assert contradictory things. I argued in the book that McGrath is guilty of this: in some places he will make impassioned defenses of the ability of science to

uncover true things about the world. In other places, he will argue that we should be hesitant to connect theology and science because science always is changing and there will always be multiple rationalities and communities for interpreting the evidence. Rather than being consistent, I think this allows McGrath to alternate between rival positions depending on his argumentative context. Here, then is the temptation that comes from describing oneself as a critical realist: it does not matter how skeptical or supportive of a truth claim in science an argument is; a critical realist can always shake his or her head affirmatively and say, "I agree." If critical realists (such as Paul, no doubt) develop positions that are more consistent about how they reconcile their "critical" with their "realism," then I would have no major objection to the label.

Truth and Community

Moving to Stump's response: another consequence of antiessentialism is that one cannot find objective guidelines for discerning which theories are really scientific or rational. Scientists and philosophers cannot reject a theory for violating objective scientific criteria because the norms themselves are always open for revision over time. For advocates of a more traditional philosophy of science, this is upsetting because they want to be able to rule their epistemic adversaries outside the bounds of rational debate. But recognizing that such rules do not exist is an important part of our intellectual situation. When dealing with conservative organizations like *Reasons to Believe*, there is no universal standards of methodology that they have violated.

Does this mean, as critics of Kuhn often charged him that anything goes with respect to theory choice? I think Stump is exactly right to bring in the work of Naomi Oreskes (2019) here. When deciding about which scientific theories to accept, one has to move in my opinion, from an account of good methodology to that of good judgment. The most important indicator of truth is the consensus of a community of diverse inquirers who have studied an issue.

However, I do not agree that Oreskes's position means we must accept Richard Rorty's formulation: truth is what your peers let you get away with. Rorty suggests there is no real truth to the matter, but rational inquiry is entirely a social game where the only constraints are one's peer group. But we cannot say whatever we want about the natural world; reality, and not just our peer group, constrains what can be said about it. Many truths exist prior to a community of researchers, but nonetheless it is almost impossible to discern truth without reliance upon a community.

Here the traditional rhetoric of science has done us a disservice for it downplays the need for trusting others. The slogan chosen by members

of the British Royal Society, perhaps the most influential organization in the history of science, was *Nullius in Verba* (on the word of no one) (Shapin 1994, 201). Instead of relying upon the opinions of others, the rhetoric of the Scientific Revolution downplayed the need for testimony, emphasizing instead a method that produced facts about the world that could be publicly observed and verified.

But this is not our epistemic situation. We take science on trust, but this is not an irrational leap in the dark. All humans are inclined to weigh information, otherwise we could not thrive, or even survive, for we would lack the skills to navigate modern life. Whenever my car's oil is changed, I must decide whether the additional packages recommended by my technician are necessary. Likewise, when seeking weight-loss advice, I must choose the most compelling diet based on the credibility of the advice giver. Scientific inquiry is a process of collaboration and managing trust, just as one would find in any field of organized human behavior (Shapin 1995, 302).

This is where *Reasons to Believe* falls short. I heard a lecture at my university where the founder and president of the ministry, Hugh Ross, explicitly said that the rejection of their theories by most scientists and Bible scholars who study an issue is actually evidence they are on the right track, since other scholars lack the privileged epistemic access to them given by the Holy Spirit. In other words, *Reasons to Believe* claims up front that their theories should be rejected by a majority of experts in the field. That may be enough to build an apologetics ministry, where one is trying to convince laypersons who lack specialist knowledge, but that is hardly a way to seek truth. Since trust plays an irreducible role in knowledge formation, we should always have good reasons or evidence for the experts we trust.

Legitimacy

I found Peter Jordan's focus on the concept of legitimacy to be helpful, fleshing out a concept that I did not say enough about in the book. There I explained that one assumption underlying the work of Murphy, McGrath, and Van Huyssteen is the need to assert the intellectual legitimacy of theological reasoning: if theology or religion cannot be shown to be a rational inquiry, then dialogue between science and religion is pointless. But this leads to the question: is it ever appropriate for theologians to seek legitimacy? If yes, then how?

I would hope to not be read as attacking all moves for theological legitimacy. Legitimacy is the currency of academic life; we offer reasons for our beliefs and hope others find them persuasive. One cannot argue, except on the pain of self-contradiction, that legitimacy is unimportant. My book really only targets one particular way of arguing for legitimacy: the attempt to argue for the scientific status of theology. At one time in Western

history, such claims might have been persuasive. But good arguments in the history and philosophy of science cast doubt on the existence of some unique method or other characteristic that underwrites all valid science. Theologians need to look elsewhere for argumentative resources.

One thing I would emphasize more than Jordan did in his response: I would say legitimacy, like authority, is inherently a social concept. No matter how strongly an interpretation is held, it does not have legitimacy if others do not believe it. Thus, I would be hesitant to draw too sharp a distinction (even for analytical purposes) between an object and the communities seeking legitimacy, for all our thinking about objects in the world are already influenced by "the social." Of course, I believe in a world that exists independent of our perception of it, but we also need to keep in mind that our access to that world is always conditioned by our social location. I believe Jordan would not object to this emphasis on legitimacy as a social process (it is evident in three of the four ingredients of his account of legitimacy), but I would want to make sure that any schema for analyzing legitimacy does not give comfort to commonly held individualist assumptions.

This emphasis on the social fits with what historians of science often say about nature: that it does not speak for itself. For scientific beliefs to spread, there must be someone making arguments for the credibility of a scientific claim. Legitimacy is, thus, always relative to culture, which is why science and religion scholars need to understand enough of the history of their discipline to see why the "making theology scientific" approach was seen as intellectually desirable to our predecessors. We need to understand the intellectual currents in which we swim, otherwise we have no basis to critically evaluate the assumptions we bring to the discussion.

The real question, therefore, is how best to seek legitimacy. And it is here one conclusion of my book might be summarized as "methodology will not save us." In the early generations of science and religion, it often seemed that if we could just articulate the right theory of science and religion, then our conclusions would have intellectual legitimacy. If we get the methodology right, the right conclusions will follow. This pictures methodology much too mechanistically. At its best, methodology can help make one aware of the general background assumptions one brings to a problem. But the scientific and theological process is way too creative to be formalized to a unique method. Even if we could agree on a general picture of rationality or method, this will not have many implications for specific conclusions. Scientists and scholars can agree on general strategy but disagree on the right conclusions, or they might agree on the conclusions but disagree with the strategy that reached it.

The "methodology will not save us" attitude is consistent with the second possibility for the future of science and religion that I laid out in the last chapter of *Against Methodology*, where scholars avoid methodology

questions and focus instead on particular problems that arise from active research programs in the sciences. In the case of science and religion scholars, progress comes by focusing on specific religious topics as they connect to particular scientific theories. I see this as a welcome development and would not place it in the category of theologians trying to gain legitimacy for theology by riding the coattails of science. Indeed, I would say this approach to science and religion represents the future of the field.

The biggest question raised by Jordan's analysis is who are the insiders and who are the outsiders in the field of science and religion? I think it is clear from the history of science and religion that the true outside audience has often been other disciplines in the university: the goal (except for historians of science) has been less to dislodge the "conflict narrative" in the public's mind and more to secure an institutional place in academia. Even if the academic argument for the scientific status of theology is found wanting, one can still say that science and religion has been moderately successful in finding an institutional home in the university, considering especially the shrinking of the humanities.

But who are the insiders in the field of science and religion? I normally ask this question while sitting at Science, Technology, and Religion sessions at the American Academy of Religion conference. Some sessions are explicitly theological, urging reform of some religious theory or doctrine in light of science. Some are purely descriptive, often recounting how different communities accommodate new technologies or use science as an argumentative resource for religious persuasion. More recently, many sessions have taken on a tone of apocalyptic moralism, where scholarship should help persuade the public to accept scientific consensus and formulate a global ethic that can rescue the planet from climate change. I sometimes wonder if there is anything that unites these disparate approaches together, meaning there are multiple "insiders," since scholars are starting from such different places. The worry is that the discussions taking place by these different specialist groups are so diverse, they have (or eventually will have) difficulty communicating with each other.

I think there is obviously no way to delimit the field of science and religion to just a single group of insiders. Indeed, why would we want to, since intellectual pluralism can be a strength rather than a weakness. If there is going to be true collaboration in science and religion among the various groups, it will be because we share a common set of intellectual tools: we share an understanding about the malleability of the categories of our scholarship. It is this shared understanding that gives our science and religion scholarship a rigor that is often lacking by those who address the same issues from a different disciplinary perspective, and it gives our diverse inquiries a family resemblance. Though I work explicitly from a Christian theological perspective, when I attend an AAR session on how

science is being assimilated and stretched in different religious traditions, I do not feel like an outsider to this conversation.

Expanding the Conversation in Science and Religion

It is not surprising to me that Jaime Wright and Victoria Lorrimar, who both have formal training in science and religion, focus their questions on the field's validity and future as an academic discipline. People will naturally ask: If antiessentialism dissolves the categories of science and religion, does that mean the field itself dissolves? As I argued in the book, another mistaken conclusion from antiessentialism is that the field of science and religion is hopelessly lost. Even if we outlawed the words "science" or "religion" (a position I do not advocate) it is not as if most of the problems that religion and science scholars normally address dissolve away. Questions such as: Is evolution compatible with different theistic religious traditions? Has neuroscience shown that humans are nothing but complex automatons? As long as a scholar is not using the categories of "science" and "religion" to do serious analytic work, then I do not see why we should assume their scholarship is infected with bias that renders their conclusions suspect. I am glad that Wright and Lorrimar agree with me on this point.

But I found it intriguing that both Wright and Lorrimar argue that antiessentialism opens up possibilities to push the conversation in new directions. The methodology conversation is often biased toward ideas: how do we justify our beliefs in either science or religion? But we humans are not formal and algorithmic reasoners, and we are more than our ideas. Our experiences and imagination shape and color our engagements with the world, and so the field should do more to address these core features of human life.

Wright argues that science and religion scholars should focus more on lived experiences. This is an intriguing issue that deserves more attention and raises questions that I am not sure how to answer. It is clear what lived religion looks like; one looks to the way religion is practiced in homes and places of worship across the globe. One does not need much religious training to form beliefs or to offer prayers, for example. But what does "lived science" look like? When one uses technology but possesses no understanding of how it works, has someone engaged "science" at all? When one uses a smartphone, is this "lived science"? I have my doubts. Or to use a different example: people have been drawing conclusions about nature for millennia, but science (in the contemporary meaning of the term) only emerged in the last several hundred years. How do we reconcile those two facts? If science is cognitively unnatural and requires years of training to practice, as the cognitive scientist Robert McCauley (2011) has argued, then why should we think that the public ever does science?

Lorrimar argues that imagination has been a neglected topic in the philosophy of science, and consequently among science and religion scholars. I would say that this is partly right. Imagination has been seen as having some role in the scientific process, just not in the rational justification of scientific theories. Many traditional philosophers of science distinguish between "the context of discovery" and "the context of justification." The former deals with where someone first conceived of an idea. The role of the imagination lies here; scientists may have conceived an idea in a dream, a religious trance, or under the influence of LSD. It does not matter where the idea comes from as long as it is proven in the "context of justification." The imagination is not active here because rationally assessing theories is a matter of logic, which does not depend on context. So while the imagination does play a role in the scientific process, it is something more relevant to historians than philosophers.

But is this account of imagination enough? The idea that we assess ideas independently of our context is rightly rejected by almost all scholars today. If this is the case, our understanding of the world cannot be divorced from our imagination; our imagination helps to construct the worlds we experience. Imagination is key to the human experience, allowing us to not only conceive of future possibilities but to make sense of current scientific data and models.

If imagination plays a role in making sense of science, then this would suggest a natural role for science and religion scholars. One of the most pressing issues for those who want "to take science seriously" is the disconnect between what science can confidently deliver and the "leaps of imagination" required to construct a scientific worldview, answering questions like "Why are we here" and "How should I live?" As I (2013) have argued elsewhere, because science is now a professionalized activity that requires extensive training over narrow domains, most scientists do not have the luxury to engage in philosophical system building. Steven Shapin (2001, 106) makes the same point when he says: "The conceptual unification of all the sciences on a hard and rigorous base of materialist reductionism… may be somebody's dream, but it's hardly anybody's work." The governments and companies that fund most of science want more tangible results than philosophy provides.

Nevertheless, there is a continual demand to understand the implications of science for nature and human existence. This is why scientific popularizers like Richard Dawkins are in demand, for he offers a complete system of nature that answers the questions of human existence. But as soon as one sets forth a candidate for the scientific worldview, one can raise legitimate questions as to whether he or she is substituting their own religious or philosophical interpretation of nature for a scientific one, stepping into the realm of speculative hypotheses and away from matters of fact.

This gap between what science can deliver and what is required to live in a scientific worldview is nicely captured by Leo Tolstoy.

> A plain, reasonable working man… expects science to tell him how he ought to live: how to treat his family, his neighbors and the men of other tribes, how to restrain his passions, what to believe in and what not to believe in, and much else. But what does our science say to him on these matters? It triumphantly tells him how many million miles it is from the Earth to the Sun… it tells of the chemical components of the Milky Way… 'But I don't want any of those things,' says a plain and reasonable man – 'I want to know how to live.' (Tolstoy 2009)

The most reliable theories of the sciences can tell us many important facts about the universe. But there is more to the universe then what can be measured or modeled mathematically.

How then do we make sense of the universe if it is radically underdetermined by our scientific data? If laypeople are going to really engage science at the level of lived experience, we need scholars who can imaginatively interpret scientific data for different contexts. I doubt this is a job to be left to scientists alone, for they normally lack the broad training necessary to provide a convincing imaginative rendering of the universe in which we find ourselves. The number of scientists who want to mechanistically explain away human purposes and intentions as "nothing but" the activity of atoms is as much a failure of interdisciplinary engagement as science. Many humanist scholars, by contrast, have not taken enough time to learn the sciences to offer larger narratives in a compelling way. I think science and religion scholars, who have been trained to move easily between scientific and religious frames of reference, are ones who can offer imaginative renderings of the larger world picture. While I would encourage the focus on specific problems in science and religion, I think there is still room for the imaginative integrator.

Conclusions

The problem faced by the field of science and religion parallels exactly the one faced by scholars in religious studies and the history of science. The very rationale for having an academic field called the history of science, as the historian Peter Dear (2005) explains, must be a "pragmatic, locally situated one, rather than the expression of a particular scholarly enterprise that takes its special character from the peculiar properties of its subject matter." The same holds true for the field of science and religion: our field exists not because "science" and "religion" are essential categories that need to be reconciled, but because our expertise allows us to promote stronger dialogues between scientific and religious communities by criticizing questionable assumptions that block fruitful dialogue. Above all, I think one of the biggest reasons to have a field of science and religion is

to sustain and pass on to the next generation of scholars our awareness of the flexibility and history of the categories of science and religion. A field allows sustained conversations over time so that we are not constantly reinventing the wheel; that is, constantly realizing that the conceptual tools that we use are affected by the assumptions we bring to them.

I hope that science and religion scholars, if nothing else, take away from my book how much movement has occurred in thinking about the nature of science — especially in the field of science studies — that should be more widely known and discussed. For all the value of the work of Ian Barbour, if the field is going to move "beyond Barbour," it will have to move beyond his, and the scholars of his generation, assumptions about the nature of science.

References

Brooke, John Hedley. 1991. *Science and Religion: Some Historical Perspectives*. Cambridge History of Science. Cambridge: Cambridge University Press.

Dear, Peter. 2005. "What Is the History of Science the History Of? Early Modern Roots of the Ideology in Modern Science." *Isis* 96: 390–406.

Gutting, Gary. 2000. "Scientific Methodology." In *A Companion to the Philosophy of Science*, edited by W. H. Newton-Smith, 423–32. Oxford: Blackwell.

McCauley, Robert N. 2011. *Why Religion Is Natural and Science Is Not*. New York, NY: Oxford University Press.

McGrath, Alister E. 2019. *The Territories of Human Reason: Science and Theology in an Age of Multiple Rationalities*. Oxford: Oxford University Press.

Murphy, Nancey. 1990. *Theology in the Age of Scientific Reasoning*. Cornell Studies in the Philosophy of Religion. Ithaca, NY: Cornell University Press.

Oreskes, Naomi. 2019. *Why Trust Science?* Princeton, NJ: Princeton University Press.

Reeves, Josh. 2013. "On the Relation between Science and the Scientific Worldview." *Heythrop Journal* 54 (4): 554–62.

Shapin, Steven. 1994. *A Social History of Truth: Civility and Science in Seventeenth Century England*. Chicago, IL: University of Chicago Press.

———. 1995. "Cordelia's Love: Credibility and the Social Studies of Science." *Perspectives on Science* 3 (3): 255–75.

———. 1995. "Here and Everywhere: Sociology of Scientific Knowledge." *Annual Review of Sociology* 21: 289–321.

———. 2001. "How to Be Antiscientific." In *The One Culture? A Conversation About Science*, edited by Jay A. Labinger and Harry Collins, 99–115. Chicago, IL: University of Chicago Press.

Tolstoy, Leo. 2009. *Last Steps: The Late Writings of Leo Tolstoy: The Late Writings of Leo Tolstoy*. UK: Penguin.

Van Huyssteen, J. Wentzel. 2006. *Alone in the World? Human Uniqueness in Science and Theology*. The Gifford Lectures 2004. Grand Rapids, MI: William B. Eerdmans.