

I advise scientists to leave this question to philosophers who specialize in epistemology. Though it's rather more popular, amateur philosophy is no less cringe-inducing to the professionals than is amateur science!

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1. What initially drew you to theorizing about science and religion?

It's a long story. It began in 1995, when I moved to the University of Tennessee in Knoxville, as a freshly appointed Assistant Professor of Evolutionary Biology. Up to that point I had never written about science and religion, though I had been an atheist since my high school days in Rome, Italy. A few months after I arrived in Knoxville I opened the paper and found out to my astonishment that the Tennessee state legislature was seriously considering a bill that would have mandated equal time for the teaching of creationism in the local public schools. I was flabbergasted, and suddenly the meaning of the term “Bible Belt” hit me, along with the recollection that Knoxville is only a short drive away from Dayton, TN, where the famous Scopes “monkey” trial took place back in 1925.¹

Together with some of my colleagues and graduate students I got into

¹ See *Summer For The Gods: The Scopes Trial and America's Continuing Debate Over Science and Religion*, by E.J. Larson, Basic Books, 1997.

action, writing to legislators and to the papers. Once the emergency was over (the bill never made it out of committee), I thought it would be better to take a pro-active stance about the whole evolution-creation “controversy,” rather than just going back to the lab as if nothing happened while the next crisis was brewing somewhere nearby.

So we started one of the first Darwin Day celebrations,² back in 1997, which soon got me to debate creationists, give public lectures about the nature of science, and write articles and books about it.³ As of this writing my professional interests (the nature of science and pseudoscience) and my outreach activities have pretty much converged, and I write about these matters equally for technical and lay audiences.⁴ I must admit that that initial shock in Knoxville has changed my life for the better, adding meaning to it. I have made good friends along the way, and I feel like I’m not just an academic locked up in the Ivory Tower, but one who doesn’t mind getting his hands dirty in public debates that matter.

2. Do you think science and religion are compatible when it comes to understanding cosmology (the origin of the universe), biology (the origin of life and of the human species), ethics, and/or the human mind (minds, brains, souls, and free will)?

The short answer is: no, on all counts. But let me elaborate. The question essentially asks whether religion has any credible epistemic authority in three areas: empirical understanding of the world, morality, and metaphysics. It seems to me beyond reasonable doubt that the first area is best served by science, while the other two are best understood as part of the practice of philosophy (with one caveat to which I’ll get in a moment). This, of course, is only a first approximation, since science cannot be done without a number of philosophical assumptions, and philosophy in turn cannot be done without science setting constraints and providing necessary factual and theoretical knowledge.

To unpack my position a bit, let me start with our empirical understanding of the world. It seems to me indubitable that religion, unlike science, does not have and could never have any means to reliably discover anything at all about how the world works. Religion consists of a mixture of superstition, mythology, and folk understanding. Indeed, religion’s record in this respect is simply abysmal. Creation stories from around the world have one thing in common: they are all

false. Granted, science doesn’t give us “the” Truth, only the best understanding that human beings can aspire to. But that’s resulted in an impressive track record (despite the occasional blunder and dead end⁵) to which religion simply doesn’t have any counter, at all. It’s not just that the Judeo-Christian-Muslim “account” of creation doesn’t have anything to do with what actually happened, it’s also that alleged parallels between the intuitions of certain religions (say, Buddhism, which at any rate hardly qualifies as a religion to begin with) and modern science are at best vague and at any rate would have remained entirely unsubstantiated had science not provided us with the means of empirically verifying our intuitions. And let’s not even speak of the creation myths of early polytheistic religions, such as the Greek-Roman ones.

When it comes to the second area, morality, the discussion becomes a bit more complicated, because folk wisdom does go a good way toward helping us with ethical questions, and if religions are, to a point, a distillation of folk wisdom then they can certainly be useful in this respect. The problem, of course, is the alleged source of moral authority claimed by religions: one or more supernatural entities who simply dictate what is right or wrong. Here I’m with Plato. In his *Euthyphro*⁶ he had Socrates brilliantly argue that even if the gods exist they cannot possibly be a good source for morality. This is because of the famous dilemma that takes its name from the main character in the dialogue: to get morality from gods means either that one is making an appeal to (divine) authority, which reduces morality to a matter of might makes right; or that even gods ultimately must appeal to some external sense of right and wrong, a sense that should be accessible to mere mortals as well, thus rendering the gods superfluous. I am, of course, aware that countless theologians have attempted to refute Plato on this, but in my opinion they have all failed abysmally,⁷ in some cases apparently without even understanding his argument.

Moreover, we have a very solid alternative to religion when it comes to ethics: moral philosophy. Philosophers have been preoccupied with ethical questions for literally millennia, and contra common wisdom they have made a lot of progress concerning them. For instance, we now have at the least three well articulated broad frameworks for thinking about morality: secular deontology (Kant),⁸ utilitarianism (Mill),⁹

² <http://www.bio.utk.edu/darwin/>

³ See in particular: *Denying Evolution: Creationism, Scientism, and the Nature of Science*, by Massimo Pigliucci, Sinauer, 2002.

⁴ See: *Philosophy of Pseudoscience: Reconsidering the Demarcation Problem*, ed. by Massimo Pigliucci and Maarten Boudry, University of Chicago Press, 2013. See also a number of entries at www.rationallyspeaking.org

⁵ *Scientific Blunders*, by R. Youngson, Carroll & Graf Publishers, 1998.

⁶ See <http://plato.stanford.edu/entries/plato-ethics-shorter/>

⁷ See Chapter 18 of *Answers for Aristotle: How Science and Philosophy Can Lead Us to a More Meaningful Life*, by Massimo Pigliucci, Basic Books, 2013.

⁸ <http://plato.stanford.edu/entries/ethics-deontological/>

⁹ <http://plato.stanford.edu/entries/utilitarianism-history/>

and virtue ethics (Aristotle).¹⁰ All of them have been constantly refined and applied to real situations affecting our lives. Just consider the role of biomedical ethicists in many modern hospitals, or the fact that cadets at West Point military academy are taught about virtue ethics and trolley dilemmas.¹¹ Or think about the huge influence of philosophers like John Rawls and Peter Singer in modern times. The list could go on for quite a while.

Finally, let me get to metaphysics, insofar questions about mind, free will and the like are concerned. Metaphysics is, of course, a branch of philosophy, albeit a more controversial one than, say, ethics, since some positions held by notable metaphysicians are difficult to separate from the sort of incomprehensible mysticism that is typical of religious metaphysics (e.g., I'm not sure that Heidegger's concept of Being makes a heck of a lot more sense than the Christian idea of transubstantiation). Modern analyses of free will,¹² with the debates between different schools of compatibilism and incompatibilism, are a lot more intellectually sophisticated and interesting (granted, if you are into that sort of thing) than anything proposed by theologians.

But it is also important to realize that there is a crucial debate going on these days among metaphysicians themselves, one about what one can only call meta-metaphysics, and that is very pertinent to the issue at hand. The disagreement is between defenders of what can be termed classical approaches to metaphysics¹³ and proponents of what is often called naturalized, or "scientific," metaphysics.¹⁴ The debate hinges on the role of science in metaphysics: the first camp sees science as essentially irrelevant to metaphysical inquiry, while the second group thinks that doing metaphysics without close connections to science is no longer tenable, if it ever was. I myself fall somewhere in the middle, since I think there is a continuum of metaphysical issues, some of which can benefit more and some less from input from the natural sciences. The point is that the field as a whole is very much alive and kicking, again in stark contrast to what I see coming out of theology. No surprise there, of course: if one's basic axiom in doing metaphysics is that there exists a transcendental world populated with one or more supernatural entities then one is very much off to a pointless start.

¹⁰ <http://plato.stanford.edu/entries/ethics-virtue/>

¹¹ <http://www.philosophyexperiments.com/fatman/>

¹² <http://plato.stanford.edu/entries/freewill/>

¹³ *Metametaphysics: New Essays on the Foundations of Ontology*, ed. by D. Chalmers, D. Manley and R. Wasserman, Oxford University Press, 2009.

¹⁴ *Scientific Metaphysics*, ed. by D. Ross, J. Ladyman and H. Kincaid, Oxford University Press, 2013.

And of course some of the examples mentioned in the question (brain and mind in particular) fall at the intriguing borderlines between philosophy of mind and cognitive science, which together represent one of the best current examples of bridges between the sciences and the humanities. Again, though, even here nowhere do I see any contribution from theology worth pondering more than a few minutes in the interest of peaceful academic relations and common courtesy.

3. Some theorists maintain that science and religion occupy non-overlapping magisteria—i.e., that science and religion each have a legitimate magisterium, or domain of teaching authority, and these two domains do not overlap. Do you agree?

No, I don't. The chief reason for it is that I think—as I have argued above—that the "magisterium" (to use Stephen Gould's famous phrasing¹⁵) of religion is actually empty. Religion has no authority when it comes to an understanding of the natural world, as Gould himself of course stressed. But it has also no authority in the realm of morality, contra Gould's somewhat naive and/or Pollyannaish view. There really is very little else to be said about it, I think.

4. What do you consider to be your own most important contribution(s) to theorizing about science and religion?

Good question. I don't know whether "important" is the appropriate word here, but I will mention two, one broad, the other more specific. My broad contribution, such as it is, can be found in the corpus of my writings aimed at the general public, particularly my *Denying Evolution: Creationism, Science and the Nature of Science*, as well as in *Answers for Aristotle: How Science and Philosophy Can Lead Us to a More Meaningful Life*.

In the first book I provide an analysis of the broad conflict between science and religion, with specific reference to the American cultural wars concerning the teaching of creationism and evolution. I interpret those clashes in terms of a long and well documented history of (partly religiously fueled) anti-intellectualism in the United States,¹⁶ as well as in terms of substantial public misunderstandings about the nature of science itself (misunderstandings in part fostered, unfortunately, by the way science is presented in-text books and in a significant portion of the popular science literature).

¹⁵ See: *Rocks of Ages: Science and Religion in the Fullness of Life*, by S.J. Gould, Ballantine Books, 1999. And also my critique of it in: Durm, MW and Pigliucci, M. 1999. Gould's separate 'Magisteria': two views, *Skeptical Inquirer* 6:53-56.

¹⁶ *Anti-Intellectualism in American Life*, by Richard Hofstadter, Alfred A. Knopf, 1963.

The second volume is more of a self-help book for people who don't believe in self-help books, so to speak. It begins by acknowledging that human beings seek answers to universal questions, about what makes their life meaningful, the role of friendship and love, the nature of morality and justice, and so forth. I then argue that religion, the classical source of answers for these kinds of problems, actually provides nothing of the sort, and that it is far better to turn to a combination of science (providing us with the best empirically-based knowledge of how the world works) and philosophy (which gives us the critical thinking, analytical tools to reflect on what we do and why we do it).

The more specific contribution I have to offer comes in the form of a paper I published in *Science & Education*,¹⁷ entitled "When science studies religion: six philosophy lessons for science classes." In it, I argue that it is an unfortunate fact of academic life that there is a sharp divide between science and philosophy, with scientists often being openly dismissive of philosophy, and philosophers being equally contemptuous of the naïveté of scientists when it comes to the philosophical underpinnings of their own discipline. I then explore the possibility of reducing the distance between the two sides by discussing some interesting philosophical aspects of research on scientific theories of the origin of religion. In the paper I show in what sense philosophy is both a discipline in its own right as well as one that has interesting implications for the understanding and practice of science. The upshot, as far as the present discussion is concerned, is that a combination of science and philosophy both explain the phenomenon of religion and completely undercut any claim of religion to have authority in either empirical or conceptual (including moral) matters.

5. What are the most important open questions, problems, or challenges confronting the relationship between science and religion, and what are the prospects for progress?

At the risk of sounding flippant, I do not think there are any open questions, aside from the (practically hugely important) ones of determining why religion persists and how to alleviate or diminish as much as possible its influence in society.

In this sense I treat religion as a form of pseudo-philosophy, just like, say, homeopathy is a form of pseudo-science.¹⁸ We know homeopathy doesn't work as a type of medical practice, and yet many people keep

using it, wasting financial resources and at least occasionally jeopardizing their own health by foregoing more efficacious remedies for their ailments. We also know, of course, that homeopathy does have some beneficial consequence, subsumed by the placebo effect; but we judge this positive aspect to be more than countered by the negative ones.

Similarly with religion. Yes, it does tap into many people's need for transcendence, a sense of community, and moral guidance. And religion has had positive effects throughout history, largely by inspiring many to do good things for humanity (it has, of course, also fostered or facilitated all sorts of horrific deeds). But we have likewise solid reasons to think that there is no fundamental truth to the claims of religion, and that we have ways of getting its benefits by way of other practices (i.e., deep meditation and secular humanism social practices and philosophy).

So the way I see it the challenge moving forward is to find more effective ways to reduce the influence of religion in favor of philosophy (broadly construed, not in the narrow sense of the modern academic discipline of that name), just like the challenge posed by pseudoscience is to find ways for people to abandon it in favor of the more solid, albeit of course always revisable, view of the world offered by science.

¹⁷When Science Studies Religion: Six Philosophy Lessons for Science Classes, by Massimo Pigliucci, *Science and Education* 22 (1):49-67, 2013.

¹⁸Nonsense on Stilts: How to Tell Science from Bunk, by Massimo Pigliucci, University of Chicago Press, 2010.