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## **Eight Central Questions on Science and Religion**

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#### **1. What is your definition of science and religion?**

Religion is the human response to the Divine as it reveals itself to humanity. It follows immediately that religious beliefs are inherently matters of dispute. Religious truth claims (on this definition) must be controversial to those who are not religious, since they do not believe that there *is* a Divine that has revealed itself to humanity. But the definition also helps explain dissent among religious traditions, since they differ on whether “he,” “she” or “it” is revealed and on what the content of this revelation is. When one concentrates on the differences between these accounts, one will speak of the *religions* of humanity; when one focuses on the one Divine Source for all the world’s different religious responses, then one will tend to emphasize the unity of religion.

Science is the disciplined empirical inquiry into the causes of phenomena in the natural world. Science in this sense represents the most rigorous body of knowledge that humanity has ever

achieved. Yet the predictive accuracy of science is bought with a price. The only claims that science can consider are those that are fully criticizable, that is, replicable by any group of researchers anywhere in the world. Claims that cannot be so tested fall under the category of metaphysics or the interpretation of science. This requirement of full intersubjective testability is responsible for most of the defining features of scientific practice. Scientific theories must explain any complex phenomenon in terms of its constituent parts; they must appeal to universal laws such that, knowing the laws and the prior state of affairs, one could predict future outcomes; and they must remain permanently open to revision based on new data or new experiments.

## **2. Do you see any conflict between your definitions of these two concepts?**

The initial impression one gets from the definitions is of widely differing attitudes and subject matters. “To be scientific” and “to be religious” initially appear as two vastly different activities and orientations.

Perhaps the most important breakthrough in 20<sup>th</sup>-century philosophy of science was the recognition that the well-known differences do not constitute a dichotomy: science is more “religious,” and religion can be more like science, than was previously thought. For example, science is not value-free; it too is influenced by institutions and paradigms; and what you take the data to be depends, at least in part, on what theory you hold. Conversely, religious believers can be rational and self-critical; they can entertain doubts and consider objections without ceasing to be religious; and they can create accounts of the world no less sophisticated and critical than the accounts provided by scientists. The similarities between the two are further increased when one compares science with *theology*, which is the critical systematic reflection on the beliefs of a religious tradition. In principle, theologians can advance their theories with the same critical attitude and openness to revision for which we praise scientists.

## **3. Where do you think there may be a conflict between these two?**

In the long run — or: in the end — I do not think that there will be a conflict between religion and science. If my belief in God as the Creator of the world, the One who is directing it toward its final consummation, is true, then the laws that govern the world can not be incompatible with the One who created them all.

But look at the word “if” that begins the previous sentence. Is the claim following the “if” true? I *hope* that it’s true, and I have *faith* that it’s true. But do I *know* that it’s true? I may have inner subjective certainty about it, and such certainty often passes as knowledge. In fact, however, it’s unlikely that *all* of my religious beliefs are true. For example, it’s possible that there are conflicts between certain of my religious beliefs and the facts about the world that science will finally establish. And I could be more wrong than I realize. I believe, for instance, that humans are free and morally responsible before God, but it’s possible that all human behavior is

determined. I believe that God guides the process of evolution in some ways, but it's possible that evolution is utterly random. I believe that reasons sometimes influence my thoughts, but it's possible that all of my thoughts are exclusively the result of the electro-chemical processes in my brain.

Some religious believers think that faith would be compromised — and maybe even God would be compromised — if one concedes that such conflicts are possible. I disagree. I have faith in the consistency of science with my religious belief, but only time will tell whether I am right. Knowing that I may be wrong in some of my religious beliefs adds a dimension of humility to my religious practice. It also makes one more humble when he encounters religious believers from other traditions, deeply spiritual people who believe different things about God and God's actions in history. Yet shouldn't we be humble where we differ from our fellow religionists, since it's just as possible that I may be mistaken as that they might be?

#### **4. What have been the grounds for the development of conflict between these two?**

I mention just four. First, scientists have often extrapolated beyond the conclusions warranted by the empirical data, substituting philosophical theories for justified scientific inferences. When the early Darwinians suggested that human society should be set up according to the “survival of the fittest” principle of evolutionary biology, such that (for example) sick children should be euthanized, they passed off an ethical judgment of their own as if it were a scientific conclusion. Second, religious believers have sometimes confused contingent historical and factual claims made within their traditions with the core, irreplaceable religious content of those traditions. Thus the Catholic church censored Galileo for teaching that the earth might orbit the sun, believing (falsely) that the then-current cosmological model was a necessary tenet of the Catholic faith. Third, both sides have let their interpretation of religion-science relations be colored by inaccurate models. Thus both scientists and believers have in the past assumed a “conflict” or “warfare” model of the relationship. Little wonder then that, having assumed the conflict from the outset, people thought they found examples of conflict wherever they looked! Fourth, the state of science at certain moments of history, and the state of religious thought at those moments, have in fact created situations in which genuine conflicts existed. Physics from (roughly) Newton to the 20<sup>th</sup> century *was* in conflict with theism; Darwinism until the development of non-deterministic “emergentist” models was in conflict with theism; and the dominant attitude within the neurosciences today is in conflict with theism. Again, however, the stance of faith — the hope on which I wager my life's orientation — is that all such conflicts are temporary, not permanent.

#### **5. What has been the role of religion in the development of science in the West?**

Other authors in this book have already explored the many ways in which religion has made positive contributions to the development of science. Some have argued that, without the belief in God, science as we know it could never have developed.

Thankfully, recent years have seen the development of a new specialized discipline, the history of science-religion interactions. Important new work is being carried out on the history of these interactions in the West, and excellent scholarship is now available on the growth of science within Islamic civilization. (One also notes the recent explosion of interest in the contribution of the Indic traditions to the development of science.) Regarding the Western context one thinks, for example, of the many publications by John Hedley Brooke, Ronald Numbers, and David Lindberg, among others. This spate of recent scholarship has led to a very nuanced understanding of religion's contribution to the growth of science. Given the data, one cannot maintain that the role of religion has been uniformly positive for science, but neither can one conclude — as was once held — that religion has always served as the enemy of science, inhibiting its progress.

## 6. Can we have a religious science?

This is a wonderful question because it allows us to differentiate four different aspects of the relationship between science and religion:

- Does the pursuit of science belong to any specific religious tradition, or to religion as a whole? Clearly not: scientific activity represents a dispassionate quest for accurate knowledge of the physical world. Such knowledge, in and of itself, is not at the outset either religious or anti-religious. At the fundamental level, then, science is neutral on the topic of religion.

- Can science however be *used* for religious or other purposes? Most certainly. Unfortunately, some of the least attractive episodes in the history of science have involved science being co-opted to serve a religious or anti-religious agenda. One thinks of the embarrassing Lysenko affair in the former Soviet Republic, in which biology was used to support the Communist agenda.

- Does science sometimes have implications, direct or indirect, for religious questions? Most definitely! (We return to this topic in the final question below.)

- Can science be pursued with a religious mindset, or with religious motivations, or by religious persons as an act of obedience to the Divine? Yes; thankfully the days are gone when people assumed that only the non- or anti-religious person could do world-class science. There are beautiful accounts by Nobel-winning scientists of how their faith and observance as a Muslim, Jew, Christian or Hindu aided and supported their work as scientists. The 120 members of the international project “Science and the Spiritual Quest” or “SSQ” (of which the editor of this book was a member) have given frequent and moving testimonies to the deep contributions which their spiritual and religious lives have made to their doing of science. I strongly recommend for your reading the two SSQ collections of scientists' writings, *Faith in Science* and *Science and the Spiritual Quest: New Essays by Leading Scientists*, both edited by W. Mark Richardson *et al.*

## 7. Can science dispense with religion?

Here we encounter one of those questions where the task is to understand why the answer must be both Yes and No, albeit in different senses. Yes: it's basic to the scientific method that scientific theories do not need to appeal to religion for their validity. There would be no science if the results of physics experiments turned out differently for Hindus, Muslims, and Christians. Every scientist knows the experience of meeting people from vastly different cultures, languages and religions and yet finding himself in complete agreement with them about the core theories and results of their shared field of science. This ability to abstract from religious and other personal differences is part of the methodology that makes science successful in its sphere, and religious believers should not be disturbed by this fact.

But No: if we are ultimately to understand the results of science, we can never dispense with the religious question. Science is not self-interpreting; in order to understand its own results it must draw on broader philosophical resources. Religion plays an indispensable role in this task.

## 8. Can one separate the domains of activity of science and religion completely?

This question stems beautifully out of the previous one. I can only conclude this short essay with a religious response. Science can dispense with religion for a season. In fact, one of the great achievements of the human spirit is its ability to make this abstraction, to study the empirical world in and for itself apart from ultimate questions. It is a magnificent monument that we have been able to build by making this separation. Indeed, ironically, the monument of science is a powerful testimony to what it means for humanity to be created in the image of God.

In the end, though, the study of science leads invariably back to religious questions. We ask, "What is this universe we have come to understand? What made it as beautiful, as rational, as well-ordered as it is? What is the place of humanity, of me or you, in this vast order? Is there meaning in it all — meaning for life, meaning for humanity, meaning for each individual?" Science eventually poses existential questions, just as it poses philosophical questions of interpretation. Gradually one follows the lines of interpretation further and further — from specific interpretations of concrete theories, to broad interpretations of (say) physics as a whole, to the interpretation of the physical order, and ultimately to the deepest metaphysical questions: Why is there something rather than nothing at all? Imperceptibly, one finds himself sliding over to questions whose religious significance is indisputable. The separations (walls) that made science possible in the first place gradually collapse, and one finds oneself confronted again with the ultimate religious question, the question of the Divine and its self-revelation in the world. At that point, in the beautiful words of T. S. Eliot in *Little Gidding*:

We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started

And know the place for the first time.