

# Editorial

## SCIENCE, RELIGION, AND CULTURE

The phrase “science and religion” has become widely used to denote a particular area of academic discussion. However, both key terms are seriously problematic. There have been huge historical changes in what has been meant by them, as Peter Harrison among others have pointed out (Harrison 2015). There is also a good deal of cultural variation in what is meant by both “science” and “religion.” We will here consider historical and cultural variations in what has been and is meant by these two crucial terms, and then discuss the implications for work on the interface of “science” and “religion.”

### “RELIGION”

The term “religion” in North Atlantic Western traditions has changed in its meanings quite radically in the nineteenth century. The problems associated with the term “religion” have been set out by scholars such as Wilfred Cantwell Smith ([1962] 1978) and Nicolas Lash (1996). As Lash points out, for Aquinas, and even for Calvin, a person’s “religion” was their rule of life; it was only much later than that when it became a matter of private personal piety. A general distinction opened up in the nineteenth century between the public and private worlds, and religion increasingly came to be seen as a private matter. (Much of the work in secular studies and on the processes of secularization have focused their attention on the paradigmatic shift of “religion” from wholly public, a wider reaching consensus on the rule of life and that which rules it, to the private sphere as a consequence of the changing relational attitudes that one would have with their neighbor and community).

There is debate about the early roots of this divide between public and private, though etymological data suggest that there was a crucial turn toward the subjective world at the end of the seventeenth century (Barfield 1953). Charles Taylor has reflected at length on this subjective turn throughout his career and synthesized his reflection in his *A Secular Age* (2007). He argues that this turn began in the sixteenth century during the Reformation when authority of scripture shifted from absolute control held by the clergy and into the hands of the layperson (Taylor 2007). This, Taylor claims, was the first step toward religion becoming private. Galen Watts (2022) has subsequently traced the historical roots of the

self-focused “religion of the heart” that has become ubiquitous since the 1960s.

Of course, theology was never happy with that, and has been struggling ever since to find ways of asserting its objectivity.

Over the course of a few centuries, the fact remains, however, that, in the North Atlantic West, where science is most highly developed, religion is now widely regarded as being a private matter. For example, in as far as Donald Trump had any intellectual argument to support his statement that it was disgraceful for the Pope to question his credentials as a Christian, his point was that religion is a private matter and, as such, it was not something that the Pope was in a position to question (Wirzba 2016). However, theology has never been happy with the idea that religion is a private matter and has sought various ways in which it could be seen as objective, often taking revelation as playing a role in religion comparable to the role of data in science. Both are versions of foundationalism, though philosophers have been increasingly moving away from foundationalism altogether.

“Religion,” while conjuring relatively uniform thoughts among individuals in the North Atlantic West, means different things in different faith and geographical contexts. The late nineteenth century was fascinated by taxonomies and liked to find overall categories under which it could give a list of examples. For example, the concept of emotion as we now understand it was an invention of the late nineteenth century and involved bringing together, under a single heading, things which had previously been differentiated, such as “passions” and “affections” (Dixon 2003). In fact, however, emotions proved to be rather disparate, and it became necessary for twentieth-century psychology to rediscover something like the old distinctions that had been lost.

In a similar way, the nineteenth century invented the general category of “religions,” with a list of world religions. For example, the British stated Hindu-“ism” as a religion in an effort to gain a proper census of the territory. However, the various things listed under the category of religions again turned out to be very different from one another. Problems with the categories of “emotion” and “religions” turn out to be rather similar, and to reflect a general problem in the nineteenth-century approach to categorization (Watts 2019a). The problem about the concept of a series of world “religions” arises from the fact that if you ask a Jew, a Muslim, a Hindu, or even a Tibetan Buddhist, what his or her “religion” is, it is a very odd question. It is a question that arises from the prevailing view about what religion is in the post-secularized Christian West, rooted in a taxonomic tradition, a view that is to some extent shared by Western Buddhism, but not by other faith cultures.

For the most part, “religion,” around the world, is intertwined with ethnicity and cultural identity. Christianity, and to some extent Western

Buddhism, are much less matters of cultural identity, and—for those who freely have this as an option available to them—more a chosen spiritual path. Of course, this distinction is not an absolute one. Some people convert out of personal conviction to religions that are primarily a matter of cultural identity, and allegiance to particular forms of Christianity *can* be a matter of cultural identity, as in Ireland. However, the point remains that the so-called world religions are not all quite the same thing, and most are more connected with cultural identity than is Christianity.

Identifying a series of world religions led to the problem, for Christian theologians, of how to approach the relationship between them. An early and relatively sophisticated attempt to grapple with that problem was F. D. Maurice's book on *The Religions of the World and their Relations to Christianity* (Maurice [1847] 1886). He quickly discarded the view that all religions are essentially the same, and also rejected the view that Christianity had nothing to learn from any other religion. He then set himself the demanding task, as a Christian theologian, of discerning exactly what was to be learned from each of the other world religions.

It has been widely recognized by those studying religion in the human sciences that religion has various different components. There are many slightly different ways of making distinctions between different aspects of religion, but most make a distinction between experience, practices, and beliefs (Watts 2017). The significance of this in the present context is that the different religions emphasize different components. For example, Christianity tends to emphasize beliefs, whereas Judaism places more emphasis on practice. The mystical strand in most religious traditions place more emphasis on experience. It is probably the case that religions that place a strong emphasis on belief, such as Christianity, have tended to have a richer engagement with beliefs in science.

"Spirituality" has always been a significant part of religious traditions but, in recent decades, people and groups committed to spirituality are increasingly to be found outside religious traditions (Heelas and Woodhead 2005). The contemporary turn to spirituality can be conceptualized in many ways, though it is reasonable to see it as a quasi-religious tradition, with its own distinctive approach to belief, experience, and practice. This leads to a distinctive way of connecting science with the spiritual worldview found, for example, in Ursula Goodenough's *The Sacred Depths of Nature* (1998). Wesley Wildman's engagement with science from the perspective of "religious naturalism" (Wildman 2014) in many ways embraces the world view of those who see themselves as "spiritual but not religious."

Again, science communication has had a role in shaping spirituality as something "not religious," but as antithesis to religion. Science communicators such as Carl Sagan, Jacob Bronowski, David Attenborough, Neil deGrasse Tyson, Brian Cox, among others, have engaged in attempts to

bring a spiritual quality to their science communication, able to share these messages with millions, and in some cases billions, of viewers through their respective programs. Common religious sentiments of transcendence, oneness, reverence, and an ethical imperative for care and stewardship over Earth and its inhabitants have all been directed toward fulfilling the need for ecologically minded renewal, co-habitation with nature (of which humans are descended from and part), and increased science literacy. The outcome of such narratives has been a sense of connection to the “spiritual but not religious.” It is debatable whether those who see themselves as “spiritual but not religious” are correct in regarding their viewpoint as nonreligious. It can equally well be argued that it blends spirituality with a different strand of religion, rooted in romantic liberalism (Watts 2022).

### “SCIENCE”

It was in the latter half of the nineteenth century that the primacy of “science” in the public world began to be asserted very strongly, and as a result, according to theorists and historians of secularization, religion became increasingly cast into the private world. Substantial developments in scientific reasoning and experimentation, aided by the economic and political goals of England and Europe, became linked to notions of progress, and European dominance over their rivals and colonized lands and people. Two factors were critical to the increasing publicity of science and its relation to social structures.

The first was the development of cheap printing. As Owen Chadwick (1975), James A. Secord (2000, 2014), and Bernard Lightman (2007) have shown, the development of cheaper printing technologies and access to more versatile materials (i.e., thinner, and therefore cheaper paper) was instrumental in bringing the most recent developments of natural history and natural philosophy to the masses. Best-selling books like *Vestiges of the Natural History of Creation*, published anonymously by Robert Chambers ([1844] 1994), and *Other Worlds Than Ours* (1870), by Richard Proctor, sold over 33 and 22 editions, respectively, while popular scientific, medical, and technical periodicals dramatically increased from 53 publications in 1800–1809 to over 400 in 1880–1889 (which includes both Chamber’s *Edinburgh Journal* and Proctor’s *Knowledge*).

The second was the increased use of newly developed tools and technologies for science communication. Lightman has written at length on science popularization and communication during the Victorian era (2007), revealing not only how cheap publishing influenced science communication, but also how new discoveries in palaeontology and archaeology lent themselves well to novel technologies such as dioramas and the photograph. In Germany and France too, science communication shows were a popular way for the middle classes to stay informed while being

entertained via new and wondrous means. The very idea of “science” as a set of practices and dispositions that could easily be identified by anyone was solidified during this time of public display and spectacle.

There is a further issue about what is meant by science in different contexts—times, places, cultures, faith traditions, and so on. Science is widely regarded in the minds of the developed world as having transcended cultural context. However, such an understanding of science has been argued against in the social sciences of science for quite some time. Furthermore, that view is not universally shared from culture to culture, and such an ideal is in fact the product of a particular cultural tradition. From some cultural perspectives, present-day science looks very dominated by Anglo-American culture, and reflecting the cultural values of the context in which it has most flourished.

Parallel to the belief that science has transcended cultural context is the widespread view that science is independent of metaphysical assumptions. However, philosophers of science, from the 1960s onward, have been increasingly emphasizing the extent to which science makes metaphysical assumptions (Harré 1986). In particular, it is often taken for granted that science necessarily makes secularist assumptions. However, anyone with a historical perspective would have to concede that scientists such as Isaac Newton made genuine scientific advances without making secularist assumptions. It could similarly be said for Albert Einstein’s famous line written to Max Born that “*He* [God] does not play dice,” revealing the metaphysical position that he had against interpretations of the new quantum mechanics. Those engaged in work on the interface of science and religion have often emphasized the important role of metaphysics in science, and seen the theological engagement with science as largely mediated through metaphysics (Polkinghorne 2009). As Barry Barnes, David Bloor, and John Henry (1996) have argued, the metaphysical assumptions of contemporary science do not follow from scientific data, but reflect prevailing sociocultural presuppositions and practices.

There is also a divergence of views about whether science should be understood primarily as a methodology for ascertaining the truth of things, or as a body of knowledge. In Western culture, “science,” popularly understood, is largely assumed to be the knowledge, know-how, and method that has emerged from contemporary scientific research. The Muslim majority world probably has a rather different understanding of “science,” though the Muslim public understanding of “science” has not yet been thoroughly investigated. However, there are positive changes occurring to rectify this (for example, see Malik 2021). There may be a divergence between a positive general view of science that is grounded in the Quran and in history (through metaphysics; Polkinghorne 2009) and a more negative view of contemporary scientific research, which is sometimes regarded as being unduly influenced by Western secularist assumptions.

There are also divergent approaches to the authority of science, linked to different assumptions about whether or not contemporary science is likely to develop further, and to be subject to further paradigm changes. There is a tendency in some circles to think that present-day science has sufficient authority that some things can be ruled out because they are incompatible with present-day scientific assumptions. However, for those who think that we may be only at the foothills of scientific understanding, and that science may shift considerably in its assumptions as it progresses, present-day science cannot be accorded that authority. William James asks with respect to science: “Is it credible that such a mushroom knowledge, such a growth overnight as this, can represent more than the minutest glimpse of what the universe will really prove to be when adequately understood? No! our science is a drop, our ignorance a sea. Whatever else be certain, this at least is certain—that the world of our present natural knowledge is enveloped in a larger world of some sort of whose residual properties we at present can frame no positive idea.”

Another complexity about science is that the various sciences are rather different from each other. While publicly, science is communicated as a set collection of cognitive and investigative practices, there are, in fact, a range of scientific methods, with “family resemblances” between them; but there is no single scientific method that is applied in exactly the same way to different investigations. In recent years, work on science and religion has broadened in terms of the number of sciences involved, with an increasing focus, for example, on psychology, social science, artificial intelligence, and ecology. Broadening the range of sciences involved could potentially have a significant impact on the whole field, though we may not yet have thought that through. For example, the social sciences provide a critical perspective on the whole science-and-religion endeavor.

#### WAYS OF RELATING “RELIGION” AND “SCIENCE”

The complexity outlined here, while not probing all the many possible complexities, strongly suggests that the way both “religion” and “science” are conceptualized has significant implications for work on the interface between them and brings into focus a challenge for anyone working in this field. Because the world faith traditions differ, not just in detail, but in what kind of “religion” they are, they will have different ways of engaging with the sciences. This is further complicated by the fact that different faith traditions are associated with different ways of understanding science generally, have different assessments of it, and have different historical trajectories and relationships with the different sciences specifically.

So far, Christianity has produced a more significant and robust body of intellectual work on the interface with science than any other faith tradition. However, it follows from what has been said here that it would be a

mistake to suppose that other faith traditions will produce a comparable body of work engaging with science, different in detail, but parallel and similar in character. It increasingly seems that would be a naïve assumption. Different religions will engage with science in different ways, whether to a greater or lesser extent.

The engagement between science and religion in the Christian West has, in many ways, been dominated by the conflict thesis that was discussed in the United States and Britain in the last quarter of the nineteenth century onward (Ungureanu 2019). A great deal of intellectual energy in the field of “science and religion” has gone into responding to the conflict thesis, demonstrating that, in the Christian West at least, the idea of conflict is not something that can easily be ignored, even as the “complexity” framework takes a more central position within the field. However, things appear to be changing in this regard, and younger scholars working on “science and religion” seem to both be increasingly impatient with the dominance of the conflict paradigm which arose in the Christian West, but which does not have the same pertinence in other cultures, and exploring novel interpretations of what “science and religion” mean and how far the field can reach.

As an example, consider the engagement between Buddhism and science. While in the Christian West, it may seem obvious that there is a significant difference between, on the one hand, the scientific study *of* religion and, on the other, bringing the understandings and rational reflections of science and religion into dialogue with each other, that distinction is not as obvious from a Buddhist perspective. The interface between science and Buddhism has focused largely on contemplative science, and has brought together scientific and Buddhist understandings of contemplative practice. It is, at the same time, a contribution to the scientific understanding of a religious practice, and a dialogue between different approaches to understanding it. The Buddhist understanding of mind and mindfulness is seen, not as something completely different from the science, but as an early body of scientific understanding. From that perspective, there is no gulf to be bridged between Buddhism and science; it is more a dialogue between historical and present-day scientific approaches.

Various other paradigms for work on the interface of science and religion appear to be emerging, and we will briefly mention three. One alternative is that, rather than science and religion just talking to each other, they could bring their combined perspectives together to bear on a significant world problem such as the urgent environmental crisis. The importance of science in that crisis is self-evident. However, if there is to be a real change in carbon emissions, there are also problems of motivation, attitude, and moral position. It is possible that a religious response to the environmental crisis built on its understanding of creation, might be one of the most effective ways of mobilizing energy and commitment

for change, given that most of the world's population is religious in one way or other. Claims for "religiopoiesis" (e.g., Goodenough 2000), that is, crafting a new religion that aims to induce environmentally beneficial behavior based on a creation narrative rooted in science provide provocative cues for further work in this area.

Yet another paradigm would focus on the radical agenda of seeking to transform both science and religion through mutual contact between them. Much work on science and religion has been content to take both science and religion as they are, and to harmonize them as far as possible. However, there has always been the possibility of seeking mutual enhancement of both science and religion as a result of engagement between them. Of the various science and religion groups, the "Epiphany Philosophers" exemplify that radical agenda most clearly (Watts 2019b). They have wanted to use the empirical approach of science to renew religion, rooting it more securely in contemplative experience, and to use religion and philosophy to challenge some of the dogmatic metaphysical assumptions that stand in the way of science being a genuinely open-minded enquiry.

Yet again, multifaith work on science and religion can be used to enhance cross-cultural understanding between parts of the world where different faith traditions predominate. Religions do not always get on with each other harmoniously. One of the founding hopes of the International Society for Science and Religion (ISSR) was that conducting the dialogue between science and religion on a multi-faith basis, in the aftermath of 9/11, would contribute to global peace and harmony between different faith traditions. It was always, in that sense, a reconciliation project. That is as relevant now as it was 20 years ago, though it has hard to find the right way to carry it forward. The second conference of ISSR in 2004 tried to set out a cross-cultural, multi-faith agenda (Watts & Dutton 2006). Cross-cultural work on science and religion can make a valuable contribution to better understanding between cultures. Also, *Zygon: Journal of Religion and Science* (first issue: March 1966), and the two organizations originally behind it (since 2019, ISSR has joined as a third sponsoring organization)—the Institute on Religion in an Age of Science (IRAS, 1954) and the Center for Advanced Study in Religion and Science (1972)—has been engaging in significant cross-cultural conversation and is planning to continue to do so.

In conclusion, it is time to discard the idea that there is any single dialogue between science and religion. There are multiple ways of relating science and religion, arising from the fact that both science and religion can be understood in significantly different ways in different cultures and different contexts. The broadening of both the range of sciences and the range of religions in work on "science and religion" has led to a much more



diverse and exciting range of ways of relating them, and one in which cultural context is emerging as being of primary importance.

#### IN THIS ISSUE (BY ARTHUR PETERSEN)

The opening article for this issue engages an acute example of where science, religion, and culture meet in the specific policy setting of dealing with sustainability in cities around the world. Jason Sexton and Stephanie Pincetl highlight that sustainable approaches for the future are better found working within different religious traditions' theologies and ethical outlooks than in simply applying the modernist paradigm; their focus here is on particular character virtues (e.g., parsimony and future mindedness) that can contribute to visions of sustainability and assist in bringing about a more just transition in cities.

Moving away from the specific thematic of this editorial: this December issue contains contributions on a wide variety of science-and-religion themes.

In the second article in the "Articles" section, Gijsbert van den Brink addresses the subject of (im)mortality from the perspectives of theological anthropology and evolutionary biology; he offers an ecumenical solution to the conundrum of whether human death is seen as "natural" or "unnatural" (using an Augustinian distinction between strong and weak immortality).

This issue of *Zygon: Journal of Religion and Science* furthermore contains four thematic sections. In the "Comment and Response" section, Travis Dumsday comments on Flavius Raslau's article in this year's March issue on the integration of Orthodox theology with contemporary metaphysics of science (Raslau 2022), and Raslau responds. The second section is on "Artificial Intelligence and Religion: Recent Advances and Future Directions," which is introduced by guest editor Andrea Vestrucci. The third section is a book symposium on Roje Kojonen's book *The Compatibility of Evolution and Design*, collated and introduced by Zachary Ardern. And the fourth, and final, section contains this year's Boyle Lecture, given by Chris Southgate, and the response, by Andrew Davison.

The issue ends with five book reviews. Hans Van Eyghen reviews Wesley Wildman and Kate Stockly's *Spirit Tech: The Brave New World of Consciousness Hacking and Enlightenment Engineering*, Henry Wang reviews Scott Midson's *Cyborg Theology: Humans, Technology and God*, Ankana Das reviews Susan Power Bratton's *Religion and the Environment: An Introduction*, Daniel James Fairbrother reviews Charles Turner's *Secularization*, and Michelle Baron reviews Joseph Laracy's *Theology and Science in the Thought of Ian Barbour: A Thomistic Evaluation for the Catholic Doctrine of Creation*.

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