Introduction
After Science and Religion?

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The present literature on science and religion tends to be dominated by three genres: a conflict genre, according to which science and religion are locked into a relationship of perennial opposition; a disentangling genre, in which science does one sort of thing and religion does another; and a synthetic genre, in which science and religion are integrated, overlapped, or in some way related to each other in generally positive ways. While on the face of it these approaches could hardly be more divergent, in fact they share a common commitment to the idea that 'science' and 'religion' are valid, trans-historical categories that capture more or less perennial features of human culture. If it is true that science and religion, albeit in various guises, have been the chief lenses through which the world has been interpreted, then posing the question of how they relate to each other makes good sense. But what if it is not true? The guiding principle of the present collection is that we can initiate a much more fruitful discussion if we begin by questioning these two basic categories that frame and delimit the current conversation about how to interpret the world. *After Science and Religion* is thus an exploration of how the discussion might be changed if we were to relinquish, or at least critically examine, these two categories 'science' and 'religion'.

Historians of science have contended for some time now that the familiar concept of 'science' is a relatively recent one. They point out that while it is tempting to speak of ancient Greek science, medieval science, seventeenth-century science, and so on, in fact that terminology is deeply misleading, particularly if it is assumed that the activities in question are more or less analogous to the scientific enterprise as we presently understand it. The same is true for the 'sciences' of other cultures – Islamic science, Chinese science, Indian science.[1] The study of nature in the past

[1] See Peter Dear, 'What Is the History of Science the History of?', *Isis*, 96 (2005), 390–406; Andrew Cunningham, 'The Identity of Natural Philosophy', *Early Science and Medicine*, 5 (2000), 259–78;

was so often caught up with philosophical, ethical, and religious concerns that to regard it as a direct analogue to modern science is to seriously misunderstand what was going on. Scholars of religion have made similar claims for the putative object of their study: 'religion'. The idea of a generic 'religion', and of plural 'religions', understood as competing sets of beliefs and practices, is argued to be a product of the early modern West, arising as a consequence of both the religious reformations of the sixteenth century and the voyages of discovery and colonial projects that coincided with them.[2] In medieval Christendom, for example, we hardly ever encounter the expression 'religion'. Arguably, subsequent early modern attempts to understand and categorise 'other religions' in terms of propositional beliefs led only to a distorted view of the phenomena in question.

In *The Territories of Science and Religion* (2015), Peter Harrison brought these two scholarly developments together, showing how the historical processes that led to the reification of the two categories 'science' and 'religion' are connected, and offering glimpses of how the present conversation about science and religion might be radically reconfigured if we were to take seriously the historically contingent nature of the terms in which it is conducted. Harrison has been building bridges to both scientists and theologians for some time now, seeking to persuade them to move away from boundary and terrain disputes and to look at the entire landscape differently. His work suggests that a more historically informed and philosophically open attitude to first-order questions about the nature of natural knowledge and higher meaning, and an appreciation of where they cannot escape mutually entailing each other, would greatly improve the quality of investigation. Harrison is something of an ambassador for putting standard notions of conflict, demarcation, and limited synthesis between variously understood 'solid' notions of science and religion behind us. This message is starting to be heard outside the spheres of the history of science and religious history. In this volume a rather distinctive

Peter Harrison, Ronald L. Number, and Michael H. Shank (eds.), *Wrestling with Nature: From Omens to Science* (Chicago: University of Chicago Press, 2011).

[2] The classic work here is Wilfred Cantwell Smith's *The Meaning and End of Religion* [1962] (London: SPCK, 1978). But see also Peter Harrison, *'Religion' and the Religions in the English Enlightenment* (Cambridge: Cambridge University Press, 1998); Guy Stroumsa, *A New Science: The Discovery of Religion in the Age of Reason* (Cambridge, MA: Harvard University Press, 2010); Brent Nongbri, *Before Religion: The History of a Modern Concept* (New Haven, CT: Yale University Press, 2012). On the interface of politics and religious studies, see Elizabeth Shakman Hurd, *Beyond Religious Freedom* (Princeton, NJ: Princeton University Press, 2015). In theology, see Nicholas Lash, *The Beginning and End of 'Religion'* (Cambridge: Cambridge University Press, 1996); William T. Cavanaugh, *The Myth of Religious Violence* (Oxford: Oxford University Press, 2009).

group of philosophical theologians and theologically interested philosophers and scientists take up Harrison's ideas and explore their implications for a new kind of discussion about science and religion.

What difference, then, does this historical analysis of the categories make, and how can it inform new and fruitful conversations? There is no single answer to this question, and our contributors offer a range of responses. But there is also a significant convergence in their perspectives. One thing that clearly emerges from the genealogy of the categories 'science' and 'religion' is just how historically contingent their appearance has been. In other words, the fact that we now tend to think in these terms – 'science' and 'religion' – is not necessarily a matter of finally having arrived at precise categories that describe discrete realms as they really are, but is rather the end product of specific historical developments that might well have given us different categories. It also follows that there was a *before* science and religion, as well as a possible *after* science and religion, and the former can help shed light on possibilities for the latter. When we abandon the attempt to impose our present concepts on the past, we are in a position to see how past actors entertained very different understandings of how the formal study of nature (our 'science') was related to the fundamental questions of meaning and value (our 'religion'). The category 'natural philosophy', which was in use from the time of the ancient Greeks until well into the nineteenth century, and which was the term most analogous to our modern 'science', offers a good example.[3] Natural philosophy was a branch of philosophy. It often included in its scope the activity of God and the angels, and was also intimately connected to the moral and religious formation of the person. Natural philosophy is thus very different from modern science if for no other reason than it includes these moral and religious components. How we get to naturalistic, value-free, modern science from this earlier, religiously inflected 'natural philosophy' is highly informative for our present thinking about how the realms of meaning and value should impinge upon the conduct and

[3] On the category 'natural philosophy', see John Gascoigne, 'Ideas of Nature: Natural Philosophy', in *The Cambridge History of Science*, vol. 4, ed. Roy Porter (Cambridge: Cambridge University Press, 2003), 285–304; John Heilbron, 'Natural Philosophy', in Harrison et al. (eds.), *Wrestling with Nature*, 173–99. On its religious connotations, see Andrew Cunningham, 'Getting the Game Right: Some Plain Words on the Identity and Invention of Science', *Studies in History and Philosophy of Science*, 19 (1998), 365–89; Peter Dear, 'Religion, Science, and Natural Philosophy: Thoughts on Cunningham's Thesis', *Studies in History and Philosophy of Science*, 32 (2001), 377–86. Peter Harrison 'Physico-Theology and the Mixed Sciences: The Role of Theology in Early Modern Natural Philosophy', in Peter Anstey and John Schuster (eds.), *The Science of Nature in the Seventeenth Century* (Dordrecht: Springer, 2005), 165–83.

content of the natural sciences and about the possibility for the future reconnection of these domains.

A second pay-off of close study of the emergence of the categories 'science' and 'religion', and indeed of simply attending more closely to the history of science, is that it reveals how the modern sciences, during their early modern incubation, drew strongly and explicitly on particular metaphysical and theological assumptions while at the same time rejecting others. Once we become aware of these (now largely implicit) foundations, we can ponder the extent to which modern science remains tacitly indebted to them. This, in turn, can inform our thinking about how different various sciences might look had they drawn upon alternative theological and metaphysical positions, and indeed whether they might in future be reshaped and redirected in fruitful ways by such alternatives.

Third, in addition to attending to the implicit philosophical commitments that continue to inform scientific practices from within, we are now in a position to see more clearly how and why a particular philosophical outlook – analytic philosophy – has tended to dominate contemporary Anglophone science–religion discussion from without. It is typically assumed that this mode of philosophising can bring clarity and precision to the discussion and provide a neutral bridging language that facilitates conversation between the two parties. But for this very reason, the approach of some analytic philosophers has the potential to exacerbate the distortions inherent in the categories themselves, often reducing 'religion' and 'science' to their propositional contents or their approaches to knowledge, and thereby disembedding them from their real-life contexts. Philosophy of science in the analytic mode is thus often indifferent (or even hostile) to the history of science and the sociology of science, both of which seek to attend closely to the messy reality of the actual practices of scientists in ways that resist abstraction and oversimplification. Moreover, because analytic philosophy is often self-consciously modelled on what science is imagined to be, it is usually accompanied by a commitment to naturalism, whether overt or not, which is in tension with its imagined neutrality.[4] It is no coincidence, then, that a number of the theological and philosophical thinkers engaging with Harrison in this volume are more representative of continental philosophy and sociological theory. Their

[4] The philosopher W. V. Quine (1908–2000) epitomises both tendencies. See, e.g., Sander Verfaegh, *The Nature and Development of Quine's Naturalism* (Oxford: Oxford University Press, 2018). For science as the model for philosophy, see Stephen Gaukroger, *The Failures of Philosophy: A Historical Essay* (Princeton, NJ: Princeton University Press, 2020), 261–82, 287.

theological influences are closer to Catholic and Orthodox approaches than Reformed thinking.[5] Of course, it is important not to overdraw the distinctions between 'analytic' and 'continental' philosophy, which in recent years have become less distinct. And the philosophy of science itself, particularly when historically inflected, has challenged narrow positivistic conceptions of science. That said, this volume seeks to introduce a new flavour of philosophical theology into the science and religion space. While the philosophical theologians contributing to this collection by no means represent a unified school, they do share a deep historically embedded theological awareness that has resisted the territorial boundaries of post-Victorian thinking. For this reason, they have never really been a part of discretely *religious* theology; they have never assumed that theology is defined by a distinctively religious domain.

Finally, awareness of the history of the categories 'science' and 'religion' sheds crucial light on their present power relations. A key part of the story of the emergence of the nineteenth-century categories of 'science', 'scientist', and 'scientific method' was their intended role as boundary-establishing devices. 'Science', at least in the Anglophone world, was self-consciously defined so as to exclude the theological, metaphysical, and moral.[6] Paralleling this, the promotion of the novel vocational identity 'the scientist' (a term first coined in the nineteenth century) had a significant professional dimension intended to set the practitioner of science apart from others, and especially the professions of 'clergyman', 'priest', and 'theologian'.[7] Advocates of science who promoted these new categories did so partly in order to carve out an expanding realm – nature or the natural world – in which the authority of the scientist could reign supreme. At the same time, a naturalistic scientific method was elevated to epistemic pre-eminence, setting the standard to which all knowledge claims thereafter were to aspire. This way of setting up the territories meant that theology – and indeed many of the disciplines in the humanities – needed to submit

[5] Participants in this project include representative of Roman Catholic, Anglican, Orthodox, and Lutheran philosophical theologies, which is to say the recent revival in small 'c' catholic philosophical theologies. These approaches have roots in classical patristic and medieval philosophical theology and transcend modern ecclesial and national categories. Neither is Reformed thinking inherently at odds with the small 'c' catholic outlook put forward in this volume. See, e.g., Lutheran philosophical theologian Knut Alfsvåg's *What No Mind Has Conceived* (Leuven: Peeters, 2010).

[6] See Harrison, *Territories*, 145–82, and Bernard Lightman's chapter in this collection.

[7] Frank Turner, 'The Victorian Conflict between Science and Religion: A Professional Dimension', *Isis*, 49 (1978), 356–76; Ruth Barton, '"An Influential Set of Chaps": The X-Club and Royal Society Politics, 1864–85', *British Journal for the History of Science*, 23 (1990), 53–81; Gowan Dawson and Bernard Lightman (eds.), *Victorian Scientific Naturalism* (Chicago: University of Chicago Press, 2014).

their claims to the new tribunal of 'the scientific method' or run the risk of being consigned to meaninglessness and irrelevancy. It is not a total exaggeration to say that scientism is built into the very category of 'science'. Certainly, the form of a good amount of contemporary science–religion dialogue is that of theology adjusting its claims to ensure their consistency with the latest deliverances of the natural sciences. This volume seeks to explore the possibility of a more balanced conversation – not one in which humanists seek to make illicit pronouncements in the sphere of the natural sciences, but in which the theological and philosophical assumptions of various scientific claims are brought to light and given their due and, equally, in which the theological and religious implications of scientific activities are assayed.

The book has four parts. In Part I, Peter Harrison and Bernard Lightman provide a historical introduction. Harrison's chapter pushes forward from his *Territories* book, beginning with questions about whether dialogue between science and religion is desirable or even possible, and if so under what conditions. What counts as dialogue, he suggests, often just amounts to theology and religion accommodating themselves to the sciences. Dialogue conducted in this mode can serve to reinforce unhelpful ways of categorising science and religion. Considering how, in the past, natural philosophy and religion were to a large extent formative practices (rather than proposition-generating activities), he speculates about what it would mean for thinking about the relations between science and religion if it were still the case. This leads him to make the case for understanding the sciences and religions as historical traditions, by way of a discussion of the problem of incommensuration, which draws upon insights from Thomas Kuhn, Paul Feyerabend, and Alasdair MacIntyre. Historical and sociological descriptions of scientific and religious practices, he concludes, should play a more prominent role in our understandings of sciences, religions, and their relations.

Lightman's chapter goes on to spell in out in careful detail just how the nineteenth-century drawing of boundaries around 'science' and 'religion' has decisively determined the shape of the present discussion. The key event of the nineteenth century turns out to be not the emergence of evolutionary theory and the so-called Darwinian Revolution, but the alignment of the newly defined 'science' with a naturalistic metaphysics. Lightman shows how this development, along with the growing prestige of the sciences, confronted theologians with an acute dilemma: either accept the authority of the naturalistic sciences, and thereafter place all substantive theological claims under their jurisdiction, or deny the sciences that

overarching authority and risk being regarded as a reactionary advocate of science–religion conflict. Here again, it becomes clear just how much the present discussion of the relations between science and religion arises out of the historically conditioned terms in which the debate is conducted.

Part II, the most extensive part of the book, takes us into the territory of philosophical theology. David Bentley Hart leads off with the general question of how it might be possible to establish or discover consonance between science and theology. Here the older model of natural philosophy provides some resources, for it was clear to natural philosophers that their activities were grounded in metaphysical assumptions about the intelligibility of nature and the ultimate dependence of natural objects and processes on something more fundamental. This is no less true for modern science, although scientists may be less aware of it. When these hidden presuppositions of modern science are brought more clearly into view, Hart argues, there will be new opportunities for more fruitful conversations with theology which, in its broadest sense, also grapples with questions about ultimate reality. At the same time, this procedure also has the potential to expose inherent tensions between modern science and theology, at least insofar as modern science is identified with a simplistic, reductionist, and reverse-engineered mechanical world view which turns out to be inadequate to task of understanding even physical realities.

John Milbank's lengthy chapter offers the most extended and far-reaching first-order intervention of the collection. He proposes that instead of viewing Western modernity through the distorting lenses of 'science' and 'religion', we think instead in terms of competing philosophies or theologies of nature, understood in relation to two dimensions: 'enchantment' versus 'disenchantment' and transcendence versus immanence. The dominant model of science, from the time of Newton, has been a form of 'disenchanted transcendence'. But alternative approaches, which Milbank dubs 'enchanted immanentism' and 'enchanted transcendence', never really went away, and arguably are more consistent with contemporary physics than the traditional Newtonian assumption of disenchanted transcendence (although this is still what the modern sciences imagine themselves to be committed to, even if implicitly). Milbank also highlights the essentially 'magical' character of powers and causes, as preserved in the more enchanted models of nature, going on to suggest that 'magic', properly understood, can mediate between the practices of science and the theoretical claims of religion. In short, a thoroughgoing reconception of the basic categories we use to understand scientific and religious

phenomena is in order if we are truly to reckon with what is going on in the natural world.

Janet Soskice begins her contribution by drawing attention to the fact that there is little empirical evidence for an acute tension between science and religion, at least in practice. Cambridge scientists, to take one of her examples, are just as likely to be religiously observant as anyone else in the university, if not more so.[8] Yet at the same time there is a familiar public narrative according to which modern science has displaced a now outmoded religion. This narrative, Soskice suggests, arises not out of anything to do with the actual practices of science, but from a set of metaphysical assumptions that have been attached to science. Like other contributors to this volume, Soskice identifies as one of the distinctive features of this tacit metaphysics the assumption that God exists as a being among other beings, and that divine agency operates in the same plane as natural agency. God, on this description, is indeed not a being who is the proper object of theology, but rather operates in the same plane as the agents and powers that comprise the objects of the natural sciences.

Michael Hanby runs a parallel argument in the chapter that follows, highlighting the general tendency of the modern sciences to reduce the ultimate truth about natural things to their utility. What matters about the objects of nature, on this view, is not what they are, but what can be done with them: science is true because it works.[9] For theology to seek dialogue with science on those terms is already to have capitulated to an impoverished view of nature. Hanby proposes that in place of this mechanistic and reductionist science we revive teleological and vitalistic elements of nature (which have never really gone away). A science that is ontologically enriched in this way will enable a richer dialogue, and one that is not compromised from the outset. Both Hanby and Soskice, in different ways, provide support for Milbank's critique of the dominant mode of disenchanted transcendence.

Catherine Pickstock offers us a fascinating account of an alternative modern metaphysics, focusing upon three key seventeenth-century

[8] For more general empirical evidence along these lines, see Elaine Howard Eckland, *Science vs Religion: What Scientists Really Think* (Oxford: Oxford University Press, 2010); and Eckland et al., *Secularity and Science: What Scientists around the World Really Think about Religion* (New York: Oxford University Press, 2019).

[9] For difficulties with this very common view, see, e.g., Mary Hesse, 'Truth and the Growth of Scientific Knowledge', *PSA*, 2 (1976), 261–80; Larry Laudan, 'A Confutation of Convergent Realism', *Philosophy of Science*, 48 (1981), 19–49; Peter Dear, *The Intelligibility of Nature* (Chicago: University of Chicago Press, 2006), 1–8; Kyle P. Stanford, 'An Antirealist Explanation for the Success of Science', *Philosophy of Science*, 67 (2002), 266–84.

English figures: Herbert of Cherbury, Robert Greville, and Anne Conway. While these thinkers have typically been relegated to the margins of the history of philosophy, Pickstock reinstates them as representatives of an important, if largely eclipsed tradition.[10] Indeed, they represent, along with the group characterised as 'the Cambridge Platonists', a kind of alternative trajectory for modern philosophy and natural philosophy, and one that would be firmly in the category identified in John Milbank's chapter as 'enchanted transcendence'.

Two of Pickstock's subjects – Herbert and Greville – wrote treatises on 'truth', and it is truth and its representation that is the key focus of Rowan Williams' chapter. The relations between science and religion are understood in terms of the respective truth claims of the two enterprises. The difficulty with this approach is that it often fails to appreciate the way in which truth claims are embedded in cultural practices. Williams proposes that it is not only in the religious traditions that knowledge is bound up in devotional practices; scientific practice, too, is an ascetic habit, albeit one that can lead to a narrowing of focus. To this extent, science, no less than religion, preserves some of the formative components that were associated with medieval notions of *scientia*. Understanding this helps us view the relationship between science and religion in a new light. Williams suggests that, on the one hand, the encounter can lead to new, self-critical questions being posed within each of the enterprises. On the other, it can help promote a broader a set of intellectual practices that help us confront some of the pressing existential questions that we presently face.

Part III looks at three traditional problems in science–religion discussions. Simon Oliver addresses what has been a major point of contention since the time of the scientific revolution: the problem of teleology (the purposefulness or directedness of natural processes). Pioneers of the modern sciences, such as René Descartes and Francis Bacon, insisted that Aristotle's so-called final causes that described the inherent purposefulness of natural things be banished from the formal study of nature. Teleology (notwithstanding that it should be distinguished from design) suffered a further setback with the inception of Darwinian evolution. Needless to say, perhaps, a world understood as entirely without purpose is not consistent with most religious traditions. But Oliver contends that it is not consistent with a comprehensive view of the natural world, either. Focusing on the key instance of the phenomenon of consciousness, he takes us back to the fundamental question of what kind of metaphysics

[10] As, too, Richard H. Popkin, *The Third Force in Seventeenth-Century Thought* (Leiden: Brill, 1991).

would enable a rehabilitation of teleology that was adequate to the purpose of giving a full account of what transpires in the natural world, including consciousness. Oliver's chapter again reminds us of the central relevance to science–religion matters of the implicit metaphysical underpinnings of modern scientific practices.

Scientism, which has often been to the fore of contemporary discussions of science and religion, is the central focus of David C. Schindler's contribution. A common strategy for resolving apparent tensions between science and religion is to distinguish 'genuine science' from 'scientism', where the latter is understood as acceding authority solely to the materialistic methods and theories of modern science in all of the realms of thought.[11] Abandonment of this over-reaching conception of science is typically understood as a prerequisite for arriving at a reconciliation between science and religion. Schindler contends, to the contrary, that modern science has tended to monopolise rational discourse not *in spite of* the restriction of its scope to the empirical, quantifiable, and so on, but precisely *because of* its apparently modest self-limitation. The argument is that, precisely by virtue of isolating itself from philosophy and theology, modern science has an inherent tendency to become 'scientistic' even for its most religiously sympathetic practitioners. Schindler proposes a radical alternative to the usual strategy for contending with scientism, proposing that science should *expand* rather than restrict its scope. In other words, it should seek to embrace some of the ambitions of its predecessor – natural philosophy. This path calls for a recognition that things in the world have natures that extend beyond the merely empirically available properties that modern science currently deals with.

Part IV, with contributors from authors trained in the natural sciences, sets out three different appropriations of the historical and theological insights developed by our other contributors. Tom McLeish looks to the period *before* science and religion – that is to say, before the emergence of these two modern categories – to reflect on lessons for the present conduct of science. The general question is: How did the great medieval thinkers approach the meaning and practice of natural knowledge understood as integral to both transcendent reality and the world of human meaning and daily practice? More specifically, McLeish looks closely at the thirteenth-century polymath Robert Grosseteste, who combined a theologically inspired metaphysics of light with the science of optics. Grosseteste thus offers an alternative model to a naturalistic modern science that explicitly

[11] See, e.g., Mikael Stenmark, *Scientism: Science, Ethics, and Religion* (London: Routledge, 2001).

eschews theological and metaphysical considerations and gestures towards the viability of Milbank's 'enchanted transcendence'.

Taking his cue from Pierre Hadot's celebrated account of philosophy as a form of spiritual exercises, Pui Him Ip asks us to reflect on physics as spiritual exercise.[12] He takes as his primary example the fourth-century Alexandrian polymath Origen. The Late Classical and Patristic thought world maintained deep mutually informing connections between nature, morality, and spirituality, offering a model for how we might think without the supposed wall of demarcation between science and religion. Ip thus sets out a clear historical precedent for Rowan Williams' suggestion that modern science is still a form of devotional practice.

In his contribution, Spike Bucklow considers the relationship between science and religion in terms of the self-image that is encouraged by everyday interactions with a technological society. He contrasts the modern and medieval experiences of work, as extrapolated from the documented processes and extant products of that work (in particular, medieval works of art). Bucklow points out how the self-image indirectly generated by modern science devalues many aspects of lived experience in comparison with the self-image indirectly generated by Neoplatonic and Aristotelian informed sciences. Bucklow concludes that modern science's implicit operational redefinition of human nature has important consequences for how we understand the relationship between science and religion.

Peter Harrison rounds out the volume with some concluding reflections about the collection as a whole, and what it means for the future direction of science–religion discourse.

[12] Pierre Hadot, *Philosophy as a Way of Life*, trans. Michael Chase (Oxford: Blackwell, 1995); Pierre Hadot, *What Is Ancient Philosophy?*, trans. Michael Chase (Cambridge, MA: Harvard University Press, 2004).