

## Opinion Page

### Opinion: *Science + Religion*

Tom McLeish, Department of Physics, University of York

Tom McLeish is a professor of natural philosophy in the Department of Physics at the University of York in the UK.

His broadly interdisciplinary research ranges from the theoretical physics of soft and biological matter to the medieval history of science, and the theology, sociology and philosophy of science.



See [here](#) for more information.

To riff on the opening lines of Steven Shapin's [book](#) *The Scientific Revolution* (1996), there is no such thing as a science-religion conflict, and this is an essay about it. It is not, however, another rebuttal of the 'conflict narrative' – there is already an abundance of good, recent writing in that vein from historians, sociologists and philosophers as

well as scientists themselves. Readers still under the misapprehension that the history of science can be accurately characterised by a continuous struggle to escape from the shackles of religious oppression into a sunny secular upland of free thought (loudly expressed by a few scientists but no historians) can consult Peter Harrison's masterly [book](#) *The Territories of Science and Religion* (2015), or dip into Ronald Numbers's delightful edited [volume](#) *Galileo Goes to Jail and Other Myths about Science and Religion* (2009).

Likewise, assumptions that theological and scientific methodologies and truth-claims are necessarily in philosophical or rational conflict might be challenged by Alister McGrath's [book](#) *The Territories of Human Reason* (2019) or Andrew Torrance and Thomas McCall's [edited](#) *Knowing Creation* (2018). The late-Victorian origin of the 'alternative history' of unavoidable conflict is fascinating in its own right, but also damaging in that it has multiplied through so much public and educational discourse in the 20th century in both secular and religious communities. That is the topic of a new and fascinating [study](#) by the historian James Ungureanu, *Science, Religion, and the Protestant Tradition* (2019). Finally, the concomitant assumption that scientists must, by logical force, adopt non-theistic worldviews is roundly rebutted by recent and global social science, such as Elaine Eklund's major survey, also published in a new [book](#), *Secularity and Science* (2019).

All well and good – so the history, philosophy and sociology of science and religion are richer and more interesting than the media-tales and high-school stories of opposition we were all brought up on. It seems a good time to ask the 'so what?' questions, however, especially since there has been less work in that direction. If Islamic, Jewish and Christian theologies were demonstrably central in

the construction of our current scientific methodologies, for example, then what might such a reassessment imply for fruitful development of the role that science plays in our modern world? In what ways might religious communities support science especially under the shadow of a ‘post-truth’ political order? What implications and resources might a rethink of science and religion offer for the anguished science-educational discussion on both sides of the Atlantic, and for the emerging international discussions on ‘science-literacy’?

I want to explore here directions in which we could take those consequential questions. Three perspectives will suggest lines of new resources for thinking: the critical tools offered by the discipline of *theology* itself (even in an entirely secular context), a reappraisal of ancient and pre-modern texts, and a new way of looking at the unanswered questions and predicament of some postmodern *philosophy* and *sociology*. I’ll finish by suggesting how these in turn suggest new configurations of religious communities in regard to science and technology.

The humble conjunction ‘and’ does much more work in framing discussions of ‘theology and science’ than at first apparent. It tacitly assumes that its referents belong to the same category (‘red’ and ‘blue’), implying a limited overlap between them (‘north’ and ‘south’), and it might already bias the discussion into oppositional mode (‘liberal’ and ‘conservative’). Yet both science and theology resist boundaries – each has something to say about everything. Other conjunctions are possible that do much greater justice to the history and philosophy of science, and also to the cultural narratives of theology. A strong candidate is ‘of’, when the appropriate question now becomes: ‘What is a theology of science?’ and its complement, ‘What

is a science of theology?’

A ‘theology of...’ delivers a narrative of *teleology*, a story of purpose. A ‘theology of science’ will describe, within the religious narrative of one or more traditions, what the work of science is for. There have been examples of the ‘theology of...’ genre addressing, for example, music – see James Begbie’s *Theology, Music and Time* (2000) – and art – see Nicholas Wolterstorff’s *Art in Action* (1997). Note that working through a teleology of a cultural art by calling on theological resources does not imply a personal commitment to that theology – it might simply respond to a need for academic thinking about purpose.

For example, Begbie [explores](#) the role that music plays in accommodating human experience to time, while Wolterstorff [discovers](#) a responsibility toward the visual aesthetics of public spaces. In both cases, we find that theology has retained a set of critical tools that address the essential human experience of purpose, value and ethics in regard to a capacity or endeavour.

Intriguingly, it appears that some of the social frustrations that science now experiences result from missing, inadequate or even damaging cultural narratives of science. Absence of a narrative that delineates what science is *for* leave it open to hijacking by personal or corporate sectarian interests alone, such as the purely economic framings of much government policy. It also muddies educational waters, resulting in an over-instrumental approach to science formation. I have [elsewhere](#) attempted to tease out a longer argument for what a ‘theology of science’ might look like, but even a summary must begin with examples of the fresh (though ancient) sources that a late-modern theological project of this kind requires.

The cue for a first wellspring of raw material comes from the neo-Kantian Berlin philosopher Susan Neiman. In a remarkable [essay](#), she urges that Western philosophy acknowledge, for a number of reasons, a second foundational source alongside Plato – that of the Biblical *Book of Job*. The ancient Semitic text offers a matchless starting point for a narratology of the human relationship of the mind, and the experience of human suffering, with the material world. Long recognised as a masterpiece of ancient literature, *Job* has attracted and perplexed scholars in equal measures for centuries, and is still a vibrant field of study. David Clines, a leading and lifelong scholar of the text, [calls](#) *Job* ‘the most intense book theologically and intellectually of the Old Testament’. Inspiring commentators across vistas of centuries and philosophies, from Basil the Great to Emmanuel Levinas, its relevance to a theology of science is immediately apparent from the poetic ‘Lord’s Answer’ to Job’s complaints late in the book:

Where were you when I founded the earth?  
 Tell me, if you have insight.  
 Who fixed its dimensions? Surely you know!  
 ...Have you entered the storehouses of the snow?  
 Or have you seen the arsenals of the hail?

The writer develops material from the core creation narrative in Hebrew wisdom poetry – as found in Psalms, Proverbs and Prophets – that speaks of creation through ‘ordering’, as well as bounding and setting foundations. The questing survey next sweeps over the animal kingdom, then finishes with a celebrated ‘de-centralising’ text that places humans at the periphery of the world, looking on in wonder and terror at the ‘other’ – the great beasts Behemoth and Leviathan.

The text is an ancient recognition of the unpredictable aspects of the world: the whirlwind, the

earthquake, the flood, unknown great beasts. In today’s terms, we have in the Lord’s Answer to Job a foundational framing for the primary questions of the fields we now call cosmology, geology, meteorology, astronomy, zoology... We recognise an ancient and questioning view into nature unsurpassed in its astute attention to detail and sensibility towards the tensions of humanity in confrontation with materiality. The call to a questioning relationship of the mind from this ancient and enigmatic source feeds questions of purpose in the human engagement with nature from a cultural depth that a restriction to contemporary discourse does not touch.

Drawing on historical sources is helpful in another way. The philosophy of every age contains its tacit assumptions, taken as evident so not critically examined. A project on the human purpose for science that draws on theological thinking might, in this light, draw on writing from periods when this was an academically developed topic, such as the scientific renaissances of the 13th and 17th centuries. Both saw considerable scientific progress (such as, respectively, the development of geometric optics to explain the rainbow phenomenon, and the establishment of heliocentricity). Furthermore, both periods, while perfectly distinguishing ‘natural philosophy’ from theology, worked in an intellectual atmosphere that encouraged a fluidity of thought between them.

An instructive and insightful thinker from the first is the polymath Robert Grosseteste. Master to the Oxford Franciscans in the 1220s, and Bishop of Lincoln from 1235 to his death in 1253, Grosseteste wrote in highly mathematical ways about light, colour, sound and the heavens. He drew on the earlier Arab transmission of and commentaries on Aristotle, yet developed many topics well beyond the legacy of the ancient philosopher (he

was the first, for example, to identify the phenomenon of refraction to be responsible for rainbows). He also brought a developed Christian philosophy to bear upon the reawakening of natural philosophy in Europe, whose programmes of astronomy, mechanics and above all optics would lead to early modern science.

In his *Commentary on the Posterior Analytics* (Aristotle's most detailed exposition of his scientific method), Grosseteste places a sophisticated theological philosophy of science within an overarching Christian narrative of Creation, Fall and Redemption. Employing an ancient metaphor for the effect of the Fall on the higher intellectual powers as a 'lulling to sleep', he maintains that the lower faculties, including critically the senses, are less affected by fallen human nature than the higher. So, re-illumination must start there:

Since sense perception, the weakest of all human powers, apprehending only corruptible individual things, survives, imagination stands, memory stands, and finally understanding, which is the noblest of human powers capable of apprehending the incorruptible, universal, first essences, stands!

Human re-engagement with the external world through the senses, recovering a potential knowledge of it, becomes a participation in the theological project of healing. Furthermore, the reason that this is possible is because this relationship with the created world is also the nexus at which human seeking is met by divine illumination.

The old idea that there is something incomplete, damaged or 'out of joint' in the human relationship with materiality (itself drawing on traditions such as *Job*), and that the human ability to engage a question-based and rational investigation of the physical world constitutes a step towards a reversal

of it, represents a strand of continuity between medieval and early modern thinking. Francis Bacon's theologically motivated framing of the new 'experimental philosophy' in the 17th century takes (though not explicitly) Grosseteste's framing as its starting point. As framed in his *Novum Organum*, the Biblical and medieval tradition that sense data are more reliable than those from reason or imagination constitutes his foundation for the 'experimental method'.

The rise of experimentation in science as we now know it is itself a counterintuitive turn, in spite the hindsight-fuelled criticism of ancient, renaissance and medieval natural philosophers for their failure to adopt it. Yet the notion that one could learn anything general about the workings of nature by acts as specific and as artificial as those constituting an experiment was not at all evident, even after the foundation of the Royal Society. The 17th-century philosopher Margaret Cavendish was among the clearest of critics in her *Observations upon Experimental Philosophy* (1668):

For as much as a natural man differs from an artificial statue or picture of a man, so much differs a natural effect from an artificial...

Paradoxically perhaps, it was the theologically informed imagination of the medieval and early modern teleology of science that motivated the counterintuitive step that won against Cavendish's critique.

Much of 'postmodern' philosophical thinking and its antecedents through the 20th century appear at best to have no contact with science at all, and at worst to strike at the very root-assumptions on which natural science is built, such as the existence of a real world, and the human ability to speak representationally of it. The occasional explicit skir-

mishes in the 1990s ‘science wars’ between philosophers and scientists (such as the ‘Sokal-affair’ and the subsequent public acrimony between the physicist Alan Sokal and the philosopher Jacques Derrida) have suggested an irreconcilable conflict. A superficial evaluation might conclude that the charges of ‘intellectual imposture’ and ‘uncritical naivety’ levied from either side are simply the millennial manifestation of the earlier ‘two cultures’ [conflict](#) of F R Leavis and C P Snow, between the late-modern divided intellectual world of the sciences and the humanities. Yet in light of the long and theologically informed perspective on the story that we have sketched, the relationship of science to the major postmodern philosophical themes looks rather different.

Søren Kierkegaard and Albert Camus wrote of the ‘absurd’ – a gulf between the human quest for meaning and its absence in the world. Levinas and Jean-Paul Sartre wrote of the ‘nausea’ that arises from a human confrontation with sheer, basic existence. Derrida and Ferdinand de Saussure framed the human predicament of desire to represent the unrepresentable as *différance*. Hannah Arendt introduces *The Human Condition* (1958) with a meditation on the iconic value of human spaceflight, and concludes that the history of modernism has been a turning away from the world that has increased its inhospitality, so that we are suffering from ‘world alienation.’ The first modern articulation of what these thinkers have in common, an irreconcilable aspect of the human condition in respect of the world, comes from Immanuel Kant’s *Critique of Judgment* (1790):

Between the realm of the natural concept, as the sensible, and the realm of the concept of freedom, as the supersensible, there is a great gulf fixed, so that it is not possible to pass from the former to the latter by means of the theoretical employment of reason.

Kant’s recognition that more than reason alone is required for human re-engagement with the world is echoed by George Steiner. *Real Presences* (1989), his short but plangent lament over late-modern literary disengagement with reference and meaning, [looks](#) from predicament to possible solution:

Only art can go some way towards making accessible, towards waking into some measure of communicability, the sheer inhuman otherness of matter...

Steiner’s relational language is full of religious resonance – for *re-ligio* is simply at source the re-connection of the broken. Yet, once we are prepared to [situate](#) science within the same relationship to the humanities as enjoyed by the arts, then it also fits rather snugly into a framing of ‘making accessible the sheer inhuman otherness of matter.’ What else, on reflection, does science do?

Although both theology and philosophy suffer frequent accusations of irrelevance, on this point of brokenness and confusion in the relationship of humans to the world, current public debate on crucial science and technology indicate that both strands of thought are on the mark. Climate change, vaccination, artificial intelligence – these and other topics are marked in the quality of public and political discourse by anything but enlightenment values. The philosopher Jean-Pierre Dupuy, [commenting](#) in 2010 on a Europe-wide [project](#) using narrative analysis of public debates around nanotechnology, shows that they draw instead on both ancient and modern ‘narratives of despair’, creating an undertow to any discussion of ‘troubled technologies’ that, if unrecognised, renders effective public consultation impossible.

The research team labelled the narratives: (1) Be careful what you wish for – the narrative of de-

sire; (2) Pandora's Box – the narrative of evil and hope; (3) Messing with nature – the narrative of the sacred; (4) Kept in the dark – the narrative of alienation; and (5) The rich get richer and the poor get poorer – the narrative of exploitation. These dark and alienated stories turn up again and again below the surface of public framings of science, yet driving opinion and policy. The continuously complex case of genetically modified organisms is another example. None of these underlying and framing stories draws on the theological resources within the history of science itself, but all do illustrate the absurd, the alienation and the irreconcilable of postmodern thinking.

Small wonder, perhaps, that Bruno Latour, [writing](#) in 2007 on environmentalism, revisits the narrative of Pandora's Box, showing that the modernist hope of controlling nature through technology is dashed on the rocks of the same increasingly deep and problematic entangling with the world that prevents our withdrawal from it. But Latour then makes a surprising move: he calls for a re-examination of the connection between mastery, technology and *theology* as a route out of the environmental impasse.

What forms would an answer to Latour's call take? One is simply the strong yet gentle repeating of truth to power that a confessional voice for science, and evidence-based thinking, can have when it is resting on deep foundations of a theology that understands science as a gift rather than a threat. One reason that Katharine Hayhoe, the Texan climate scientist, is such a powerful advocate in the United States for taking climate change seriously is that she is able to explicitly work through a theological argument for environmental care with those who resonate with that, but whose ideological commitments are impervious to secular voices.

There are more grassroots-level examples that demonstrate how religious communities can support a healthy lay engagement with science. Local movements can dissolve some of the alienation and fear that characterises science for many people. In 2010, a group of local churches in Leeds in the UK, decided to hold a community science festival that encouraged people to share their own and their families' stories, together with the objects that went with them (from an ancient telescope to a circuit board from an early colour TV set that was constructed by a resident's grandfather). A diverse movement under the general [title](#) 'Equipping Christian Leadership in an Age of Science' in the UK has discovered a natural empathy for science as a creative gift, rather than a threat to belief, within local churches (see here for examples).

At a national level, the past five years have seen a remarkable project engaging senior church leaders in the UK with current scientific issues and their researchers. In a country with an established Church, it is essential that its voices in the national political process are scientifically informed and connected. Workshop participants, including scientists with no religious background or practice, have found the combination of science, theology and community leadership to be uniquely powerful in resourcing discussions of ethical ways forward, in issues from fracking to artificial intelligence.

A relational narrative for science that speaks to the need to reconcile the human with the material, and that draws on ancient wisdom, contributes to the construction of new pathways to a healthier public discourse, and an interdisciplinary educational project that is faithful to the story of human engagement with the apparently chaotic, inhuman materiality of nature, yet one whose future must

be negotiated alongside our own. Without new thinking on 'science and religion', we risk forfeiting an essential source for wisdom today.

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Themes in this essay are developed in McLeish *Faith and Wisdom in Science* (2014), *Let There Be Science* (2016) and *The Poetry and Music of Science*.