



Deposited via The University of York.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/id/eprint/172275/>

Version: Accepted Version

---

**Book Section:**

McLeish, Tom C.B. (2019) Beyond Barbour: A Theology of Science from Ancient and Modern Thinkers. In: Contemporary Trends and Issues in Science Education. Contemporary Trends and Issues in Science Education. Springer, pp. 33-45.

[https://doi.org/10.1007/978-3-030-17234-3\\_4](https://doi.org/10.1007/978-3-030-17234-3_4)

---

**Reuse**

This article is distributed under the terms of the Creative Commons Attribution (CC BY) licence. This licence allows you to distribute, remix, tweak, and build upon the work, even commercially, as long as you credit the authors for the original work. More information and the full terms of the licence here:

<https://creativecommons.org/licenses/>

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.

# Beyond Barbour: A Theology *of* Science from ancient and modern thinkers

Tom McLeish FRS<sup>1</sup>

**Abstract** In this chapter I will challenge a common background relational assumption behind all of Barbour's categories as intrinsically unfaithful to the universal nature of both science and religion, arguing instead that it is more fruitful to ask what a 'theology *of* science' might look like. 'What does science do, and what is it for, within a theological worldview?' This approach works very well in a teaching context when developed in two ways: (i) historically (ii) Biblical studies in Wisdom, especially in the *Book of Job*. Students of this approach start to think in new ways and to ask new questions, suggesting an approach to science, or in its more ancient form natural philosophy – the 'love of wisdom of natural things' – that can draw on theological and cultural roots. I suggest that deriving a human narrative for science in this way can transform the way political discussions of 'troubled technologies' (genetic medicine, GMOs, fracking *etc.*) are framed, and the way we approach science in education and the media.

## X.1. Assumptions beneath the Categories; a Teleological alternative

The Barbour categories have undoubtedly set a framework of unprecedented power and fruitfulness for the relational discussion of science and religion in the latter half of the 20<sup>th</sup> century. However, as Ian Harrison (2015) points out in his recent book *The Territories of Science and Religion*, the very implied notion that science and religion *are* two 'territories' whose relationship might potentially be characterised by one of Barbour's four relations is itself a historically relative position. Harrison's metaphor of a medieval war between 'Israel' and 'Egypt' serves to remind us to question the essential relational assumption; are there really two ontologies (or epistemologies) of sufficient equivalence to bear any set of relational categories as potentially applying (there were no such separate territories, of course, in that period; the land currently assigned to these nations was then part of a single, Ottoman, empire).

Conflict, independence, dialogue, integration: these are all candidates for *X* within the parsed sentence: 'a relationship of *X* characterises the relationship of science and religion'. Easily overlooked, the conjunction '*and*' does much more work here than is apparent. Suppose 'and' is not the appropriate conjunction? It situated its two co-relatives to the same category (red *and* blue), it implies a liminal or at best overlap zone between them ('north' and 'south'), and it may already bias the discussion into oppositional mode ('rich' and 'poor'). Do science and religion have 'domains' of discussion? Are those domains distinct, overlapping or opposed? The first question can be answered affirmatively, but only universally. There is nothing that science is not prepared, to some degree, to talk about, for all talk has neurological and psychological correlates. The same is true of religion; whatever language one uses – 'Kingdom of God', 'God's world' – never excludes. So the second question runs into problems. 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?'<sup>2</sup>

---

<sup>1</sup> Department of Physics, Durham University, Durham DH1 3LE

<sup>2</sup> We will not be considering the second of these in the current chapter, but it encompasses the anthropology and neuroscience of religion, for two examples

The first of this couple of mutually-nested relations leads to a teleology, a story of purpose. A theology of science will describe within the religious narrative of a tradition what the work of science is *for* within that greater narrative. There have been examples, or partial examples, of this rich seam of questions asked of, for example, music (Begbie 2000) and art (Wolterstorff 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 – but might simply respond to the increasing restriction of academic thinking about purpose to departments of theology and religion. Intriguingly, it appears that some of the social frustrations that science now finds itself in result from missing, inadequate or even damaging cultural narratives *of* science.

In a search for a persuasive and practical theology *of* science I first review, in section 2, some contemporary social science that unearths very different narratives that are eroding science within the public view. Section 3 draws on what, at first, might seem an unlikely source of new narratives – the tradition of Old Testament Wisdom material. In particular the *Book of Job* will prove extremely rich and relevant. Section 4 summarises briefly how this tradition of Biblical nature wisdom motivated the development of science in the Christian West from the high Middle Ages to the rise of early modern science. Finally in section 5 I will draw on the sociological, theological and historical material to suggest how a theology of science may be crafted, that transcends Barbour's categories, and which motivates a very different approach in education, politics, the media and the church.

## **X.2. Modern Narratives of Despair**

A helpful exemplar with which to explore how we narrate science is given by nanotechnology – the application of the phenomena matter at length-scales 10-100 times the atomic, and its special property of self-assembly. In 2009, a major three-year European research project reported on a narrative analysis behind the ostensibly technical public debate evaluating risks and acceptability of nanotechnology. Their project report, *Recovering Responsibility* (Davies 2009) tells a very different story to that of the claims and counter-claims of official public consultations. Its powerful application of qualitative social science unearthed underlying 'narratives of despair' – stories that permeate the debate, without necessarily surfacing within the superficial technical discussion. Identified by philosopher Jean-Pierre Dupuy (2010), they draw on both ancient and modern myths, and create an undertow to 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 Desire*
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*
5. *The rich get richer and the poor get poorer – the narrative of Exploitation.*

The first three Dupuy unites in an ‘ancient meta-story’, the last two in a ‘modern meta-story’. It is at first rather astonishing to find as superficially modern a set of ideas as nanotechnology awakening such a powerful set of ancient stories, but would become less so in the light of a claim that the problematic engagement of the human with the material draws on ancient thought, sacred texts and stories.

Surveying briefly how they play out: new technologies, especially those whose functions are hidden away at the invisible molecular scale, have made exaggerated claims of benefits: longer, healthier lives at low cost, self-repairing materials and so on. But such hubris elicits memories of over-promising – so ‘*be careful what you wish for*’. The Story of *Pandora’s Box* enters at this point – as another tale of released troubles, nanotechnology also implies irreversibility in both knowledge gained and in the environmental release of nanoparticles. The third ‘ancient narrative’ is a fascinating and perplexing one. Why would a secular age develop a storyline that warns us away from ‘*Messing with Nature*’ because of its sacred qualities? The surge of secularisation has been charted, in the last century, in social theory from Emil Durkheim and in political philosophy from Hannah Arendt (1958) and others in our own. But ‘the sacred’ persists both within and without official religious communities. The fourth narrative of being ‘*Kept in the Dark*’ speaks of asymmetries in political power between the governing and the governed. The fifth, of ‘*the rich get richer and the poor get poorer*’ extends the fourth: with exclusion comes lack of access to the benefits of knowledge, and, worse, unequal exposure to their harmful consequences, for example in the resistance to GM crops in India (McLeish 2015).

The European Nanotechnology study is interesting because through its unearthing of the fundamental importance of underlying narrative, it highlights in the most lurid possible contrast that science itself has no such source to draw on – *there is a narrative vacuum where the story of science in human relationship with nature needs to be told*. What might happen to public debate on contentious science and technology if there were an active ancient narrative that was more positive in its story of science? A candidate for such a narrative appears in George Steiner’s deeply felt discussion of meaning and language, *Real Presences*, where he writes strikingly about the purpose of art: ‘Only art can go some way towards making accessible, towards waking into some measure of communicability, the sheer inhuman otherness of matter ...’ (Steiner 1989 pp175ff). To a scientist this attempt at a teleology of art is striking. For surely a core function of science is precisely to establish some ‘accessibility’ communication between our minds and the ‘sheer inhuman otherness of matter’. This ‘narrative clue’ turns out to resonate with much more ancient themes.

### **X.3 A Lost Tradition: Narratives of Hope in the Biblical Wisdom Tradition<sup>3</sup>**

The ancient and rich Book of Job offers a salient Biblical starting point for a narratology of the human relationship of the mind with physical creation. 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 right up to the present day. David Clines, to whom we owe the

---

<sup>3</sup> The argument here is a condensed form of the analysis of *The Book of Job* in McLeish (2014)

translation employed here, calls the Book of Job ‘the most intense book theologically and intellectually of the Old Testament’ (Clines 2014). Job has inspired commentators across vistas of centuries and philosophies, from Basil the Great to Emmanuel Levinas. Its relevance to a discussion of the relation of science and theology is immediately apparent from the point at which God finally responds to Job in chapter 38v4<sup>4</sup>:

*Where were you when I founded the earth?  
Tell me, if you have insight.  
Who fixed its dimensions? Surely you know!*

The writer delineates a beautiful development of the core creation narrative in Hebrew wisdom poetry – a form found in Psalms, Proverbs and some of the Prophets that speaks of creation through ‘ordering’, ‘bounding’ and ‘setting foundations’ (Brown 2010), but now in the relentless urgency of the question-form, the voice continues by sharpening its questions, first towards the phenomena of the atmosphere (38v22):

*Have you entered the storehouses of the snow?  
Or have you seen the arsenals of the hail,*

...

The voice then directs our gaze upwards to the stars in their constellations, to their motion, and to the laws that govern them (38v31):

*Can you bind the cluster of the Pleiades, or loose Orion’s belt?  
Can you bring out Mazzaroth in its season, or guide Aldebaran with its train?  
Do you determine the laws of the heaven?  
Can you establish its rule upon earth?*

...

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 at its centre-pieces, the great beasts Behemoth and Leviathan. This is an ancient recognition of the unpredictable aspects of the world: the whirlwind, the earthquake, the flood, unknown great beasts. Even these short extracts from the longer poem give something of the impressive, cosmic sweep of this text. 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, ... Without anachronism, we can, however, 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.

There is another reason that scientists today find this passage in Job so resonant –its *question-form*. For we know that the truly essential and imaginative task in scientific discovery is not the finding of answers, but the formulation of the fruitful question. The question, to which chapter 38 is the answer, is the equally magisterial ‘Hymn to Wisdom’ of chapter 28, which begins with a remarkable metaphor for human perspicuity into the structure of the world – that of the miner:

---

<sup>4</sup> We take quotations of the text from the magisterial new translation and commentary by Clines (2014)

*Surely there is a mine for silver, and a place where gold is refined.  
Iron is taken from the soil, rock that will be poured out as copper.  
An end is put to darkness, and to the furthest bound they seek the ore in gloom and deep darkness.  
A foreign race cuts the shafts; forgotten by travelers, far away from humans they dangle and sway.  
That earth from which food comes forth is underneath changed as if by fire.  
Its rocks are the source of lapis, with its flecks of gold.*

The underground world takes us completely by surprise – why did either an original author or a later compiler suppose that the next step to take in the book was down a mineshaft? Reading on,

*There is a path no bird of prey knows, unseen by the eye of falcons.  
The proud beasts have not trodden it, no lion has prowled it ...*

There is something uniquely human about the way we fashion our relationship to the physical world. Only human eyes can *see* the material world from the new viewpoint of its interior. It is an enhanced sight that asks questions, that directs further exploration, that wonders.

The conclusion of the hymn points to the shocking parallel of the human wisdom of the miner, and the divine wisdom of the Creator (28v23):

*But God understands the way to it; it is he who knows its place.  
For he looked to the ends of the earth, and beheld everything under the heavens,  
So as to assign a weight to the wind, and determine the waters by measure,  
when he made a decree for the rain and a path for the thunderbolt –  
then he saw and appraised it, established it and fathomed it.*

It is by no means true that the wisdom hymn concludes that wisdom has nothing to do with the created world, for the *reason* that God knows where to find it is precisely because he ‘looked to the ends of the earth, ..., established it and fathomed it’. It is, as for the underground miners, a very special sort of looking – involving number (in an impressive leap of the imagination in which we assign a value to the force of the wind) and physical law (in the controlled paths of rain and lightning). This is an extraordinary claim: that wisdom is to be found in participating with a deep understanding of the world, its structure and dynamics.

A reading of the entire book reveals that it continually navigates possible relationships between the human and the material, throughout the cycles of speeches, the Hymn to Wisdom and the Lord’s Answer (McLeish 2014). There are six alternatives presented through the various actors of the story. First is the ‘simple moral pendulum’ of Job’s ‘friends’ – the story of nature as both anthropocentric and driven by a moral law of retribution. Second is the ‘eternal mystery’ – the story that speaks of God’s exclusive understanding of nature’s workings in ways that humans can never know. Third is the contrasting idea of the ‘book of nature’ – the story in which nature constitutes a giant message-board from its maker for those who have eyes to read it. Attaining its height in Elihu’s speech, humans are central to this relationship just as are pupils in a classroom (but this classroom belongs in a kindergarten, not a university). Forth is the story of chaos: the

uncontrolled storm, flood and earthquake. This is uniquely Job's interpretation of his relationship with nature, but extrapolated in his anguish and exasperation. A fifth possible relationship with creation is made explicit (in denial) only once, by Job himself. It is the relationship of nature-worship.

A sixth storyline is hinted at, but not spoken with clarity. It hints at a balance between order and chaos rather than a domination of either. It inspires bold ideas such as a covenant between humans and the stones, thinks through the provenance of rainclouds, observes the structure of the mountains from below, wonders at the weightless suspension of the earth itself. It sees humankind's exploration of nature as in *Imago Dei*, and a participation in Wisdom herself.

Remarkably, the first five perspectives map naturally onto the five 'narratives of despair' we met in section I:

1. Nature enshrines retributive moral law – *the narrative of Exploitation*.
2. Nature is eternal mystery – *the narrative of Alienation*
3. Nature is a Holy Book to be read – *the narrative of the Sacred*
4. Nature is uncontrolled Chaos (Job's accusation) – *the narrative of Evil and Hope*
5. Nature is an object of worship (Job's denial) – *the narrative of Desire*.

The sixth storyline, the search for wisdom through the perceptive, renewed and reconciliatory relationship with nature, begins to look like a potential source for a 'missing narrative' of nature in our own times. It is rooted in creation and covenant, rather than pagan or atheist tradition; it recognises reasons to despair, but undercuts them with hope; it points away from stagnation to a future of greater knowledge, understanding and healing.

#### **X.4 Historical Transmission: Medieval and Early Modern Teleologies of Science**

We do not commonly ask today about purpose – it is academically awkward to do so in a secular environment – but that is a retrogressive feature of our times rather than a desirable norm. It also leads to serious misunderstandings of the history of science, for we tend to project the absence of teleology from our own times onto earlier epochs. Perhaps the most striking contrast between the medieval intellectual world and ours can be found in our differing teleologies.

An instructive and insightful example can be found in the work of the 13<sup>th</sup> century 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. His early science drew on the earlier Arab transmission of Aristotle into the '12<sup>th</sup> century renaissance', 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 extraordinary period when natural philosophy was reawakening in Europe, and developing the programmes of astronomy, mechanics and above all optics that would lead to early modern science (Cunningham and Hocknull 2016). It is of interest that this essential period, from about 1200 to 1600, receives so little attention in contemporary accounts of the history of science.

There are both simple and more sophisticated strands within Grosseteste's motivations to engage in natural science. On a delightfully straightforward level, at one point in his commentaries on the Psalms, he reflects that if the Bible chooses to convey truth to its readers through the illustrations of natural objects (trees, clouds, falling leaves etc.) then it behoves us to discover as much as we are able concerning them, simply in order that we might better understand the Scriptures. An application of this very direct thinking appears in an explanatory note accompanying his translation of John Damascene's *De Fide Orthodoxa*. Two chapters in the earliest manuscripts at his disposal, often omitted by earlier editors, concerned scientific topics that had no ostensible contact with the theological substance of the work as a whole. But Grosseteste reinstates both, explaining that:

These two chapters, namely the 24th about seas and the 25th about winds, are omitted in some Greek manuscripts; perhaps because they did not seem to contain a theological subject. But according to truly wise men, every notice of truth is useful in the explanation and understanding of theology.<sup>5</sup>

We see immediately the impressively connected philosophy of knowledge that drives his studies. Although he is perfectly able to distinguish theology and science, he takes the two as mutually dependent.

We cannot hope, however, to understand such a writer without recognising that his Christian worldview, and its story, provides the foundation for all his thought. For Grosseteste and his contemporary thinkers, the very possibility that we may grasp the order within the cosmos is that it, and we, are both created by God. Yet the incomplete and dulled nature of our understanding is one of the consequences of the 'Fall', in which the Biblical story in *Genesis* of the first humans' disobedience mars our first innate abilities. Yet humankind is not abandoned by its creator, who becomes incarnate in the person of Jesus, initiating a process of healing towards a renewed future creation. In his *Commentary on the Posterior Analytics* (Aristotle's most detailed exposition of his scientific method) Grosseteste places a more sophisticated theological philosophy of science within this overarching Christian narrative of Creation, Fall and Redemption. Employing a Boethian metaphor for the effect of the Fall on the higher intellectual and spiritual powers (in descending hierarchy those of understanding, memory, imagination) as a 'lulling to sleep' by the weight of fallen flesh, he maintains that the lower faculties, including critically the senses, are less affected by fallen human nature than the higher. Human understanding (*aspectus*) is now inseparable from human emotion and loves (*affectus* – the disposition to be affected); the inward turning of the latter in our present state dulls the former. However, there is an avenue of hope that the once-fallen higher faculties might be re-awakened: engaging the *affectus*, through the still-operable lower senses, in the created external things of nature allows it to be met by a remainder (*vestigium*) of other, outer light. So, a process of re-illumination can begin once more with the lowest faculties and successively re-enlighten the higher:

---

<sup>5</sup> Cf. Rome, Bibl. Vat., MS Chigi A.VIII. 245, f. 16va.

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!<sup>6</sup>

Human engagement with the external world through the senses, necessary because of our fallen nature, becomes a participation in the theological project of salvation. 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. As a central example, the ‘physics of light’ grounded in the cosmogony of the *De luce (On light)* informs a ‘metaphysics of light’ as a vehicle to become a ‘theology of light’. The implied restorative process that begins with an alertness to nature through our senses becomes one of Grosseteste’s ‘critical Aristotelian’ moves. With Aristotle he insists that all knowledge of particulars and universals comes through the senses, but against Aristotle he allows this to be met with divine illumination. This double move even suggests a theological motivation for the novel combination of experiment and mathematics implied in his scientific works – in every case it is at the meeting-point of observed phenomena and mathematical reasoning that understanding is born.

The teleological employment of scientific investigation as an instrument of human participation in a reversal of the effects of sin in the Fall, is an idea that itself reawakens in the early modern period, especially (but by no means exclusively) in Francis Bacon’s *Organum*, the philosophical articulation of early modern experimental science itself. Far from early modern science overthrowing everything Aristotelian and scholastic, the same narrative of new perception, sharpened by a reformed theology of Fall and Redemption, appears in Francis Bacon’s motivation for experimental science (Bacon 1887):

The glory of God is to conceal a thing, but the glory of the king is to find it out; as if, according to the innocent play of children, the Divine Majesty took delight to hide his works, to the end to have them found out; and as if kings could not obtain a greater honour than to be God's playfellows in that game, considering the great commandment of wits and means, whereby nothing needeth to be hidden from them.

The educational consequences, in the light of the overwhelming counter-narrative that secular science overthrows any religious framing, is obvious.

## **X.5 A Theology of Science and its Consequences**

We can now draw together the threads from readings of ancient wisdom and historical reception and development of the motivational philosophy leading to modern science. Most of the constitutive themes of a ‘Theology of Science’, as a proposal to go ‘Beyond Barbour’ have already emerged in our examination of Job, and from our brief encounter with a medieval teleology of science. Taken together, they are (McLeish 2014):

---

<sup>6</sup> Robert Grosseteste *Commentary on the Posterior Analytics*, quoted in R.W. Southern (1992) *Robert Grosseteste; the growth of an English mind in medieval Europe*, Oxford: Clarendon Press p167

- A long and linear history of engagement with nature,
- the surprising human aptitude for reimagining nature,
- the necessity of a search for wisdom as well as knowledge,
- the ambiguity and experience of pain,
- the delicate balance of order and chaos,
- the centrality of the question and the questioning mind,
- and above all the experience of love.

Within all these themes the theme of ‘relationship’ emerges constantly. Science experiences the negotiation of a new relationship between human minds and the physical world. The nature-language of the Bible is consistently employed to describe and develop the relationship of care and of understanding between humans and a world that is both our home and also a frightening field of bewilderingly complexity. Although fraught with ambiguity, experiencing pain and joy in equal measure, knowing terror before the phenomenon of chaos as well as experiencing joy before the resplendent order of the cosmos, bewildered by ignorance yet granted a hard-won understanding, a Biblical theology of nature must be consistently relational.

These patterns are only amplified when refracted through a New Testament lens. Within his most painful correspondence (with Corinth) Paul, for example, re-thinks the entire project of God’s creation in relational terms, working around and towards the central idea of reconciliation. Arguing that those who have been baptised into the life with Christ can already view the world from the perspective of its future physical re-creation, he writes (2Cor v17):

*Therefore, if anyone is in Christ – new creation;*

*The old has gone, the new has come!*

*All this is from God, who reconciled himself through Christ and gave us the ministry of reconciliation:*

*That God was reconciling the world to himself in Christ.*

The *ministry of reconciliation* is a stunningly brief encapsulation of the Biblical story of the purpose to which God calls people. I don’t know a better three-word definition of Christianity, and it does very well as an entry point for Old Testament temple-based Judaism as well.

There is one relationship that tends to be overlooked in expositions of Christian theology – perhaps humbler than the more obvious broken human ones, but just as profound. It is the relationship between humankind and nature itself. A theology of science, consistent with the stories we have told up to this point, situates our exploration of nature within that greater task. Science becomes, drawing on the ancient wisdom of *Job*, but within a Christian theology, the grounded outworking of the ‘ministry of reconciliation’ between humankind and the world. Far from being a task that threatens to derail the narrative of salvation, it actually participates within it. Science is the name we now give to the deeply human, theological task and ancient story of participating in the mending of our relationship with nature. We might summarise a *Theology of Science* as:

*Science is the participative, relational, co-creative work within the Kingdom of God of healing the fallen relationship of humans with nature.*

It is an extraordinary idea at first, especially if we have been used to negotiating ground between ‘science’ and ‘religion’; as if there were a disputed frontier requiring some sort of disciplinary peacekeeping force to hold the line. It also makes little sense within a view of history that sees science as an exclusively modern and secular development, replacing outworn cultural practices of ignorance and dogmatic authoritarianism with ‘scientific method’ and evidence-based logic. But neither of these assumptions stands up to disciplinary analysis on the one hand or to historical scholarship on the other.

Neither science nor theology can be self-authentic unless they can be universal. We need a ‘theology of science’ because we need a theology of everything. If we fail, then we have a theology of nothing. Such a theology has to bear in mind the tension that the same is true for science – it has never worked to claim that science can speak of some, but not of other topics. Science and theology are not complementary, they are not in combat, they are not just consistent – they are *‘of each other’*. This is the first ingredient of a theology of science.

Just as there is no boundary to be drawn across the domain of subject, there is no boundary within time that demarks successive reigns of theology and science. It is just not possible to define a moment in the history of thought that marks a temporal boundary between the ‘pre-scientific’ and ‘scientific’. The questioning longing to understand, to go beneath the superficialities of the world in thought, to reconstruct the workings of the universe in our minds, is a cultural activity as old as any other. Furthermore, it is a human endeavour deeply and continually rooted in theological tradition. The conclusion is still surprising: far from being necessarily contradictory or threatening to a religious worldview in general, or to Christianity in particular, science turns out to be an intensely theological activity. When we do science, we participate in the healing work of the Creator. When we understand a little more of nature, we take a step further in the reconciliation of a broken relationship.

Does a theology of science do meaningful work for us? Does it provide any avenues to resolve the painful cross-currents around science in society? Does it suggest new tasks? These must be the test for any endeavour of this kind. We consider here just one example.

One leading contemporary commentator whose interest in the ‘politics of nature’ has not been marginalized is the French thinker Bruno Latour (2004). In a recent edited volume (Latour 2008) he explores the terrifying observation that ‘environmentalism’ has become a dull topic – with conclusions that are remarkably resonant with our own. They break down into four findings, in his own words: *a stifling belief in the existence of Nature to be protected; a particular conception of Science; a limited gamut of emotions in politics; and finally the direction these give to the arrow of time*. This is a grand, overarching critique of the politics of nature, but even so, it homes onto the same narrative analysis as did the specific nanotechnology study we examined at the beginning. Latour’s identification of the ‘stifling’ move to withdraw all human corruption from a ‘Nature’ that should be maintained in some pristine condition is none other than the ‘messing with sacred Nature’ narrative by another name. He extracts the self-contradictory structure of this story of the Golden Age – Nature reserves are artificial by definition. But the alternative ‘modernist’ trajectory is no less problematic. There the story is an overcoming of Nature with control. We disengage from our environment, not through an ‘environmentalist’ dream of withdrawal from the sanctuary, but through technological domination. Here Latour revisits the narrative of

Pandora's Box, because such a modernist hope is dashed on the rocks of the same increasingly deep and problematic entangling with the world that prevents withdrawal. Nature does not respond mildly to an attempt to control or dominate. So, neither narrative works – both start with fundamentally misguided notions of the geometries and constraints of our relationship with nature.

Latour's critique of the conception of science is equally resonant with the flawed view of the political process of debate around new technologies that we have already explored. Political action on scientific decisions is as paralysed by disagreement as it is by disengagement. Not every expert agrees that blood transfusion might transmit the AIDS virus – so we wait in inaction that condemns children to infection. There is no uniform view on the future trajectory of global warming and its connection with human release of carbon dioxide – so we meet and talk, but do not implement. This is the 'kept in the dark' narrative with a twist – the political and public community self-imposes ignorance by demanding that scientists behave as a conclave, reading the same script and praying the same prayers, until the white smoke of majority expert agreement is released. The political life-blood of a communally-possessed and confident debate, widely shared and energised, respecting where specialist knowledge lies but challenged within a participating lay public, is simply not yet flowing in our national and international veins. At the close of his contribution to *Postenvironmentalism*, Latour makes an extraordinary move – one that meets our own journey head on. He calls for a re-examination of the connection between mastery, technology and *theology* as a route out of the environmental impasse.

The theological wisdom tradition we have been following, especially in the way that it entangles with the story of science itself, has brought us to the same point that Latour reaches from the perspective of political philosophy. One identifies the need, the other the motivation and resource, for a reengagement with the material world, and an acknowledgement that one unavoidable consequence of being human is that we have, in the terms of the *Book of Job*, a 'covenant with the stones'. This extraordinarily powerful collision of metaphors surely points to the balanced and responsible sense of 'mastery' that Latour urges that we differentiate from the overtones of exploitative dominance.

## **X.6 Conclusions**

Following a textual and historical thread, from ancient wisdom, through medieval and early modern thought, to contemporary debates on technology and environmentalism, points to a need for a teleology of science. This methodology also exposes the lack of any historical or philosophical support for the narratives so commonplace in educational settings today. Two current narratives fall by the wayside. The first declares the scientific enterprise to be uniquely modern; the second that it is in irreducible conflict with religion in general, and with Christian belief in particular. Paradoxically, the restrictive framing assumption behind Barbour's categories has amplified, rather than resolved, these misconceptions. 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 narratives that promise a healthier public discourse, and

an educational interdisciplinary project that is faithful to the story of human engagement with the apparently chaotic, inhuman materiality of nature.

Arendt, Hannah (1958) *The Human Condition*, Chicago: University of Chicago Press, 314

Bacon, Francis (1887) *Works*, edited by J. Spedding, R. L. Ellis, and D. D. Heath. Volume III

Brown, W. H, (2010) *The Seven Pillars of Creation*, Oxford: OUP

Begbie, Jeremy (2000) *Theology, Music and Time*, Cambridge: Cambridge University Press

Clines, David (2014) *World Bible Commentaries: Job* Thomas Nelson pubs., Nelson, Vol. 3.

Cunningham, Jack & Mark Hocknull Eds. (2016), 'Grosseteste and the pursuit of Religious and Scientific Learning in the Middle Ages', New York: Springer

Davies, Sarah, Phil Macnaghten and Matthew Kearnes (eds.) (2009), *Reconfiguring Responsibility: Deepening Debate on Nanotechnology*, Durham University, chapter 12

Dupuy, Jean-Pierre, (2010) *The Narratology of Lay Ethics*, *Nanoethics* 4 153-170

Harrison, Peter (2015) *The Territories of Science and Religion*, University of Chicago Press

Latour, Bruno, (2004) *Politics of Nature: How to Bring the Sciences into Democracy* (Translated by Catherine Porter) Cambridge, Mass: Harvard University Press

Latour, Bruno (2008) *"It's development, stupid!" or: How to Modernize Modernization*, in *Postenvironmentalism*. Jim Procter ed., MIT Press

McLeish, Tom (2014) *Faith and Wisdom in Science* Oxford: OUP

McLeish, T.C.B. (2015). 'The search for affirming narratives for the future governance of technology: reflections from a science-theology perspective on GMFuturos', in *Governing Agricultural Sustainability*, Eds. P. Macnaghten and S. Carro-Ripalda Routledge, Oxon

R.W. Southern (1992) *Robert Grosseteste; the growth of an English mind in medieval Europe*, Oxford: Clarendon Press

Steiner, George (1989) *Real Presences*, London: Faber and Faber

Wolterstorff, Nicholas (1997) *Art in Action; Toward a Christian Aesthetic*, Grand Rapids, Michigan: Wm, B. Eerdmans