Afterword

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The challenge of an Afterword is that so many of the themes I might have explored appear already in the essays. So what follows is a collection of thoughts about what I myself would want to stress, picking out from time to time emphases in the book that seem to me particularly important.

A common trope of the science-religion field at present is how much it has changed since the integrating, taxonomic work of Ian Barbour in the 1960s. But the conflict hypothesis, which Barbour set himself to refute by showing the range of alternative possibilities for relationship between the disciplines, continues to influence the way the debate is constructed, as Mark Harris shows in his chapter on *Brave New World*. I write this in December 2021. The life in which I used to go every year to a series of international conferences seems a world away, as the UK confronts the exponential phase of a fourth wave of SARS-Covid-2. But it used to be my practice to ask taxi drivers taking me to conference hotels what they thought about the subject of the impending conference, and I can confirm not only that some of these conversations were more rewarding than many of the lectures I subsequently sat through, but also that the conflict hypothesis still burns bright in the imaginations of many taxi drivers – as it does also in my village pub.

It might be asked why this should be so. Part of the answer seems to me to be that the conflict hypothesis is, at one level at least, a good story. It is often fashioned out a version of the trial of Galileo (however much scholarly scepticism now attaches to this) with Darwin and the Huxley-Wilberforce debate thrown in as character witnesses. And it taps into a vein of contemporary experience. I listened the other day to a TED talk on power in public affairs. Among the sources of power that were listed were wealth, state action, social norms, ideas, and numbers of people. In every one of these areas the power of institutional Christianity (the most visible face of religion in the UK) can be seen to be waning. The historic endowment of the Church of England may still be used to threaten fossil fuel corporations with disinvestment, but the power of the churches' wealth is radically vitiated by commitments to clergy pensions and building maintenance. Bishops still speak in the upper house of the legislature, but how much notice is taken of them? The churches' authority in setting social norms is hugely compromised by narratives of sexual abuse, often all too poorly addressed. Attendance numbers are in steady decline.

Whereas writing under the thunderclouds of COVID reinforces to me the power of science, which has given us, in astonishingly short order, sophisticated diagnosis, mass testing, and effective vaccines (including the innovative and potentially game-changing RNA vaccines). It is not the Archbishops of Canterbury and York but the Chief Medical Officer and the Chief Scientific Officer who stand at the shoulder of a beleaguered Prime Minister at Downing Street press conferences, to tell people what they should be doing and not doing. The sciences also give us vitally important explanations and projections for the rapidly changing climate.

The paradox is however that, so far from there being an intrinsic and necessary conflict, the best science (as opposed to the pseudo-science peddled by interests funded first by the tobacco industry and then by petrochemical companies) must always be seen by the best religion as an ally, not an enemy. Two truly sinister forces, to which the best science and the best religion must alike be opposed, are first of all, as Harris sees from his reading of Huxley and Orwell, 'science that is strictly instrumental and is certainly not investigative', and second,

the ‘fake news’ of the antivaxxers and climate deniers, which trades on fears that science has already been hijacked by a conspiracy against (a particular version of) human freedoms.

It will be evident that these two sinister poles lurk too close together for comfort. They are the Scylla and Charybdis through which contemporary society must navigate. COVID, and the latest IPCC Report on climate change, show us that this is literally a life-and-death journey of discernment. Literary artists have a responsibility, it seems to me, to assist this discernment through their depictions of science. We see an important attempt at this in R. S. Thomas, the poet justly celebrated in Wilson Poon’s chapter. Thomas wants to see the scientific search at its best as very close to the religious, but he turns his polemical scorn on ‘the machine’, ways in which technological exploitation of science aid in paths to dehumanisation. I shall return to Thomas shortly.

I referred above to the conflict hypothesis as a good story. That phrase is a reminder that, as is often remarked, humans are narrative animals. Stories are in our blood from early childhood; they can be understood as one of the strategies by which that extraordinarily complex structure, the human brain, makes meaning out of the battery of stimuli coming at it from the outside world. Reaching for a way to illustrate the dilemmas for discernment in the public understanding of science, I tapped just now into a story first sung by an oral poet perhaps 2800 years ago. For over half that interval, the stories of the Bible perfused the thought-world of Europe – they were the medium within which the imaginations of all those who developed modern science were framed. The consequence of a more pluralist and secular educational system is that the key framing stories for young people are not now Eden and Exodus, parables and Passion, but ‘Star Wars’, ‘Lord of the Rings’, and ‘Harry Potter’. The extraordinary success of these last is further testament, should it be needed, to the compelling power of narratives.

As one trained first in the natural sciences and then in theology I continue to be struck by the different shape of the narratives by which scholars are formed in the two types of discipline. This contrast is sketched out by T. S. Kuhn in his *The Structure of Scientific Revolutions* (Kuhn 1970). As young biochemistry students we were taught, insofar as there was mention of past theories, very much in terms of a narrative of linear progress – we used to think *that*, but now we have been able to show *this*. The idea of revisiting an article published more than twenty years ago was largely unknown. In contrast, the history of doctrinal theology has been one of periodic and decisive revisitings of formative texts from the early centuries of the faith, and contemporary theologians will often talk of establishing as ‘conversation partners’ authors long since dead. There is promising novelistic material in this contrast – David Lodge’s *Thinks …* (Lodge 2002) comes to mind as a playful model.

But what is a *good* story? Here the analysis of Hauerwas and Burrell (1989) as to what constitute ‘good’ stories is helpful. They claim that any story that is adopted by a community will have to display: 1) power to release from destructive alternatives, 2) ways of seeing through current distortions, 3) room to keep the community from having to resort to violence, and 4) a sense of the tragic – how meaning transcends power. It would be an intriguing exercise (left to the reader) to ask which of the literary texts analysed in this volume pass the Hauerwas-Burrell tests, and conversely, whether any of these texts might cause narrative theologians and ethicists to want to reframe those criteria. The best interdisciplinary explorations are always two-way in their implications.

So also, as Neil Messer has drawn out, with poetry and its contribution to the science-theology relation (see Messer 2020, 157-162). Scientific observations are a hugely important resource for the poetic contemplative. As I wrote in a recent article (Southgate 2017, 7):

> so much Christian attention to the natural world, in poetry, in worship, in theology, has celebrated the beauties of creation without taking into account the struggle, the violence, the often-ugliness of nature. Honest contemplatives need recourse to

> the insights of the sciences, in particular to the alarming insight that competition and struggle are factors that drive the evolution of what we tend to consider values in nature: beauty, intricacy, complexity, precision of adaptation. God seems to have used the struggle of Darwinian nature as a means to God's creative ends.

These are important reflections if we are to conduct our forays into nature contemplation with honesty and clear-sightedness. R. S. Thomas set himself to be just such a contemplative. So to continue my quotation:

> R.S.T. 'pictured the world not as reliably ordained and managed by a humanity-orientated God, but as provocatively neutral – glorious and harsh in equal measure, and expressing something of divinity in both its aspects.'[1] Many elements of the created world are not in any sense beautiful, and yet they are God's creation and in their own way eloquent of the work of God. He reflects that 'life has to die in the cause of life. If there is any other way on this earth, God has not seen fit to follow it … As far as this world is concerned, Isaiah's vision of the wolf dwelling with the lamb, and the leopard lying down with the kid, is a myth. The economy doesn't work like that'.[2] Easier, then, to accept the 'groaning' state of creation, and to insist that it 'can be simultaneously, reflective of divine fullness and glory'.[3] In the poem 'Rough', the system is accepted as 'Perfect/a self-regulating machine of blood and faeces.'[4] Insofar as the 'economy' testifies to the system God has 'seen fit' to create, the 'talons and beaks' testify thereby to the divine nature.
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> Thomas makes no effort to resolve this paradox into a theological system. Rather he is at work 'preserving and balancing its existence and, ultimately, moving toward a deeper acceptance of what he seems to view as the fundamentally paradoxical nature of existence itself.'[5] … So Thomas helps us in our search for a mode of nature contemplation that is fearlessly honest about the way nature really is, and which is willing to resist neat tidying into a theological system. (Southgate 2017, 10-11)

But what is the traffic in the reverse direction, from the insights of poets into the sciences? So much of the practice of the natural sciences is in the grindingly mundane investigation of regularities in the physical world, leading to minute contributions to the overall body of knowledge in a particular subject. Just to take an example from the scientific field in which I worked most recently, the title of a paper in a recent issue of the journal *Astrobiology* read 'Nucleic Acid Extraction and Sequencing from Low-Biomass Synthetic Mars Analog Soils for *In Situ* Life Detection' (Mojarro *et al.* 2019). The underlying vision behind such projects is hugely exciting; the actual day-to-day labour painstaking and minute. (This is one reason why the natural sciences are difficult to depict in fiction.)

Among the contributions poetry can make to the scientific life are reminders of what might be called 'the flash of the present moment', easily lost sight of in the grinding days and nights of bench science. In one of his most important poems Gerard Manley Hopkins wrote:

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[1] M. Wynn Thomas, *R. S. Thomas: Serial Obsessive* (Cardiff: University of Wales Press, 2013), p. 32.
[2] R. S. Thomas, *Autobiographies* (London: Orion Books, 1998), pp. 95-6.
[3] C. Morgan, *R. S. Thomas: identity, environment and deity* (Manchester: Manchester University Press, 2003), p. 72.
[4] R. S. Thomas, *Collected Poems 1945-1990* (London: J. M. Dent, 1993), p. 286.
[5] Morgan, *R.S. Thomas*, p. 73.

As kingfishers catch fire, dragonflies dráw fláme;
As tumbled over rim in roundy wells
Stones ring; like each tucked string tells, each hung bell's
Bow swung finds tongue to fling out broad its name;
Each mortal thing does one thing and the same:
Deals out that being indoors each one dwells;
Selves — goes itself; *myself* it speaks and spells,
Crying *Whát I do is me: for that I came* (Hopkins 1979, 87).

This octet is of course the fruit of the poet's equivalent of the hours and hours of experimental work. Hopkins deploys it to remind us that a single flash of a kingfisher's wing can remind us in an instant of larger perspectives on life. I suggest that it is in that type of lift into larger perspectives that the inspiration for novel scientific explorations can often be found, a theme generatively explored recently by the physicist and natural philosopher Tom McLeish (McLeish 2019).

Along with such inspiration, poets of the natural world can help scientists rekindle wonder, which again can be milled down by the routine of the lab. Wonder seems to me a quality all too absent from so much public discourse – it is of course a vital component of so much religious life, though as Richard Dawkins (that notorious contemporary propagator of the conflict hypothesis) has pointed out, it can float free of conventionally religious narratives (Dawkins 1998). All of which is not to miss the point that poets can be serious cosmologists and metaphysicians, as Poon notes in quoting Lucretius, and as Alison Milbank discovers in the speculations of Vaughan and Coleridge. Indeed Hopkins' notions of inscape and instress represent a fascinating fusion of a naturalist's observation with a philosophical theologian's insights and a poet's zest. And as Michael Fuller shows, novelists can be serious epistemologists too – albeit, for Čapek, at the cost of a certain flatness of characterisation.

Poets and novelists can also be prophets. R. S. Thomas famously asked in a note, 'Who is to act as Nathan to the scientists?' (Westover 2011, 146), recalling the prophet's chill impeachment of King David for his murder of Uriah the Hittite to secure Uriah's wife Bathsheba for himself. (Again we see the evocative power of an ancient story.) Much of Thomas's writing on technology sees him seek to adopt this script: 'because you have done this, bad things will result …'. The 'cli-fi' novels treated by Jaime Wright in her chapter in this book can be seen as exploring another script from the Hebrew prophets: 'if you persist in doing this, the consequences may be bad beyond your imagining'. Margaret Atwood's *Maddadam* trilogy (with its fascinatingly playful eco-religion) is, to my mind, a formidable example of this genre, and I would be inclined to teach it in any future module on ecotheology.

In conclusion, I would simply observe that the practice of both the sciences and the various religions is human practice. Motifs of love and power abound, as in any human practice. In my own poem 'Taboo' I explored the relationship between Otto Hahn and Lise Meitner, puzzling together over the phenomenon that came to be understood as nuclear fission. I wrote:

Even in the dull, static lab photo, Two
of them staring stiffly at the frame
From a suitable distance apart
You can see the respect, yes, but also The
intensity of their affection, Otto's
Sturdiness, Lise's passionate commitment -
Severe, brilliant, Jewish, banned.

and later in the poem

For thirty years they worked together,
Always staying late. When the chemistry went well
They would sing Brahms to each other.
And every night each
Walked back from the Institute alone (Southgate 2006, 60-2).

Indeed the long hours and intense shared focus in much experimental science have a kind of erotic quality, which I have yet to see well explored in fiction (A.S. Byatt's *Possession* (1990) treats this dynamic well, though the protagonists in this are literary scholars). The erotic charge of shared spiritual search, even in monastic settings, is perhaps a more familiar trope.

What of power? I was fortunate enough to be trained as a scientist in an environment in which an undergraduate's question to a senior speaker was treated with the same seriousness as a query from one of the speaker's contemporaries. So it was a shock to me to observe, when going to conferences as a postdoc, the great men (almost always men) of the field followed around by posses of courtiers, treated like princes, and brushing off slightingly good objections from anyone unknown. I have seen the same dynamic, alas, in theological and religious settings. The ghost of Evelyn Waugh's wickedly drawn Lord Copper lurks in both fields. Both need all the more, therefore, the iconoclastic attentions of the novelist. It happens that the last two novels I read were Anthony Doerr's magnificent *Cloud Cuckoo Land* (2021), with its intriguing science fiction component, and Susanna Clarke's splendid *Piranesi* (2020), which can be read – among other interpretations – as a parable of a religious life. Both convince me that the craft of the novel is in excellent heart. I detect too an upsurge in interest in poetry, as being able to occupy in our increasingly secularised ritual practice (to paraphrase Larkin) a serious place on serious earth, able to hold in rhythm and space and silence the huge charge that attends human birth, marriage, suffering, and death. In an age in which the whole human vocation is coming under profound question, through the advance of both climate change and artificial intelligence, imaginative explorers in all disciplines should be very glad this is the case.

Bibiography

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