

Newsletter April 2009

Science, theology and creation from the Director and Canon Theologian



When I was in the 5th form I discovered physics. That year I was gifted with a particularly good teacher, whom encouraged me to read widely and in excess of what was required for the course. He was also particularly patient, and would set aside regular lunch times to go over all the streams of questions I would note down. (That was also how I discovered black coffee, for the physics lab had no fridge to store milk, but that is another story.) Many of my questions were about *why* things happened as they did. This was a theme that recurred over several of those lunchtime sessions, and I soon discovered that physics, and science in general, wasn't particularly good at working out why certain phenomena occurred. Most of the answers, even those that looked initially like they might be telling me why, were really an exercise in discovering the *how* of it all.

And science is good at that, mostly. How things happen as they do – and sometimes, how to make things happen in a different, and more useful way – represents a fascinating series of puzzles, the solution of which has occupied the minds of many over several millennia. Answering the how questions is (alongside the hard work, the

frustrations, and the occasional tedium of research) enormous fun. But at about the same time as I came to understand that not even my beloved physics could tell me why things happened, I began to discover that theology might come closer to reaching an answer to some (but not all!) of my why questions.

To take the opening chapters of Genesis as an example: they do not set out to explain how creation occurred – that is for the physicists and the biologists etc to work out! – but they have major things to say about why the earth and its denizens were created and by whom. Like very many of us, I have no problem in combining a lively and questioning faith in God, and commitment to theology, with an acceptance of evolution. Which reminds me: Happy Birthday, Mr Darwin.

Over the years, as physics has receded from my mind, and my passion for theology grown stronger (like the coffee), I have come to believe in the crucial importance of both disciplines. They are not incompatible, they are merely concentrating on different questions, different puzzles. Both have a concern for truth – though the ways in which truth is defined may differ, and both are ways in which practitioners can seek to touch the mind of God and can honour God with their own minds.

Recent science has done theology some favours, as some of the pieces in this newsletter point out. With the developments in modern theoretical physics, it is becoming harder (some would say impossible) to prove the theory – whether that's string theory or multiple dimensions, and yet scientists working in those fields are not only 'OK' with that, but can have no other option but to ask the rest of us to take their conclusions on trust. Which is not so different from what theologians have been saying for centuries: I cannot prove that God exists, but I am nonetheless convinced that God does.

I can remember when theology was known as 'the queen of sciences'. Perhaps, as the theoretical sciences continue to develop, we may reach a stage where science becomes 'the queen of theology'.

Deborah Broome

Useful books on 'science and religion' I have yet to finish reading properly or confessions of a multi-tasking book-skimmer

It's not always easy to bridge the gap between the sciences and the humanities. Those of us who, like me, left the formal study of 'science' behind at secondary school, need intelligible and reliable books to keep abreast of what may be happening in the scientific world. TV documentaries and magazine articles seldom do the trick. I therefore found the little book edited by Harriet Swain, *Big questions in science*, very useful. The format itself is helpful: an issue (e.g. 'What is consciousness?') is introduced by an informed journalist and then explored by an academic specialising in that topic. There are twenty issues explored in this way (including 'Does God exist?'), which means forty minds shedding light. And each section ends with a short reading list. This is a well-planned, accessible book.

There can also be a gap between science and Christian faith, at least in the minds of fundamentalist atheists and Biblicists. Francis Collins, until very recently the head of the massive Human Genome Project, and one of the world's leading scientists, lucidly writes in *The Language of God* about how he unites his faith in God with human scientific methods and conclusions about God's world. Lucid the book is, but the issues Collins grapples with require this lucidity, as they have often fallen victim to muddled and superficial thinking. Amongst other things he distinguishes, defines and critiques four basic options: Atheism and Agnosticism (When Science trumps Faith), Creationism (When Faith trumps Science), Intelligent Design (When Science needs Divine Help), and what he terms 'Biologos' (Science and Faith in Harmony). The strength and relevance of his book in this bicentenary year of Darwin's birth comes from Collins' unchallengeable expertise in biology, which makes his reflections on evolution (and bioethics) all the more interesting and cogent.

The other side of my brain learns a lot from good novels. *This Thing of Darkness* is an imaginative and well-researched recreation of the relationship of Charles Darwin and Robert Fitzroy, forever yoked together in the historical record because of the voyage of Fitzroy's ship the *Beagle* in 1831. It was on this voyage that Darwin began to lay the observational foundations for his theory of evolution. Fitzroy, a Christian believer constrained by the Biblical literalism of the time which assumed the historical truth of the creation stories in Genesis, struggled to keep pace with Darwin's expanding vision. Harry Thompson's novel is a vivid read, full of adventures both physical and intellectual, and with a New Zealand twist when Fitzroy becomes Governor of New Zealand after Hobson.

The intervening 177 years since the *Beagle* have seen many intellectual changes and many intellectual journeys. One interesting one has been that of Antony Flew, the Oxford analytical philosopher (and son of the Methodist minister and New Testament scholar, R. Newton Flew). For many years Antony Flew was a prominent and articulate atheist, frequently involved in public debates about the existence of God. In his

latter years he has retreated from the atheist position to an at least deist position. To what extent his 2007 book, *There is a God*, is written by him or ghost-written by R.A.Varghese, is a matter of controversy, with insecure atheists charging the latter with exploitation of an old man. Whoever wrote its actual words, Flew has subsequently taken full responsibility for the book's content, and the book itself is an elegantly and closely argued apologia for his change of mind. Its relevance to the science and religion discussion is that Flew looks hard at what scientists are saying about 'our finely tuned universe' and is unable to resist the conclusion that a Creator God exists.

'Those scientists who point to the Mind of God do not merely advance a series of arguments or a process of syllogistic reasoning. Rather, they propound a vision of reality that emerges from the conceptual heart of modern science and imposes itself on the rational mind. It is a vision that I personally find compelling and irrefutable.'

The book does not reveal a move to a full theistic position in which God acts and reveals Himself in history. Nevertheless he engages respectfully with N.T.Wright in an appendix on 'The Self-Revelation of God in Human History: A Dialogue on Jesus', a valuable twenty-eight pages in its own right.

In *The Decline of the West*, published in 1918, Oswald Spengler predicted that a retreat from science and the resurgence of irrationality would begin at the end of the millennium. As scientists became more arrogant and less tolerant of other belief systems, notably religions, he believed society would rebel against science and embrace religious fundamentalism and other irrational beliefs. His prediction has come partly true, and tragically this has impacted on populist and therefore political responses to the warnings of the scientific world about the gathering ecological crisis. The reality of global warming rests on broad scientific consensus, even though not all its mechanisms are fully understood yet. Humankind is slow to accept what the great majority of scientists are saying, and global catastrophe looms as a consequence. Seán McDonagh, a Columban missionary, is a prolific writer in the area of ecology and religion. His *Climate change: the challenge to all of us*, explores the issues which Christians (and all humanity) face. Perhaps a little too quickly written, it nevertheless makes sober factual reading.

This leads me to my last book, *The End of the World and the Ends of God*. Edited by John Polkinghorne (Anglican priest and former Professor of Mathematical Physics at Cambridge) and Michael Welker (Professor of Systematic Theology at Heidelberg), this is a demanding book on a necessary topic. Eighteen essays by theologians and scientists probe eschatology '...in the Natural Sciences' (Part 1), '...in the Cultural Sciences and Ethics' (Part 2), '...in the Biblical Traditions' (Part 3), and '...in Theology and Spirituality' (Part 4). The contributors are distinguished, and include Soskice, Brueggemann, Moltmann and Volf.

The opening essay, 'Scientific accounts of ultimate catastrophes in our life-bearing universe', focuses not so much on global self-destruction as on the two options for the future of the cosmos itself: [to] 'collapse under its own weight in a fiery big crunch or expand forever, dissipating itself in entropy death'. The Jesuit scientist William Stoeger writes:

'...they are certain to happen. They also represent the ultimate demise of life on this planet, and in the case of the universe, of the cosmic life-bearing womb itself. As such they present a very formidable challenge to our religious understanding of what ultimate destiny, eternal life, the resurrection of the body, and the new heavens and the new earth might mean.'

Personally, I'm tired of the endless fundamentalist preoccupation with science and the book of Genesis and the first Creation. I'm much more interested in science and the book of Revelation and the new Creation. *The End of the World and the Ends of God* promises much food for thought.

Peter Stuart

Swain, Harriet (ed.). ***Big questions in science*** (London: Vintage, 2003)

Collins, Francis S. ***A scientist presents evidence for belief*** (New York: FreePress, 2006)

Thompson, Harry. ***This Thing of Darkness*** (London: Headline Review, 2005)

Flew, Antony, with Varghese, R.A. ***There is a God: how the world's most notorious atheist changed his mind*** (New York: HarperCollins, 2007)

McDonagh, Sean. ***Climate change: the challenge to all of us*** (Dublin: The Columba Press, 2006)

Polkinghorne, John, and Welker, Michael. ***The End of the World and the Ends of God: Science and Theology on Eschatology*** (Harrisburg: Trinity Press International, 2000)

God of up to 26 dimensions

Some of the greatest scientists of history, such as Sir Isaac Newton and Albert Einstein, were strongly influenced by their faith, yet today one could be forgiven for thinking that science and Christianity are completely incompatible. However, not only do comparatively recent theories of physics have parallels with some aspects of Christian thought, they may even offer easier ways of coming to grips with the mysteries of God than traditional theological arguments.

The universe comprises three spatial or physical dimensions that we can perceive. Physics incorporates time as an additional dimension, giving us a total of four dimensions that we can directly experience.

In his satirical novel *Flatland* (published in 1884), English schoolteacher and theologian Edwin A. Abbot invented a world of only two physical dimensions. The plot revolved around an inhabitant of *Flatland*, whom was shown a third physical dimension, but was declared a heretic when he attempted to explain it to his fellow citizens. What was particularly significant though was that Abbot also suggested the possibility of there being even higher physical dimensions.

At that time, physics was about chalk and cheese. It incorporated diverse subjects with little in common. However, in 1919, German mathematician Theodor Kaluza wrote a letter to Einstein that would turn the world of physics on its head. By incorporating an additional dimension into the equation, Kaluza unified Einstein's General Theory of Relativity with Maxwell's Theory of Electromagnetism. Through the use of a higher dimension, he had brought together the formerly incompatible theories of gravity and light, although Kaluza's crucial discovery, namely that

fundamental forces could be explained by additional dimensions, would not really be developed much further until the advent of 'string theory', a new branch of theoretical physics.

Most physicists will tell you that the 'Holy Grail' of physics is to unify and explain all physical phenomena in one single theory. They may speak of 'grand unification theory' or the 'theory of everything'. Some may even say that this goal has already been achieved by a variant of string theory called 'M Theory', which proposes the existence of eleven dimensions of space and time (as opposed to four that we can perceive), although other variants of string theory propose up to 26 dimensions!

Either way, theoretical physics suggests the existence of a number of physical dimensions that you and I cannot directly experience.

I am not going to suggest the obvious and say that these higher dimensions can be equated with a spiritual realm or with any understanding of Heaven (or any eschatological place for that matter). Neither will I propose that physics has discovered where to find God. What I will say however is that if it is permissible for science to propose the existence of higher dimensions that we cannot perceive, then it is not inappropriate for science to accept the validity of the existence of God.

Many have misused science in attempts to dismiss Christianity. It is now time for us to use science to affirm our faith instead.

Darryl Ward

Science: child of theology

Aggressive atheists (eg Richard Dawkins' *The God Delusion*) continue to promote the idea that science and Christian theology are incompatible. It may surprise readers to find there is a totally opposite idea – that modern science is not just compatible with Christian theology, it owes its development to Christian theology.

Stanley Jaki, the eminent Catholic historian and philosopher of science, in referring to the history of science in Egypt, India and China asserts 'nothing is plainer in all three of them than that impressive scientific discoveries and technological achievements headed into a definitive standstill'. In Jaki's view, the stillbirth of science in those civilisations arose because of beliefs that the universe was animate. Either there were many gods who could each exercise personal and whimsical control over certain spheres of influence (Egypt, India), or 'Nature itself was not subject to a Mind and Lawgiver who transcended it' (China). What is it that is different about Christian theology?

First, the God of Christians is the One who through the Son creates a universe from nothing; a universe which is created and kept in being for God's pleasure. Next: the created universe is distinct from God. The exploration, investigation and manipulation of nature, therefore is not sacrilegious. Next, Scripture, and early theologians, speak over and over of the rationality of the created order. Finally, in Christian theology there is a God-given role for humans to understand and govern the earth.

One of the strange features of our universe is what is known as 'the anthropic principle'. Paul Davies describes it as 'the Goldilocks enigma' – the fundamental constants of the universe are 'just right' to enable human life to develop and be sustained. As one example, carbon atoms are essential for the existence of life, but how is it there are carbon atoms at all? It turns out that there is a fortuitous (Goldilocks) excited state of the carbon nucleus, which enables carbon nuclei to be formed within stars through the combining of three helium nuclei. There is no agreement among physicists as to what the anthropic principle signifies, but for Christians it certainly provides food for thought.

Another of the strange features of the universe is that its physical laws are mathematical. Why should this be so? And if this is so, what does mathematics have to tell us about what is knowable? In 1931, Kurt Godel proved that even for a simple mathematical system, the consistency of a set of propositions can be proven only by making assumptions which fall outside that set. You cannot have a consistent mathematical system which is also complete. In other words, the belief that mathematics is some sort of self-contained privileged knowledge, which might be able to explain everything, is a mirage. No mathematical system can ever be complete; hence no mathematical 'explanation' of the universe can ever be complete.

Reductionism, the notion that there can be 'nothing but atoms and molecules', is an arid and bankrupt philosophy. In his 1991 Reith Lectures, Professor Steven Jones had this to say: 'It is the essence of all scientific theories that they cannot resolve everything. Science cannot answer the questions that philosophers – or children – ask: why are we here, what is the point of being alive, how ought we to behave.'

Forty years ago there was much criticism of the idea of 'God of the gaps'; the view that theology was being squeezed into a smaller and smaller corner as science seemed to be able to explain more and more. My own view is different. There are sound philosophical reasons, which I have touched on above, for seeing science and theology as interlocking ways of looking at the world – different but related.

Oliver Sacks, the renowned neuroscientist, recalls as a boy seeing a giant model of the Periodic Table of the elements. The sight was a revelation, as he sensed that the human mind 'might be equipped to discover or decipher the secrets of nature, to read the mind of God'. Long may we continue that endeavour.

Lyall Perris

Coming up:

WIT seminar on *Economics and Christian Faith*, Saturday 13 June, Anglican Centre, 18 Eccleston Hill (off Hill Street), Thorndon, Wellington.

and:

Wellington Theological Consortium's symposium on *God and Darwin: Theology in Evolution*, Saturday 4 July, RHLT 1, Rutherford House (corner of Lambton Quay, Featherston Street and Bunny Street), Pipitea Campus, Victoria University of Wellington.

Contact us

The Wellington Library is located based on the first floor of the Anglican Centre, 18 Eccleston Hill (off Hill Street), Thorndon, Wellington.

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