

Faith and Science: Never the Twain Shall Meet?

What has science to do with theology?

Most people – including many Christians – would say that they are entirely unrelated. It is claimed that science deals with the world of reality and hard facts, but that theology belongs in a different box entirely, to be filed along with poetry and other humanities. It is of course true that science and theology deal with different subject matter and utilise different methods. Yet to say that science and faith are entirely unrelated is to claim too much.

One of the traditional ‘proofs’ of God’s existence was that natural world pointed very clearly to the existence of an all-powerful and all-wise Creator. This of course goes against the grain of much thinking today, when it is often believed that science has proven matters to be otherwise. The universe and all life on earth are instead widely held to be solely the product of blind and purposeless processes. Science and religion are considered to be – wrongly as I hope to show – in fundamental conflict and have been for hundreds of years.

This is a live issue for many people today. Religious faith is seen by some as a harmless illusion, and by an outspoken few as a dangerous delusion. But in either case faith seems to bear no relation to what is real, since science is thought to have been the victor in a science-religion war. This view spills over beyond science to the media and to the ideas that many people have about morality. So a journalist who knows next to nothing about science can merrily write that morality is what you make it, since human beings are merely ‘dancing to the music of their DNA.’ Such thinking cheers on sceptics in their scepticism, and causes Christians to fret that their faith might not be well grounded.

There are of course many individual scientists who are Christians or who at any rate believe in God, but these are not the ones we usually hear about. Instead, those who front the fabulously-filmed TV documentaries on astronomy or wildlife are usually atheists, often parading their unbelief in a way that would be unacceptable for believing scientists to do with their religious belief. In this climate, to call into question even the wildest atheist speculations about the origin of the universe or the origin of life is to risk being written off as ‘attacking science’ or ‘trying to smuggle religion into science.’

Central to this discussion is the concept of design in the natural world. All are agreed that there is an appearance of design, although it is usually claimed that this is only an appearance rather than a reality pointing to a Designer. But as we shall see below there are good reasons to think that a design framework is not the ‘science-stopper’ often claimed (saying ‘God made it’ allegedly prevents you from being curious about nature). In fact, a design framework has much to commend it in moving the scientific project forward, quite apart from its value in suggesting persuasively that the natural world points beyond itself to a Mind behind matter, a Creator of all things.

In the rest of this article, we will look in turn at three areas where science and religion have often been held to be in conflict: the scope of science, the history of science and finally some findings of science, particularly from the stars (cosmology) and the cell (biology). In each case, it is hoped that sceptical readers and believing readers will each be given food for thought – challenging or encouraging as the case may be.

The Scope of Science

It may be a surprise to learn that there is no single agreed definition of what science is among philosophers of science. Long ago Augustine said that everybody knows what time is until they try to define it, and it's a similar situation with science. Certain elements do certainly crop up: hypotheses, experiment, data, evidence, modification of hypotheses and so on. But a hard definition is surprisingly difficult. We should remember this when someone says this or that activity is 'simply not science.'

Michael Ruse, a philosopher of biology, has tried this definition: 'Science by definition deals only with the natural, the repeatable, that which is governed by law.'¹ Now that sounds plausible enough, until we notice that his definition rules out cosmology and the origin and history of life. You cannot repeat those events, and mainstream cosmology cheerfully admits that the laws of physics do not apply in the first moments after the Big Bang. So Ruse's definition rather loses its shine.

Science derives much of its impressive cultural authority in our society from the galaxy of new technology and gadgets that we all enjoy. We can travel to the other side of the world in a metal tube with wings, confident that we will reach our destination safely. We can send and receive messages and pictures in our personal communicators way beyond what was mere fantasy in Star Trek just a generation ago. And we also benefit from the development of new drugs and other medical treatment and so on. Now if we were only dealing with these branches of science, then we might be happy to go along with the late Stephen Jay Gould's famous model of the relations between science and religion of "Non-Overlapping Magisteria" (NOMA). It even sounds quite respectful, by recognising religion as a valid field of study albeit totally segregated from science. In the words of the old hymn Jesus bids us shine: 'you in your small corner, and I in mine.'

But for some branches of science, this really won't do. When we're dealing with matters such as the origin of the universe, the origin of life, the phenomenon of consciousness and brain science and so on, matters are very different. Philosophy – usually materialist philosophy (the view that matter and energy are all that exists; that the spiritual realm is purely imaginary) – can easily be smuggled into science. This then becomes not science, but 'scientism', the belief that science is the only source of all true knowledge.

Here are some examples. When the late Carl Sagan introduced his 1980 TV series 'Cosmos' (recently refreshed and re-issued) by saying, 'the Cosmos is all that is or was or ever will be', that was a statement of his atheist belief, not a conclusion of his astronomical studies. And when palaeontologist George Gaylord Simpson wrote that 'Man is the result of a purposeless, natural process that did not have him in mind'², he did not reach that view from his painstaking study of fossils. Harvard geneticist Richard Lewontin rather gave the game away when he wrote that it was not that the methods and institutions of science compel us to accept a material explanation of the natural world, but rather that this arises from a prior commitment to exclusively material causes 'for we cannot allow a Divine foot in the door.'³

Some of the most intelligent people seem unable to see that science, for all its wonderful

insights, cannot give a total view of all truth and cannot disprove the existence of God. One of the world's most famous and brilliant scientists is theoretical physicist Stephen Hawking. His first best-seller, the slim volume 'A Brief History of Time', adorned many bookshelves. At the end of that book, Hawking looked forward to there being a 'Theory of Everything', at which point, he said, we would 'know the Mind of God.' But in 2010 he changed his tune, to worldwide headlines such 'Stephen Hawking Says Physics Leaves No Room for God.' His newer co-authored book was called *The Grand Design*,⁴ and it now seems quite clear that Hawking 'doesn't do God.' So what has changed? Well, it's not the science, strangely enough. As Professor John Lennox of Oxford has pointed out⁵, what's changed is that Hawking has ventured outside his field to philosophy. Strange to say, he does so quite unwittingly. He first lists the traditional Big Questions such as 'How can we understand the world?', 'Where did all this come from?' and 'Did the universe need a Creator?' He then argues that these questions, the traditional concerns of metaphysics, are now to be answered by science, since: 'philosophy is dead.'⁶

Can you see the difficulty here? His claim that 'philosophy is dead' is itself a statement of philosophy! And so his claim must be false. And there's more. Hawking's case is that the laws of physics, not the will of God, give the real explanation of how the universe came into being. He argues that the Big Bang (the origin of the universe) was the inevitable consequence of these laws: 'Because there is a law such as gravity, the universe can and will create itself out of nothing.'⁷ But what Hawking is doing here is to confuse law with something else, usually called agency. The laws of mathematics may be true, but they never placed a pound in my pocket! And while Newton's laws of motion may explain the movement of billiard balls on the pool table, it's the player with the crack aim who pots the ball, not the laws themselves. In the same way, laws such as gravity cannot by themselves create anything.

The conflict usually portrayed as one between science and faith is in fact another conflict altogether. It is a clash between two opposing worldviews, two opposing faiths: the belief that there is a God, and that therefore Mind came before matter; and the belief that matter is all there is, and that therefore mind is merely a product of matter and hence that God is purely imaginary. We will look below at which of these two beliefs best fits with some important recent scientific evidence, and the answer may come as quite a surprise. But first we need to turn to another important area which has been seen as a key battleground between science and religion.

The History of Science

Most of us are used to the idea that there has been a fundamental conflict between science and religion during the last few hundred years of western science. The trial and imprisonment of Galileo is often brought forward as a prime exhibit in making this case. But among historians of science, it is very widely accepted today that, far from there being a conflict, there was in fact a close harmony. Witnesses in support of this view make up a veritable Who's Who of scientific discovery: Copernicus, Galileo (yes, Galileo – see below), Kepler, Pascal, Boyle, Newton, Faraday, Babbage, Mendel, Pasteur, Kelvin and Clerk Maxwell. These were all theists, and most were in fact practising Christians. And it wasn't just that these luminaries happened to live at a time when a religious outlook was culturally respectable and indeed the majority view in society. As is clear from their writings, it was their own faith in a Creator that drove them to make discoveries about the works of the One they believed in. A pithy summing up of this view comes from C.S. Lewis, who said: 'Men became scientific because they expected law in nature, and they expected law in nature because they believed in a Legislator.'⁸ This is why it is so outrageous when secular revisionists say that religious faith is a 'science-stopper'. History shows that it's quite the opposite: it's a science-motivator. No wonder, then, that James Clerk Maxwell, the first Director of the Cavendish Laboratory in Cambridge – workplace over the years of no less than 29 Nobel prize-winners in Physics – had this inscription from Psalm 111 carved over its doors as a

motto: 'Great are the works of the Lord, they are pondered by all who delight in them.'

So how then did the 'conflict thesis' gain acceptance? And how does it live on in the work of influential popular commentators even as it is rejected by historians of science? The 'conflict thesis' can be traced to the influence of two Victorian books: J W Draper's *History of the Conflict between Religion and Science*, published in 1875, and A D White's *A History of the Warfare of Science with Theology in Christendom* from twenty years later.⁹ Both books were part of a movement designed to discredit the Church (especially the established Church of England), and to replace it with what Thomas Huxley called 'the church scientific'. Scientists were, in the words of Francis Galton, to be termed its 'scientific priesthood.'

The books by Draper and White continue to this day to have an enormous impact, either directly, or indirectly through the influence of Bertrand Russell, who adopted their arguments with gusto in his *A History of Western Philosophy*. They view the entire history of western science through the prism of a conflict. Where there was no evidence to support the thesis, White merely made it up. A case in point is the religious opposition that James Simpson allegedly faced in Edinburgh when he used anaesthesia to relieve the pain of childbirth, which he did from 1847. White thunders as follows: 'From pulpit after pulpit Simpson's use of chloroform was denounced as impious and contrary to Holy Writ; texts were cited abundantly, the ordinary declaration being that to use chloroform was "to avoid one part of the primeval curse on women."¹⁰ This is fearsome stuff! But detailed investigation of both the medical and religious literature of the day has shown that religious opposition to Simpson's use of anaesthesia in childbirth was virtually non-existent. Such opposition as did exist was, more prosaically, on medical or physiological grounds.

A second example involves the use of entirely spurious quotations. Regarding the impact of the theory of Copernicus that the earth rotated round the sun rather than vice versa, Bertrand Russell attributes this direct quotation to Calvin: 'Who will venture to place the authority of Copernicus above that of the Holy Spirit?'¹¹ Significantly, Russell doesn't give a reference for this. But Thomas Kuhn, in his 1957 book *The Copernican Revolution*, attributes the Calvin quotation to White, and adds for good measure that the quotation can be traced to Calvin's commentary on Genesis. But Calvin makes no mention of Copernicus in that commentary, or indeed anywhere else. Recent debate tends to the view that the quotation was simply invented in the late 19th century to bolster the somewhat threadbare case for the conflict thesis. As previously mentioned, that case has as its centre Galileo, to whom we must now return. Now no-one today would want to defend the Roman Catholic Church's treatment of Galileo. Indeed even the church itself wouldn't now wish to do so, given its apology over the matter in 1992. But the way Galileo is often used as a poster boy for atheism and materialism in making a case that science and religion are always at odds is really quite absurd. He believed in scripture before he started his campaign, and he believed it when he finished.

In popularising the theory of Copernicus, who had died largely unopposed more than 20 years before Galileo's birth, Galileo was initially attacked by philosophers before his little difficulty with the pope. And he was attacked because he dared to question on the basis of careful observations through his telescope the reigning scientific theory, the Aristotelian dogma that had ruled for hundreds of years. Aristotle had held that the earth was stationary, the various spheres rotating around the earth being seen as in a realm of perfection without blemishes. So when Galileo reported seeing sunspots and other apparent imperfections through his telescope, his observations were seen as a direct challenge to the ruling Aristotelian view, firmly accepted by most philosophers of the day as well as by the church. Yes, bible texts such as Psalm 93:1 ('The world is firmly established, it cannot be moved') were invoked to bolster Aristotle's view that the earth not the sun was at the centre of the solar system. But Galileo's protest was not against the use of scripture but against what he saw as its misuse in propping up a defunct theory.

Yet it has to be said that Galileo didn't approach the conflict very wisely. We would say today that he was lacking a good PR adviser. For in a publication presenting the two opposing views in the form of a dramatic dialogue, he put the Aristotelian view of his erstwhile friend the pope in the mouth of one Simplicio – the Fool. He also irritated the scholars by having the effrontery to write in Italian rather than Latin. All these factors are in the mix in this curious tale. So whatever else may be said, it's certainly not a straight story of science versus religion, and the light of progress versus dark dungeons. He was in fact held under benign house arrest.

So the 'conflict thesis' of the relation between science and religion just doesn't fit the historical reality. No wonder that Professor Colin Russell has put it in such strong terms: 'The common belief that the actual relations between religion and science over the last few centuries have been marked by deep and enduring hostility is not only historically inaccurate, but actually a caricature so grotesque that what needs to be explained is how it could possibly have achieved any degree of respectability.'¹²

The Findings of Science

As with the matters discussed above, new findings in science are often paraded as if their discovery somehow invalidates the idea of a Creator. But again, we find that this is not the case. Although the existence of God may not be conclusively proved (or disproved) by looking at the natural world, it is arguable that some key recent findings of science fit far better with a God-centred view of reality than with atheism.

Cosmology

When we turn our telescopes to the stars, current scientific thinking is that the universe had a definite beginning – known as the Big Bang. But until a few decades ago, this was not accepted. Instead, the consensus among cosmologists was that the universe had always existed – the 'Steady State' theory. When the Big Bang theory was first proposed, it was stoutly resisted – not on grounds of evidence, but because it sounded too like the first verse in the Bible: 'In the beginning, God created the heavens and the earth.' And so we have Sir Arthur Eddington, writing this in the journal *Nature* in 1931: 'Philosophically, the notion of a beginning of the present order of Nature is repugnant... I should like to find a genuine loophole.'¹³ Even as recently as 1989 the then editor of the same journal, in response to speculation as to what physical conditions might have prevailed before the Big Bang, wrote this: 'the idea of a beginning is thoroughly unacceptable, because it implies an ultimate origin of our world, and gives creationists ample justification for their beliefs.'¹⁴ But no matter how much it may have seemed philosophically uncongenial to some, the Big Bang has been widely accepted because that is the way the evidence points.

Another interesting aspect of cosmology is the discovery over recent decades of 'cosmic fine-tuning' – the fact that gravity and the other constants of physics are all 'just so', amazingly fine-tuned in their various values. This is what physicist Paul Davies has called the 'Goldilocks Enigma':¹⁵ as with baby bear's porridge, the fundamental forces in the observable universe are 'just right' for carbon-based life. Why should this be? Those who argue against the obvious pointer to design (and hence a Designer) in these findings propose that there are multiple universes, with our observable universe just happening to look finely tuned. That of course, would not in itself logically remove the need for a Creator. But might the 'multiverse hypothesis' not simply be another case of queasiness in the face of evidence that is philosophically uncongenial? Professor John Polkinghorne is clear that the simpler explanation of one finely-tuned universe is to be preferred. After all, surely science is about explaining what we can observe, rather than postulating what in principle we can't observe.

This evidence for a cosmic beginning and for fine-tuning is pretty overwhelming. Arno Penzias, winner of the Nobel Prize in Physics for the discovery of cosmic background radiation, the so-

called echo of the Big Bang, is quite clear about the design dimension in this startling quotation: 'The best data we have (concerning the Big Bang) are exactly what I would have predicted, had I nothing to go on but the five books of Moses, the Psalms and the Bible as a whole.' [16](#)

Design and DNA

When we turn our attention from telescopes to microscopes, from the stars to the cell, again there seems to be clear evidence of design, although in this case the matter is much more controversial. It is widely held that Darwin's theory has rendered design thinking redundant. But is this really the case? The impression of design is certainly clear to all, atheist as well as theist. Hence Richard Dawkins defines biology as 'the study of complicated things that give the appearance of having been designed for a purpose' [17](#). So he stakes all on the deceptiveness of appearances. Francis Crick, co-discoverer of the DNA double helix says this: 'Biologists must constantly keep in mind that what they see was not designed, but rather evolved.' [18](#) So apparently a biologist must keep on pinching herself as she looks down the microscope: 'Not designed!'

What are we to make of this? Well of course in principle the presence of a mechanism does not in itself disprove agency, including divine agency. Knowing about the process of internal combustion does not remove the need for a car engine to have had a designing engineer. And the list of those who are persuaded that random mutation and natural selection are simply the way God did his creating is a very distinguished one: Alister McGrath, John Polkinghorne, Denis Alexander and Francis Collins, to name just a few. Yet there are indications that all is not well with Darwinism as an all-embracing explanation for the development of life. Philosopher of science Thomas Nagel (significantly not a theist, so with no axe to grind on this matter) published a stunning book in 2012 called *Mind and Cosmos*, in which he boldly defends what he terms the 'untutored reaction of incredulity to the reductionist neo-Darwinian account.' [19](#) (i.e. the view that unguided random processes alone account for all life). He writes: 'It is prima facie highly implausible that life as we know it is the result of a sequence of physical accidents...' [20](#) Anticipating a strong reaction to his book, he adds: 'I realize that such doubts will strike many people as outrageous, but that is because everyone in our secular culture has been browbeaten into regarding the reductive research program as sacrosanct, on the ground that anything else would not be science.' [21](#)

It is of course beyond dispute that natural selection can do certain things very well indeed: modify finch beaks, introduce resistance to antibiotics and so on. But these are small things. Rather than asking 'Couldn't God have used this process in creating?' (for those who believe in God, he can of course do anything), we can ask a much more interesting scientific question: 'Does random mutation and natural selection actually possess the fabulous creative power usually attributed to it?' For if it does not, then the first question loses its force. Saying we have identified the process by which finches acquire thicker beaks over some generations is one thing; saying that the same process must therefore account for the origin of birds (with all their organs, feathers etc) is a quite different claim.

Peering into the nano-world of the living cell, we find mysteries that material explanations alone are struggling to explain. The DNA in our cells – that which makes me me and you you – has been described by Bill Gates (surely the ultimate authority in today's society!) as 'like a computer program, but far, far more advanced than any we've ever created.' So where did the software that drives the cell come from? Those of us who are parents or grandparents and who have bought computer games for our children have no doubt often wondered why we pay £40 for a flimsy disk. The answer of course is that we are paying not just for the physical disk, but for all the hours of work put in by intelligent software engineers. Similarly, the text you are now reading on this page cannot be explained solely in terms of the pixels on the screen (or the physics and chemistry of paper and ink, should you have printed it out on paper); it is displayed in physical form in the various ways, but has its origin in the mind of the author. So then, with DNA: must that software really have arisen spontaneously from purposeless, random processes? Is that in

fact a coherent position? Or does the evidence not instead point to a Mind behind matter? If it takes a human to write a paragraph or even a word, what are we to say about the authorship of the longest word in the universe, the 3.1-billion-letter word of the human genome?

Former atheist philosopher Antony Flew, who died a few years ago, was certainly persuaded by this very evidence to stop being an atheist. No matter how philosophically uncongenial it was to him, when he considered the language-like code that is DNA he felt he had no alternative. Here is how he put it: 'My whole life has been guided by the principle of Plato's Socrates: Follow the evidence, wherever it leads.'²² Some commentators suggested that Flew had lost his faculties in the face of approaching death (he was over 80 at the time), not the kindest of conclusions. But perhaps he was simply doing what he said he was doing: following the evidence where it leads.

The Demise of 'Junk DNA'

One of the tests of a robust scientific theory is whether it is good at predicting what has yet to be discovered. Here again, recent discoveries about the living cell have found Darwinian predictions to be wanting, and have instead lent support to the much-despised teleological approach known as 'intelligent design'. Within the living cell, the proportion of the genome that codes for protein – and therefore has a known use – is very small. 98% of it has been considered for decades to be useless, and so was dubbed 'Junk DNA.' Time and time again this has been invoked – by atheistic evolutionists and by theistic evolutionists alike – as firm evidence for the process of unguided neo-Darwinism, 'just what we would expect' from long eons of random mutations. As recently as 2006, Francis Collins, the former Director of the Human Genome Project, set this forth very firmly as clear evidence that evolution was the way God had done his creating: otherwise, why would so much junk have been found?

Except that we now know it isn't junk. Literally every week that passes, new scientific papers are being published which reveal whole new levels of function within the living cell in this hitherto ignored genetic material. Far from a design framework being a hindrance to scientific enquiry, it now looks like the hindrance has come from another source: from a remarkable lack of curiosity arising from the mindset that junk is just what would be expected from Darwin's theory. And rather than a design framework being a 'science stopper' or being a sign of 'bad science', it is arguable that such an approach would have looked earlier for purpose and function in the parts of DNA that had not yet yielded their secrets.

The type of reasoning outlined above is sometimes dismissed as a 'god-of-the-gaps' argument: when we are confronted with something that we have no material explanation for, we say God has done it, only to have to retreat ignominiously once our knowledge increases. But the 'god-of-the-gaps' criticism does not apply here, since we are discussing an increase in knowledge rather than a lack. And the more we find about the wonders of the universe and of the living cell, the more these things appear to be designed. To adopt such reasoning in cosmology but to exclude it from biology, as many scientists who are also Christians apparently wish to do, seems to me to be both inconsistent and unjustified.

Conclusion

Some 3,000 years ago a young middle eastern shepherd was out looking up at the night sky. Perhaps a few years later, when he became king, he wrote a poem about the vivid impression the stars had made on him about God's glory. We have it recorded in the Bible as the first two verses of Psalm 19: 'The heavens declare the glory of God; the skies proclaim the work of his hands. Day after day they pour forth speech; night after night they display knowledge.'

After hundreds of years of scientific research, much of it carried out by those who, like Maxwell,

shared the Psalmist's faith, what do we find? Far from us having less reason than the Psalmist to believe in God as Creator, we in fact have much, much more – from the stars to the cell. Far from it being proved that 'matter is all there is', there are in fact many pointers that Mind came before matter. Far from it being shown that impersonal forces alone caused both the origin and the development of life in all its fabulous diversity, it looks increasingly as if such claims are overblown and neglect the clear evidence of a designing intelligence.

Endnotes

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7 Ibid. p. 180.

8 C.S. Lewis *Miracles*, (London, Collins, 1947), p. 110.

9 See further P.J. Sampson *6 Modern Myths about Christianity and Western Civilization* (Inter Varsity Press, Downers Grove, 2001), esp. chapters 1, 2 and 5.

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20 *Ibid* p. 6.

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