Does Science Need Religion?

Roger Trigg

Summary

Must science constitute a closed system, assuming all reality is within its grasp? So far from science being autonomous, and its method defining rationality, it itself rests on major assumptions. We may take for granted the regularity and ordered nature of the physical world, and the ability of the human mind to grasp it. Yet theism can explain this by invoking the rationality of the Creator.

The Power of Reason

The idea that science is anything but self-sufficient, and the supreme exemplar of human reason, would seem extraordinary to many at the beginning of the twenty-first century. Surely science is itself the source of knowledge, and the determinant of what is rationally acceptable. The possibility that it stands in need of further justification, let alone of a religious kind, would be dismissed out of hand. For this reason, science has often seemed secure and self-confident, and religious faith has appeared to retreat as scientific knowledge has grown. Sometimes religious believers have put their faith in the current inability of science to explain something. This is, however a risky strategy. Just because we do not know what causes something does not mean we have to turn to God as the evident cause. The problem may be the result of temporary ignorance on our part. With greater scientific progress, the gap in our knowledge can be filled, and one more reason for faith is removed. The so-called 'God of the gaps' is a very insecure God, the necessity for whom can be quickly removed.

The continuous retreat of faith was memorably pictured in Matthew Arnold's famous poem 'Dover Beach' in the middle of the nineteenth century (in what we now regard as a religious age). Watching the ebb of the tide, he referred to 'the sea of faith' and 'its melancholy, long, withdrawing roar'. The phrase is much quoted and still carries a resonance. It is easy to think that science is one of the major factors bringing about a fall in religious belief that is as remorseless and predictable as the retreat of the sea after high tide. Indeed the sociological idea of secularisation carries with it much the same set of implications. The view is that there is a law-like progression away from faith to ways of looking at the world that have no need of religion. There is, it appears, an inevitability about the process which means that all religion is doomed to retreat to the point of extinction. Needless to say, even if that may appear to be an accurate comment on the current state of Western Europe, it does not reflect social reality in other parts of the world, even in places, such as the United States, where modern science is influential.

Can science allow for divine action, or the working out of any divine intention? It is often thought that it can be understood in its own terms, and need not be seen as dependent on anything beyond itself. Science is thus the purest expression of human reason, and its function is to drive back the forces of superstition and blind faith. This is the legacy of the eighteenth century Enlightenment, which tended to see the world as a self-contained material mechanism, and human reason as the key with which to understand its workings. Any reference to God was at best redundant, and at worst a descent into irrationality. The Enlightenment at that time tended to take the power of human rationality for granted. Yet neither the possibility of reason and truth, nor order and regularity in the world investigated by science, should be easily assumed. Rationality has too often been seen as an ultimate fact and at times almost deified, as when after the French Revolution, churches were converted into Temples of Reason. Indeed rationalism and materialism appeared to go together, so that 'rationalism' can often seem to be a synonym for atheism.

Although, however, the world was seen in mechanistic terms, human beings were apparently able to stand outside the mechanism to understand it. After all, if reason were itself the product of a causal mechanism, like a sophisticated piece of clockwork, there is no guarantee that what we are led to believe is necessarily true. We simply believe what we are induced to believe, whether there are good reasons for the belief or not. To take the example of evolution, we may, according to the theory of natural selection, have evolved so as to hold certain beliefs

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naturally. Some beliefs would be beneficial, and help us to survive and have more descendants. Some argue that religious beliefs themselves could be in this category. The point, however, of such argument is often to explain rationally why some types of beliefs are widespread, despite being false, and this explanation demands trust in the independent power of human reason.

The belief in a universal rationality was typical of what has come to be called modernity, but, in recent years, so-called 'post-modernism' has challenged it. How can we be sure that we all share the same ability to reason, and can together arrive at a truth that holds for everyone? Post-modernism denies this and stresses instead the differences between traditions and epochs. What is regarded as obviously true at one time and place may be very different from the assumptions brought to bear at another time. There is then no overarching rationality, no common core of reasoning which all humans can share, no objective truth holding from generation to generation. Such assertions (which themselves have the ring of claims to objective truth) would undermine the whole rationale underlying science. It could no longer be seen as a systematic application of human reason, but just the result of the prejudices of a particular tradition. Thus we can talk of 'Western' science, or 'modern' science, the discoveries of which are not discoveries at all, but the mere outworking of historically conditioned assumptions.

Some have welcomed the way post-modernism deflates the pretensions of science, because, they think, space is thereby made for the functioning of religion. If science cannot claim truth, it cannot rule out religion on the grounds that it is false. This, though, comes at a high price. Not only is science rendered impotent, but no religious belief can claim truth either. If there is no reason for doing science, there is also no reason for being religiously committed. 'Reason' has been destroyed. The only consequence can be that science and religion are each seen as different bodies of belief, put in self-contained compartments. Neither can attack, or support, the other, or say anything of relevance to the other. They have to leave each other alone.

This stand-off between bodies of belief, which can be at odds with each other, may be welcomed in some quarters. Many scientists are willing to accept half the story, namely that religion and science have nothing to do with each other. They are more reluctant to go along with the post-modern idea that science is not the product of reason, and cannot claim truth. It is a cherished assumption of science that its claims, if true, are true everywhere and at all times. They apply equally in Washington and Beijing. They concern physical laws which apply equally now and here, and also at the edge of the universe and the beginning of time.

Separating science and religion

The evolutionary biologist, Stephen Jay Gould, adopted the idea of what he termed 'non-overlapping magisteria'[1]. He meant that religion and science each had their areas of concern but were different and had nothing to say to one another. In other words, religious language is not in the business of describing facts in the way that science does. Science says what happens, whereas religion is left to answer the question why. Science and religion are not in the same sphere of discourse. They cannot argue with each other because they have different functions.

This picture of the absolute separation of science and religion has its attractions for those who want to stop religion from having anything to say to science, while respecting its freedom to operate in its own sphere. In that way, science is freed from authoritarian claims derived from any ecclesiastical hierarchy or from interpretations of the Bible. Scientific reason is kept free of all theological considerations, and spared the need of messy confrontations with religious belief. Science and religion can go their own way. This fits in with current attempts not just to keep church and state separate, but also to make religion a personal and private affair, as distinct from the public role of science.

Keeping science and religion apart so that they do not fight each other is only half the story. On the post-modernist understanding neither can claim superiority, but that is not how many scientists see it. They think that science can still claim truth in an objective sense, showing what is true for everyone at all times. It is still the expression of human rationality. As a result, religion, even if insulated from accusations of outright falsity, has to be understood as operating in an area where the kind of literal truth claimed by science does not hold. It talks of 'values', as distinct from 'facts'. It may be concerned with the meaning and purpose we give to our own lives, but cannot be understood as setting itself up in rivalry to science. Truth is what science tells us. Religion deals with personal issues. In other words, science is objective, and religion subjective. Science is the product of reason, religion of some mysterious faculty called 'faith'. Science tells us about the world. Religion allows us each to work out for ourselves what is important for each of us. Science can hold its place in the public world. Religion is a private affair.

'A refusal to posit non-natural entities may be a way of making progress in science, but that does not mean that such entities cannot exist'

If science is the arbiter of truth, and cannot deal with non-physical events, that rules out by definition any possibility of supernatural, divine, intervention within the physical world (in a way, incidentally, that rules out basic claims of Christian doctrine about the Incarnation and Resurrection). Thus the refusal of science to cooperate with religion leads inevitably to the view that religion adds nothing to our understanding of the workings of the world being investigated by science. What is accepted as knowledge has to be subjected to public standards of testing, through observation, measurement and experiment. Science is made the arbiter of acceptable knowledge, and its methods define truth. Anything outside the reach of science is viewed as unprovable.

This is only a hair's breadth away from the positivist view that what cannot be scientifically tested, and verified, is meaningless. As A.J. Ayer said in his classic *Language, Truth and Logic*[2] 'all propositions which have factual content are empirical hypotheses'. He expanded on this by saying that 'every empirical hypothesis must be relevant to some actual, or possible, experience'. Metaphysical statements, outstripping experience, are strictly meaningless, and have no content. Such 'logical positivism' has long since been given up, partly because it cannot even deal with theoretical entities in physics. Nevertheless its influence lives on, and nowhere more than

1. Gould, S.J. *Rocks of Ages,* New York: Ballantine (1999), p.88.

2. Ayer, A. J. *Language Truth and Logic,* London: Gollancz, (2nd edn.1946), p.41

when a simple-minded distinction is drawn between scientific facts, and some shadowy subjective world of personal reactions to them. Science deals with what is 'factual', and religion has to be excluded. The two cannot impinge on each other, and the unspoken assumption is that scientific claims are rationally based, and religion is in the realm of the irrational.

Science is by definition an empirical discipline, and its method is *the* empirical method par excellence. It would never have made progress if it had been assumed too easily that if an empirical explanation was not immediately to hand, one should appeal to magic, or the supernatural. Anyone can attribute odd events to the fairies or goblins at the bottom of the garden. Modern science has rigorously focused on the physical world, and expects to find physical explanations. Yet this can mean that it can view the world as a closed and self-contained physical system. Since the advent of quantum mechanics, it has been recognised that this is a simplification, and there are ontological gaps at the microscopic level. It is, though, easily assumed that uncaused events must always be random, and are not explicable in terms of any external agency.

Scientific method has produced results. Our knowledge of the physical world, and its processes, has accumulated. It seems obvious that any appeal to supernatural agency is 'unscientific'. Yet what should we conclude from that? Many assume that it means that talking of God is irrational, since all reason is within the province of science. Yet it could equally merely demonstrate the intrinsic limitations of science in confronting aspects of reality which transcend the ordinary physical world.

A refusal to posit non-natural entities may be a way of making progress in science, but that does not mean that such entities cannot exist, or that, for example there may not on occasion be divine intervention. No scientist should resort to appeals to goblins, but that does not entail that the physical world has to be only explicable in its own terms, without the logical possibility of some external agency. Once we think that science can explain everything, anything beyond its compass must be as unreal as goblins. Science cannot deal with non-physical events and entities. Indeed it is a paradox that science is the product of the human mind, but can only deal with the idea of a mind by reducing it to its physical origins. This shows the possible limits of science as a way of acquiring knowledge, and does not foreclose the issue of what can be real. It is crucial to keep apart the questions of epistemology, how we gather knowledge, from those of metaphysics, or what there is that might be known. We must never assume, without much further argument, that what cannot be explained by science for that reason alone cannot exist.

Does science need God?

Science cannot escape philosophical assumptions about the framework in which its own activity takes place. For one thing, it has to assume that there is a real world with a particular character, and that science is not an elaborate system of fiction. Yet the idea that science has to be insulated from other branches of putative knowledge only makes sense if one has already made the judgment that science is the only source of knowledge, because no reality lies beyond its reach. In English, the Latin word for knowledge, *scientia,* has been narrowed to mean only empirical knowledge, and this perhaps reflects a pervasive assumption.

Many just take it for granted that science works, and do not bother to think what has to be assumed for this to be possible. Yet what warrants our presupposing that observation and experiment, and the whole panoply of empirical knowledge, is properly based? The fact that observations here, or experiments there, can be generalised so as to have a universal application should be surprising. Science, however, can only proceed on the assumption that every piece of nature is representative of other parts, even in other places in the universe. The so-called 'uniformity of nature' cannot be discovered by science, since only a small part of the physical world will ever be accessible. Yet we assume that physical laws are wide-ranging, and can help us predict what has not yet occurred. By induction, we always think we can go from what we have experienced to what we have not, from the known to the unknown.

'For science to be possible, the world must be ordered so as to behave in regular and intelligible ways'.

Science, in the modern era, did not appear in a vacuum. Why did the modern stress on experimental reasoning replace the previous penchant for more speculative reasoning? Instead of working out, perhaps through geometry, how the world had to be, scientists realised they had to investigate how it actually is; there was a growing recognition of the contingency of the physical world. God, it was thought, did not have to create the world in any particular way. Robert Boyle, for instance, believed that the laws of nature were totally dependent on the will of God, who was not constrained by anything beyond himself. It followed that human reason had to be used to see how in fact the world had been created. Yet why should our rationality be able to grasp that? There might seem little grounds for assuming that our puny rationality would be equipped for such a task. It would be by no means certain that the world behaved in an orderly manner that could even in principle be understood.

For science to be possible, the world must be ordered so as to behave in regular and intelligible ways, and it must also be understood, in particular, by the human mind. Neither can be taken for granted. In the seventeenth century, at the time of Newton and Boyle, it was thought that the underlying patterns and order present in the physical world were there because they had been created by a rational, divine mind. Indeed God was seen as the source and ground of all reason. Because the world was created by a divine mind, there is an underlying order present, so that, through God's will it behaves in a normally predictable and regular manner. Indeed the reference to the 'logos', at the beginning of St John's Gospel, identifying logos and God, refers to much more than anything to do with words and speech. 'Logos' in Greek philosophy itself refers to rationality, and the underlying intelligibility inherent in everything. Hence we can talk of biology, the logos about life, and even theology, the logos about God. The reason inherent in things, reflecting the rationality of the Creator, also makes rational reflection and discovery possible. We can reason scientifically because there is a rational structure inherent in the world. It is further possible for humans, it was thought, because we were made in the image of God, and in some small way share in His rationality.

The beginnings of modern science stemmed from the belief that there is a rationality intrinsic in the physical universe, because of its creation by the fount of all reason. If Reason permeates the universe, and we are endowed with a share in that reason, we can expect to understand, at least in some small way, the way the universe works. The theistic background answered

the two important questions. Why can we assume the regularity of physical processes, whether or not they are wholly determined, and how can our minds be attuned to understand them? The slogan of the school of philosophers and theologians known as the Cambridge Platonists[3], who were influential at the time of the founding of the Royal Society after the Restoration of the monarchy, was that 'reason is the candle of the Lord'. There was no question of humans getting above themselves because of this and considering themselves the masters of Creation. Our reason is, like a candle, pale and flickering, compared with the light of God's wisdom. Nevertheless, it was sufficient to enable us gain some knowledge. There was plenty of room for error, and partial knowledge, but we were, it was thought, made in the image of God, and could obtain a glimmer of understanding through science, and other operations of the human mind. Yet, according to this view of reason as rooted in God, human rationality was not unaided. It was, in a general sense, as much revelatory of God's purposes as the more specific revelation taught by Christianity. The Platonism of the Cambridge Platonists[4] was well able to cope with a contrast between an uncertain and wavering knowledge here and now, and perfect knowledge in another realm. That higher reality is, however, reflected in our physical world, so that this world, with its structure and order, depends for its meaning on a higher form of existence.

'As a matter of historical fact, modern science has developed from an understanding of the world as God's ordered Creation, with its own inherent rationality'.

Unlike the thinkers of the next century, those who paved the way for modern science both respected reason, and believed that its importance lay in its connection with the mind of the Creator. Rationality may not be able to answer every question, but we can rely on it as far it goes, because it is a God-given faculty. This certainly contradicts any post-modern denial of the power of reason. It also goes against the view of the later Enlightenment that reason must be tied to empirical experience in a way that rules out the supernatural. So far from an equation of materialism and rationalism, rationality itself needed a supernatural context, according to the founders of modern science. Their belief in God gave them confidence that the physical world in all its complexity and vast extent, could be understood. Science does not just summarise our past experience, but aims to show what we are likely to experience. It is in the business of prediction as well as description.

As a matter of historical fact, modern science has developed from an understanding of the world as God's ordered Creation, with its own inherent rationality. The issue is whether it can continue with confidence when it has jettisoned all theological assumptions. Why does the world behave so regularly that science can generalise and make universal claims about the nature of physical reality? Why should it have such an inherent rationality that our minds can make sense of it? Why should even the highly abstract symbols of mathematics, the creation of human minds, appear to be able to express its working? Without an appeal to God, as the source and ground of reason, who has made the world in a rational manner, there appears little prospect for providing any external legitimation for science. Yet if it has to be accepted on its own terms or not at all, many will reject it outright. It will come to appear to be nothing more than the cultural prejudices of a particular society at a particular time.

This not only restricts our idea of rationality to what is accessible to scientific methodology; it also removes any confidence that our reason is equipped to unlock the mysteries of the physical world. Keeping science and religion in separate compartments denies that they are dealing with the same world, and probably implies that religion is not describing reality at all. It does not, it is assumed, have the truth-claiming powers of science.

Unless we take science at its own (sometimes over-confident) valuation, and do not indulge in any philosophical concerns about its rational basis, we must take seriously the fact that the belief in God, as Creator, has in the past provided a firm basis for scientific understanding. A desire to understand the works of the Creator has been a prime motivation for science. Science needed theism in the seventeenth century at the time of Newton and Boyle. The eighteenth century saw a growing belief that science can survive on its own. Contemporary attacks on the idea of 'modern' rationality suggest that without a legitimate base science will not go on flourishing[5].

3. See Taliaferro, C. & Teply, A.J. (eds.) *Cambridge Platonist Spirituality,* (Classics of Western Spirituality), New York: Paulist Press (2004).
4. Taliaferro & Teply, op. cit., (3) *ibid*
5. For further discussion of the impact of materialism see Trigg, R *Philosophy Matters,* Oxford: Blackwell Publishing (2002), and for a discussion of the place of religion in public life, particularly in the face of the influence of science, see Trigg, R. *Religion in Public Life: Must Faith be Privatized?* Oxford: Oxford University Press (2007).

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