

1 The attacks on faith

The rise of science over the past 300 years has led to an increasing series of attacks on religious faith, seen by some as a defence of rationality against superstition and irrationality. This has been renewed with vigour in recent times, in particular by Richard Dawkins¹, Daniel Dennett², and Viktor Stenger³. The swelling of atheist literature is a reaction to a worldwide rise in fundamentalist religion. Doubt about faith and religion has been strengthened by such attacks. What are the intellectual resources and sources of spirituality that can sustain those of faith in these times of uncertainty?

One view⁴ is that science has its proper place in dealing with mechanisms—how things work—while religion has its proper place in dealing with completely different issues: meaning, ethics, and metaphysics. Hence there is no possibility of conflict between them, as they deal with quite separate domains. However, this does not seem right: there are at least some places where there are indeed potential or actual conflicts between them. The Dawkins-Dennett-Stenger school claims they do indeed deal with overlapping issues, and there are irreconcilable differences between them when they do so, with science winning all the time. Others⁵ have claimed that consonance between science and religion is possible; indeed, they fit

together in a complementary way to give an overall view of all reality, with basic agreement in the areas where there are overlaps. This is my view, which I will support in what follows. As I will point out, this means that some of the strong claims of reductionist science (reducing humanity to nothing but a conglomeration of particles and forces) must be wrong; science and rationality are not the answer to all our needs, as some claim.⁶ Faith and hope, religious understanding, and spirituality are important aspects of a full humanity.

2 Issues of conflict

Some issues have been problematic for centuries, and remain so. Some used to be areas of conflict, but are no longer so. Others are the site of active conflict, with much debate taking place at present. In this section I will briefly outline what I see as the main issues of each kind. This sets the scene for the later discussion.

2.1 Miracles and prayer

A very longstanding question is how miracles and prayer relate to the regularities of nature. The current science and religion debate adds nothing new to this old theme, and I will not comment on it further. (A lot of the debate hinges on how one regards biblical reports of what happened in the past—an issue in literary understanding rather than the nature of science.)

2.2 A start to the universe?

In the past, one conflict concerned the origins of the universe. There is no reason to question that the universe expanded from a hot Big Bang era at early times. During this expansion from a temperature of about 10^{12} degrees—1 followed by 12 zeros—to the present day, a sequence of physical processes

took place that are well understood: nuclear synthesis, the decoupling of matter and radiation, the formation of early stars and galaxies, supernova explosions at the end of the lives of first generation stars, second generation stars, planets and other things, which are pretty much understood.⁷ But what is not so clear is what happened before this hot Big Bang epoch. Did the universe have a beginning, or has it lasted for ever? This is still uncertain. It will not be clear till we fully understand quantum gravity—if we ever do. We are certainly not yet there.

It was taken by some that if you could prove the universe had a beginning, this would vindicate biblical claims and so would be good for religion. On the other hand, if you could prove that the universe did not have a beginning, this would be bad for religion—as with Fred Hoyle’s theory of the steady-state universe. The current evidence, however, is that the universe did indeed have a start.

Even in the time of St Augustine it was known that this was not a key religious issue, for the fundamental issue is not dependent on whether the universe had a beginning in time. The real question is why the universe exists and has the specific form it does. Why does the universe have this particular form when it could, in principle, have been different? That issue remains a fundamental metaphysical question, irrespective of whether it had a start in time or not. Creation of the universe is not something that happens just at an initial time and then ceases. Keeping the entire universe in existence the way it is, with its very being underpinned by particular laws of behaviour of matter that continue to be valid at all times, is a continuing affair—it is not confined to the start of the universe. It is an ongoing activity all the time the universe is in existence.

One option is the religious one: one can feel quite comfortable with belief in a creative God underlying the existence of the universe, whether it had a beginning in time or not. God could have created the universe in many different ways: it could have been *ex nihilo*, or *ex eternitas*; and the physical way He or She chose to create it is a matter of scientific interest but has no real theological substance. It is the underlying and supporting of existence that matters. The biblical stories are creation stories rather than scientific

treatises—important in their metaphysical implications, but not in their scientific content. It is true they are more consonant with a Big Bang view than with the concept of eternal existence, and in that sense the Big Bang may be preferable from the viewpoint of the monotheistic religions; but this is not a logical requisite for the concept of a creator to have validity.

2.3 Darwinian evolution

The more controversial question concerns the origins of life, the mechanism of the evolution of animals and humans. The old religious view—crudely speaking, God sitting at the drawing board designing giraffes and zebras and lions and so on—has gone by the board, and been replaced, as far as all serious biologists are concerned, by our understanding of the Darwinian evolutionary process.⁸ Instead, with the modern view of evolution, what you have is the incredible self-creating propensity of nature spontaneously leading to the emergence of complexity and life.

Now this self-creating propensity is based in the laws of physics. In particular, it is based in the way electro-magnetism and quantum theory work. These underlie chemistry, chemistry underlies bio-chemistry, bio-chemistry underlies the way that life comes into being. From the modern viewpoint, if God chose to create humans by the process of designing laws of physics which then make the coming into being of life inevitable, well, that's a wonderful way of doing it. There's nothing wrong with that at all. You can start worrying about the suffering involved in it, but that is part of the bigger problem of suffering in general.

So despite people in the rearguard still fighting out-of-date battles about the issue of evolution⁹, there is no fundamental conflict. If a creator shapes laws of physics so that life will come into being, that is an amazing way of getting creation going. There is no serious theological problem.

2.4 Metaphysics of cosmology

But there are still some questions that remain. Firstly, the issue of existence. Why is there a universe? Why are there any laws of physics? Why are the laws of physics the way they are?

What has become clear is that the way life evolves depends on the universe. The universe is a very extraordinary place, in the sense that it appears fine-tuned so that life will exist.¹⁰ A cosmologist can imagine ensembles of universes with all sorts of different properties: bigger or smaller; expanding faster or slower; with different laws of physics, different kinds of particles, different masses of particles; maybe with different laws of physics altogether. As a cosmologist, one can imagine these different universes and think about how they would evolve. And in most of them there will be no life at all: indeed, no process of evolution of any kind will be possible, because there will be no heavy atoms, or no atoms at all; the universe may not last long enough, or may always be too hot; there may be no galaxies at all, and so no stars or planets; and so on.

So what underlies the particular universe in which we exist? Why does it not only exist, but have such a nature that it forms a hospitable habitat for life? This is the issue of the metaphysics of existence, to which I will return later. It is a real issue of contention, which I will revisit. However, it is a rather intellectual concern: it is of importance mainly to those of a philosophical disposition.

2.5 The nature of humanity

The real crunch comes with the issue of being human. What is the essential nature of humanity in the light of modern physics, chemistry, and biology, and, in particular, molecular biology and neuroscience? This is the real potential conflict between science and religion, which is going to go on for a long time.

Here we come up against the views of strong reductionists who produce incredibly thin views of humanity, claiming human behaviour is nothing but the result of our component parts interacting with each other. In the old days it was mainly physicists who stated we are 'nothing but' atoms linked together in complex ways; physical interactions determine all that happens; all higher level interactions (the way we think and live our lives) are mere epiphenomena, consequent on those physics interactions. Nowadays it is much wider: people from sociology, evolutionary theory, psychology and neuroscience are

each making claims that they can totally explain human behaviour, and so view humans as being much less than they actually are. They do so with great authority (even though each has different ultimate explanations of human nature). If you disagree with them you are greeted with great derision. In particular, there are philosophers, psychologists and neuroscientists who tell us that consciousness is not real: it is an epiphenomenon. What we think are conscious choices are not real choices. This is a most important area; it is a real threat from the scientific side. I will return to it below.

2.6 The mind and soul

These are more traditional concerns, but are related to the nature of the human mind and the question of consciousness. Is there a soul separate from the body, that lives on somehow after bodily death? These are points of considerable tension, particularly in the light of modern neuroscience, which gives a molecular explanation of how the brain operates. This strongly suggests that what we see is what we get: the mind is based in the mechanisms of brain functioning, and will simply cease to exist when we die. However, despite the enormous amount scientists know about neuroscience and its mechanisms, about the neural correlates of consciousness, the different brain areas involved and so on, we have no idea how to solve the hard problem of consciousness. There is not even a beginning of an approach. So in relation to this and to issues which flow from it, like the question of life after death or reincarnation, one can be agnostic.

Related to this is the issue of religious experiences: are at least some of them real, or are they all self-delusions? Can the mind know entities of a totally other kind through some form of apprehension other than our usual sensory modalities (sight, sound, touch, etc.), or are sensory inputs through the known senses the only way we can obtain information about the external world? Present-day neuroscience strongly suggests the former, but is not completely conclusive; in particular, because the foundations of quantum uncertainty are not yet properly understood. The usual scientists' working hypothesis will be that there is no other way the mind can be in communication with any external entity other than through our usual physically based

senses. That opinion will not change unless substantial scientifically credible contrary evidence is given. However, it is possible that if there is such a thing happening, it will by its very nature be inaccessible to scientific probing. It might exist, but be outside what science can test.

2.7 Evolutionary origin of values and religious belief

A key issue is the question of the origin of values. For many decades the social scientists held sway, arguing that values derive primarily from the society in which we live. This is, of course, only a partial answer, for the question then is: so where did society get those values from? More recently there has been a major movement from the evolutionary biology side to claim that evolutionary psychology explains the total origin of values. I will return to this issue later, arguing that this cannot be the total story for a number of reasons; in particular, these arguments may account fairly successfully for the origin of much value-based behaviour, but that is not at all the same as accounting for the origin of normative ethical values themselves. This is, of course, closely related to the age-old problem of evil, as always one of the major perplexities for those who believe in a benign purpose underlying the universe. I will return to this at the end.

Finally, it is claimed that the existence of religion, too, can be explained in evolutionary terms, thereby showing why it exists and hence showing it is not true, as it has been explained away. But this is a non sequitur, and in fact is a specific example of the *evolutionary origins fallacy*; namely, the belief that once you have an evolutionary explanation of some human behaviour or other, you have completely explained it. This is simply not the case. To see this, realise that this argument applies to any human activity or understanding whatever, *including all scientific theories and evolutionary psychology itself*. That is, if you believe this argument, then (because it is an imperialistic theory that claims to explain everything) there has to be an evolutionary psychology argument explaining the existence and nature of evolutionary psychology too. Does this fact mean that evolutionary psychology is explained away? No, it does not: for the real situation is that an evolutionary psychology explanation for any human activity, theory, or belief whatever is

always a partial and incomplete explanation, and its existence is irrelevant to the truth claims of the theory involved. The claim there has to be an evolutionary psychology explanation for the existence of evolutionary psychology does not prove that any specific aspects of that theory are either correct or incorrect! The same holds for an evolutionary psychology explanation of theoretical physics and for religious beliefs.