

Modern Science and Biblical Faith

I'm starting near the end point of this article before coming to the main substance. It's a device that is commonly used these days in plays or films – you get a preview of where it's all leading up to, to help set the scene.

While holidaying in Turkey some years ago I was travelling in a party that included a headmaster who had become quite disillusioned with the Christian church. Most of the party were school teachers so they were naturally impressed by the headmaster who let it be known he had studied Classics – Latin and Greek – at Oxford University. After visiting Ephesus the group asked him to explain what had happened in Ephesus when St Paul visited there as they had not yet written up their diaries for that place. My wife and I were astonished by the account he gave which began with a statement that Paul was a troublemaker who created riots wherever he went and was a hypocrite who dodged responsibility for his actions by claiming falsely to be a Roman citizen to avoid punishment. When I challenged him about this he said he had studied the Bible and attended Church regularly until he lost interest because he could not swallow the many Bible miracles, especially those attributed to Jesus – happenings that he understood couldn't match up with science. His vicar evidently told him to forget the problem of miracles and be content with the parables and moral teaching of Jesus in the Sermon on the Mount. But such advice was unacceptable because, in his own words “I was disgusted with this attitude of an expert of the Church. As a classics scholar I felt this was an unacceptable way to treat the documents of the New Testament that were of proven reliability and had had immense influence over the course of 2000 years.”

Many other people have doubts about the relevance of Christianity because they have come to believe there is a basic contradiction with modern science and, for many, the miracles seem a clear obstacle to Christian faith. But is this really so? As a

former mathematical physicist, I am convinced it is not and this article is a simple attempt to explain why not. Some years ago an investigation was made in this country into the proportion of people in different professions who held to the Christian faith and one interesting statistic was that there was a higher proportion of scientists who professed Christian faith than in other professions. To many of my colleagues this was no great surprise but I believe the general public are unaware of it. After being appointed as a lecturer at Imperial College, London in 1960, the then Bishop of London enlisted several of the known Christians to visit a range of school Sixth Forms where we were invited to speak of our understanding of how science and Christian faith relate. Miracles of the Bible inevitably entered into our lectures and are an important topic for Christians to discuss openly with others. But such discussion can be of little value if we are not clear about the basic nature of both modern science and the purpose of the Biblical record. We need first to realise that there are basic assumptions common to both science and biblical faith. So the intention is to lay that foundation here so that later enquiries about miracles will be more productive.

The idea of a warfare between modern science and faith based firmly on the Bible dates back to the 19th century and while there are still those who are happy to exploit the notion, the notion is unwarranted. Of course there are many scientists who are not committed Christians and not a few support their lack of belief by making reference to their science. There are others who are not scientists and who find science threatening so they attack science and are happy to exploit the commonly held belief that science and faith disagree, so use it to doubt the value of both. A lot of misunderstanding results from a failure to grasp both the true nature of modern science and the fundamentals of the Christian faith as found in its textbook, the Bible. There are well-known marked differences in the objectives of Modern Science

and of Theological study. It comes as a surprise to some to find how much common ground there is between the two.

You'll have noticed that my title refers to Modern Science. By this we refer to the science that took a sharp turning point in the late 16th and 17th centuries, primarily in the countries influenced by the Christian Reformation, where the Protestant Reformers put forward a radically new way of exegesis of Holy Scripture that led to a regard for the Bible as the *supreme authority* for both faith and its practice. Previously 'hermeneutics' – the interpretation of Scriptures – was based on a complex method of *allegorising* that required adaptations, that the priestly experts found necessary, and explanations of natural phenomena were closely wedded to the way the Bible was being explained. Only learned men and women could follow it. So the art of medieval scientific understanding in much of Christianised Europe was what later became known as a *Mosaic philosophy*.

There had been sciences developed in other civilisations such as China, Hindu India, Arabia, and better known, Greek science and mathematics, for which the names of Archimedes, Euclid, Pythagoras are well known. Medieval scientific understanding had grown mainly out of Greek science and philosophy. Very little was done by way of experiment, and observation was often rather inexact. The success of mathematics at the time of the Greeks, mostly geometry, had encouraged an attitude that understanding of the natural world could be advanced by use of reason alone. Matter was regarded as unsuitable for self-respecting persons to handle, whether it was for agriculture or any other purpose so should be left to *labourers*. Cultured investigators therefore founded their approach to nature on *Aristotelian rational thought and philosophy*. As for geography, in the medieval period it was believed that human beings could not live in the tropics, so when the first explorers sailed the seas and crossed the oceans unexpectedly finding people living where none were assumed to live, some other preconceptions were also questioned. Polish Nicholas Copernicus had put forward a model of

the planetary system that conflicted radically with the long held belief that the Earth was at its centre. Tycho Brahe a Danish astronomer began a vast and accurate recording of the movements of stars and planets that were later analysed by German Johannes Kepler who formulated laws of the planets and location of stars. Galileo Galilei built the first refracting telescope and pointed it to the sky leading him to support Copernicus' theory. So doing he greatly disturbed many well-intentioned churchmen whose theological beliefs had been wedded to the Aristotelian philosophy and science. But many of the men of an enquiring mind had a strong faith in the Bible as God's book of revelation. And they included Isaac Newton whose mathematical formulation led him to his Law of Universal Gravitation. They did not doubt that God was Creator as well as Saviour – "the heavens declare the glory of God" – and at creation Genesis chapters 1 and 2 say, God saw what He had created as wholly good. Why should the ideas of a few astronomers be allowed seemingly to discredit Christendom?

But meanwhile the Protestant Reformers had pursued a new and more easily understood way of reading and interpreting the Bible – reading it with greater care before embarking on theological allegorising to interpret it and Luther pleaded for accepting *a simpler way of understanding it* that the unskilled could appreciate. So an early consequence was, Martin Luther and John Calvin especially, saw it also appropriate for those who studied natural phenomena to make more scrutiny of what they could observe prior to looking for rational explanations. Adam had been commanded by God to 'subdue' the earth (Gen 1v28), ruling over the fish, birds and every other living creature, so man's job was to find out more carefully what was out there and care for – not exploit – it. So observation and experiment came to the forefront of scientific activity in Christianised societies for the first time. We call it an ***Empirical Approach***. This was the birth of what we call Modern Science, in the hands of men of strong faith in Scripture, such as Robert Boyle, Robert Hooke and Isaac Newton who also were among the founders of the Royal Society in London. It still remains one of the world's premier scientific institutions. The

scientific outlook and methods they spearheaded had grown out of their Biblical faith and had much in common with a Biblical Christian outlook, even though as we mentioned earlier, scientific and theological agenda continue to have essential differences. Let me do a quick survey of three fundamental characteristics of science that were rooted in Biblical belief. They are so widely accepted that Modern Science is now practised on these bases by persons of all the World religions or none.

First, as we have already noted, modern science is **empirical** – we look to see what is out there before we try to form explanations of what we think the universe should be like. The Bible encourages an enquiring, *empirical attitude*. The writer of a Psalm says “taste and see that the Lord is good” – you'll get blessing by trusting in Him, so take a look at God and how he has revealed himself. Try the experiment, read the Bible, which is his **Book of Salvation**. Early modern scientists like those already mentioned, said God has written two books, the Bible – the book telling us how we may get to know God and his will. It is – his book of salvation, and the universe around us, also written or created by God, is his **Book of Nature** that we must read if we are to get to grips with natural phenomena. So we see that both modern science and the Christian faith accept the authority of data/facts to which we are to apply all our minds, senses and experimental tools. **There is a givenness about nature that we have to accept.** Jesus said that the way into the Kingdom of Heaven was to learn like a little child. Thomas Huxley in the 19th century, in defending Darwin and his theories said that the scientist has to learn to sit down before the facts to learn the truth of the natural world. Recently, in a succinct letter to The Times on 17 September 1997, Emeritus Professor Peter Fellgett, FRS wrote, “. . . *science is the humbleness to recognise that human thought alone is not a reliable guide to understanding the material Universe, but needs to be corrected and guided by experience, i.e. observation and experiment.*” He was saying that **the world is not ours to invent.** We have to submit to the data of the natural world we find out there. The Bible begins by saying the universe had a **creator** who also **sustains** it in

existence. To put it a slightly different way, we may say that both science and Christian faith are concerned with **objective truth** – that is data that can be recognised by men and women of all cultures. This is distinct from the notion of some older civilisations that believed, how nature works and the gods that control it, differs with geographical location and society.

Next, both modern science and Biblical faith hold to a **uniformity of nature**, that is, in science we believe there is a regularity about the way the Universe operates – *identical causes* (if we knew them all precisely in any situation) would always give rise to *identical effects*. Scientific methods are ways of seeking out those cause-effect relationships. Likewise the Bible asserts that **God is not capricious** but has **uniform standards** for all people. God not only created he also **sustains** His world in uniform ways – He is *faithful in his upholding* of the universe making it possible for us to plan and live ordered lives. The gods of the Greeks were capricious, often changing their minds in ways men could not anticipate. The Bible was written for peoples of all ages to understand that the predictabilities of nature come from God's care, so we read God promised, “summer and winter, seedtime and harvest will not fail”. This does not mean that God cannot work what we choose to know as miracles – working events that can surprise us. To keep this article short we will not develop this here. Modern science has existed for less than 400 years and the Bible is not to be read as if it were a science textbook. **John Calvin** the theologian at the time of the Reformation, in his commentary on the Book of Genesis wrote that **the purpose of the Bible was ‘to tell us how to go to heaven not to tell us how heaven goes’** – a warning to his readers not to confuse faith with the modern science by trying to use Genesis to resolve the dispute that Galileo had with the Catholic Church over the theory of Copernicus which gave a mathematically simpler account of the motion of the planets if the Sun rather than the Earth was regarded as a centre of the solar system. And had he lived in the 19th or 20th century I strongly suspect Calvin would have agreed his remark applied equally well to much of the dispute over theories of biological evolution.

Thirdly, in modern science and Biblical faith there is a common belief in *the ability of the human mind to understand the natural world*. Many of us will have taken this for granted but those who practised the medieval science, that we said is now described as a Mosaic philosophy, did not and there are societies today in parts of the world who know little or nothing of *deductive reasoning* and who are led to believe right belief only comes from what the headmen of their tribes say is the explanation of how or why things happen as they do. So this belief in the ability of the human mind to think and reason deductively is not a universally accepted point. It was a new principle that Isaac Newton and other men of Biblical faith found in the Bible – where we are told God created man in his own image and proceeded to communicate with mankind – and they propounded as a foundation of their novel ‘modern science.’ They reasoned, it was God himself who gave, at the beginning of the human race, the mandate for men and women to act as His stewards to control (or subdue) the earth and rule over all its creatures. God must have invested mankind with the ability to understand his creation, otherwise God was unreasonable to require that men and women should act as His stewards to tend the rest of the world. The Bible makes it clear that, for what God requires He also makes provision – He is not a despot. Other passages of the Bible tell us that we, the humans God created, can expect to understand and learn from nature, even learning something (as Paul wrote in Romans ch 1), concerning His eternal power and wisdom. The scientific enterprise is a way of gearing ourselves up for extending our understanding of the nature of the universe and how to conserve and use it constructively. Sadly, because of man's fallen nature (Genesis ch 3) we make mistakes or exploit the world in which we live to wrong ends. *Science is not complete* but is growing and modifying year-in, year-out. Physics is the most fundamental of the natural sciences. Quantum theory is only eighty years old and is a fantastically successful theory that has led to the understanding and prediction of vast areas of electronic, chemical and biological developments but Quantum Theory and General Relativity contain incompatibilities. The defects are most relevant to the work of nuclear physicists and

astrophysicists. Some of those who work in these areas are perplexed, wondering whether we are about to hit the buffers – coming to end points of understanding in physics. About thirty years ago one group of research workers, mostly in California, seriously proposed that science might find a new route of progress by incorporating ideas of Buddhism but virtually all attempts down that road were short lived. In contrast, Donald Mackay, a highly regarded Christian neurophysicist, gave renewed hope in the 1980's for further progress in fundamental physics when he wrote, “The Biblical doctrine . . . (of the natural world) . . . provides a more stable . . . foundation for our scientific expectations, in the stability of the will of God who is always faithful.”

There is a special excitement in the pursuit of scientific research and in teaching it to tough students – helping them develop an understanding of the nature of things and the beautiful simplicity by which truly enormous ranges of natural observations can be described, in a few rules that we call scientific laws and the mathematical formulations of the theories based on ‘laws of nature’. Many of my former colleagues, while not professing Christian belief experience *a powerful sense of awe* as they find new understanding of the natural world. To me it is no surprise that in the scientific profession there is a somewhat high proportion of Christian believers. I am more surprised, saddened, that many others, who are very imaginative and highly committed to scientific research and do good science, do not take the step of faith and believe in the Creator God of Scripture. God has not forced such belief upon us. He wants our willing acceptance of His Sovereignty and our love in response to His love for the whole of His creation. But scientists in general accept the three principle assumptions I have tried to outline, that came from early scientists who were men of Christian faith. Because of the nature and limitations of modern science, it is unnecessary for the doing of much good science, to make a step of faith to God and to Christ Jesus.

Of course beside the common ground between modern science and religious faith we have

outlined, there are also *fundamental differences* between practising science and practising faith. (No one can know or redo all science so it is essential for scientists to have faith in the integrity of the work of their colleagues that has been published.) One obvious difference is that whereas science deals with *objects* that we observe and are sometimes able to experiment with, Christian faith has at its core the belief in a *being*, God, who by the sovereignty of his very nature is *not an object* for mere observation or experimental investigation. God is to be *trusted*. He is not alone in requiring trust. Any *personal relationship* requires trust if the relationship is to continue and so it is appropriate to speak of a *personal God*. Try doubting the integrity of a friend and experimenting to see whether each statement she/he makes is true: the friendship will soon collapse! But in science, no theory is good science unless it is *testable* and it is a tenet of science that **all claims to new knowledge should be published** to be read and criticised by whoever wants to.

Another fundamental difference between science and faith has often been described by saying that science deals with How-questions but faith deals with Why-questions. That is grossly misleading and has caused a lot of unnecessary conflict. Young scientists as well as research workers have enquiring minds and regularly ask ‘Why’ so-and-so is happening. It is more appropriate to be aware that Science has a self-imposed limitation of dealing with the Why-questions of *immediate causes* and not with *first causes* so it cannot tell us the ultimate meaning and purpose of life and existence, or specify moral principles for us. That is the realm of religious faith and theology. Science has big self-imposed limitations even though some people like Richard Dawkins of Oxford use their scientific reputations to parade their scepticism or atheism – “There is no god” - which is every bit a religion that cannot be ‘proved’ by science. He wishes to try and rubbish all religions that believe in a supreme being. To quote Peter Fellgett’s letter again: **“Science has no dogmas and makes no claim to absolute truth, it simply offers the best available systematic description of what has so far been observed to happen.”** Many other scientists,

Christian and non-Christian, have said much the same for generations. The *laws of nature* proposed in science are concise statements of regularities that appear so far to accord with a wide variety of experimental observations. Many non-scientists fail to recognise that the *laws of science are descriptive*. They differ radically from *the laws of the Highway Code* which are *prescriptive* - they tell us limitations that governments have put on the way we may drive our cars. The laws of science are not prescriptive in this sense and so from time to time an aspect of science has to be reformulated to enable it to describe things that had not previously been envisaged or understood - hence the advent in the last century of Einstein’s Relativity and of Quantum Mechanics. But we still use Newton’s Laws and Chaos Theory when they are adequate. Laws of fundamental science sometimes also have a *predictive* role – they can give rise to consequences that no one in their wildest dreams had previously envisaged. That’s how the telephone and our electricity supply came into being. That’s how transistors and computers and other new electronic devices used by physicians and surgeons came about. Not to mention the ideas of anti-matter, black holes and all that: they could require huge changes in future understanding and open up unimagined practical consequences.

If you have read this far, it is likely you will be asking, but what about miracles? Aren’t they essentially non-scientific? Good questions! I have written another article, “Should belief in Biblical Miracles be seen as creating an inconsistency with Modern Science?”, addressing the question whether students of Science have to suffer intellectual schizophrenia if they are to believe the many events in the Bible that are commonly known as miracles, and as you will by now expect my conclusion is No. For this I hope the above with have served to lay a foundation on which my brief answers given can be found of help. But others have written with the same conviction, more extensively and to greater depth.

David M HUM, Oct 2007