

Science and Faith

Who am I?

I describe myself as a physicist. I have a doctorate in “Condensed Matter Physics”, which is a grand title for solids and liquids. I did an experimental PhD looking at the atomic-scale structures of liquid salts. I then spent several years as a postdoctoral Research Fellow at the Universities of Leicester and Birmingham. This included such diverse projects as radiography with neutrons, radiotherapy with neutrons and particle tracking using anti-matter.

About 12 years ago I moved into the business of nuclear safety when I came to work at the Berkeley Labs. I have since been sold off into a private consultancy business, along with about 60 others, and this summer we were sold again. But I am still a physicist, although I’m sometimes tempted to start calling myself an engineer.

One of the key qualities of a nuclear safety professional (whether a physicist or an engineer) is to have a questioning attitude. Perhaps if someone had asked the question “What makes you so sure you won’t have a tsunami greater than 5.7m” then events at Fukushima Daiichi could have turned out very differently.

So Why am I a Scientist?

A questioning attitude is what drives science forwards. It is also part of our human nature. What is science? It is not just a set of generally-accepted theories. It is more of a process whereby theories are put forward, most are rejected but some come to be generally accepted on the following basis: 1) they explain known observations, 2) they produce testable predictions and 3) these predictions are seen to be true in observations and experiments. To become generally accepted new experimental results must be repeatable. The Higgs boson (whose idea, incidentally is as old as I am) is a great discovery which seems set to vindicate the seemingly outlandish theory of particle physics which predicted its existence - a particle which actually gives all other particles their mass! But, despite claims of “five sigma certainties” (1 in ~1.7 million), I think the discovery won’t be fully accepted until the observation is repeated elsewhere.

This is the great strength of science – not just its ability to answer some of the big questions like “How does the universe function?”, “How did life evolve?” and “How can we cure this cancer?”, but also its rigour. This is why I am a scientist. I have always had a fascination with these questions, especially the first, so I chose to study

physics. Science has been spectacularly successful in addressing these big questions, including the second. But there are still gaps. However those who seek to fill those gaps with God find them reducing in both size and number. The Christian God is not, and never was, a God of the gaps.

So Why am I a Christian?

I think there will always be questions unanswered by science. These are questions of meaning, morality and ultimate origin. Science may give us the laws (or is it theories?) of physics, but will never answer why they are the way they are. With fundamental constants finely tuned so that intelligent life can, or even must, evolve, the universe might be teeming with life. But that is only made possible because the laws of physics are so finely tuned to permit it. This does not of course prove the existence of an intelligent designer. Non-theists could counter that there are indeed many other universes, either in parallel or in series with the one in which we live, and that such fine tuning is inevitable in at least one of them. Neither I nor anyone else can disprove that – and there's my point. If the theory can't be tested by observation or experiment, then it's not science. Multiple universes are no more a testable scientific hypothesis than God is. Both are a matter of faith. A matter of choice.

So why do I choose not to share the atheist's faith? From a materialist point of view we may appear to be nothing more than a very complex collection of atoms. Yet we find ourselves gazing up at the stars and down even to the inside of those atoms and asking the most profound questions. Why? Would evolution alone produce such inquisitive souls? What possible advantage is it for a species to invest so much time and effort hunting for the Higgs boson? It's of no use to us whatsoever. I've no doubt that some atheists could provide some kind of answer to that question, but I'm not sure it would be a truly scientific answer. Science has never compelled me to reject God.

I believe it is because we are made in God's image that we seek to understand God's creation. Not simply to make use of it, but for the love of knowledge itself. It is because God wants us to know him that he has given us our inquisitive minds and came himself to dwell among us. That is why I am a scientist and why I am a Christian.