

24/3/2013. The Higgs boson; science and scripture

CERN, the organisation that runs the giant particle smasher in a tunnel under Geneva in which physicists play snooker with elementary particles near to the speed of light, has almost certainly found the Higgs boson. Last year they said it was likely, but they have done more work. The interaction of other particles with the field associated with the Higgs acts as a drag on them, making them harder to push around. Because it is mass that is hard to push around, we say the Higgs particle gives other particles their mass. The idea came from Peter Higgs of Edinburgh University in the 1960s (who has since won the 2013 Nobel Prize in physics for it). The special role played by this particle has led the media to call it the ‘God particle,’ but this phrase is not popular with scientists, whether theists or atheists. We shall soon learn more about its properties. We already know its mass – about as heavy as an iodine atom. That is huge for an elementary particle and is why we needed such a big machine to find it.

Richard Dawkins and other secular writers like to set science off against religion. But there are many accords between science and the Bible, which is as expected given that God the Father ordained the laws of physics and God the Holy Spirit wrote the Bible through various men. The prophet Jeremiah (33:25-26) spoke of the “fixed laws of the earth and the heavens.” Every physicist, whether an atheist or a Christian, can see that the laws of physics are beautiful. That’s what attracted them to the subject. It’s a type of beauty that you have to learn mathematics to see, but then it’s as clear as the beauty in a sunset. Not only the heavens declare the glory of the Lord! *Why* are the laws of physics beautiful? That is the question I could not answer when I was a secular physicist, but can today: the laws of physics were put in place by a creator who has a sense of beauty. So this is the question I put to secular physicists. Also, if somebody says that matter is all that there is (denying the spiritual) then we can reply that the laws of physics are real – they exist – but aren’t themselves material things.

Another accord between science and scripture is the Big Bang theory – the scientific theory of the origin of the universe. Modern science, after 300 years, had developed enough (thanks to Einstein) to be applied to the entire universe. The universe is expanding, so it was smaller in the past. Einstein’s theory told us that far enough back in time it was right down to a single point. Its explosive early growth from that point is called the ‘Big Bang.’ (The universe doesn’t expand into any pre-existing space, for it *is* everything physical; ‘expansion’ means that the distance measured between objects within it generally increases.) Before Einstein’s work, science had nothing to say about the origin of the universe. The Bible begins: *In the beginning God created the heavens and the earth.* So, 4000 years after Moses wrote down the Book of Genesis, man worked out part of its first line for himself. Hindus and Buddhists suppose the universe has always been there, so science backs up Judaism and Christianity against Buddhism. Einstein’s work (‘relativity’) also showed that time and space are inter-related, so that not only space but time started at the Big Bang. Asking what went on before the Big Bang therefore has no meaning – it is like asking what is north of the North Pole. (The same wrong thinking is clear if you ask when God created time or where God created space.) In this is the resolution of the *Who-created-God* problem; the question supposes that time existed alongside God before he created the universe. But there is only God and his creation, and time is not part of God so it must be something he created. His ways are not our ways (Isaiah 55:8). Some Christians dispute the Big Bang because science says it happened much longer ago than their interpretation of the Bible suggests. But the age of the universe is a subsidiary issue; more basic is the accord between science and Christianity that it did have a beginning (and that God *intended* a race of creatures in his image, regardless of how he ordained the assembling of humanity from atoms – the ‘dust of the earth’). Keep perspective!

Moreover, if the laws of physics were slightly different – if the speed of light and the charge of the electron and some other things were only fractionally different – then the universe could never have grown from the Big Bang in a way that allows the remarkable complexity of life (which is based on unique properties of the carbon atom) to exist. Although this observation does not prove a personal God, it obviously suggests a designer. (This is known as the ‘anthropic principle.’) The most important issue for any human being then is his or her relationship to that designer.

There is a further accord. Science developed in the only human culture (Europe centuries ago) in which people generally believed that the Bible was true. In view of the large number of distinct cultures that have arisen in human history and geography, that is unlikely to be coincidence. Science will get done only where

people believe the world to be objectively real, whereas Buddhists (for instance) believe that everything is ultimately one, so that all differences between things are illusory if we could see deeply enough. Christians believe the world is objectively real and diverse because of God's creativity. We also believe that God put order into the universe, and that we may comprehend this order because we are made in God's image. Unless you believe those things you will never be motivated to get science going, and these were the beliefs of Europeans for many centuries. Historians often call it a Christian culture, although by no means everybody had personal commitment to Christ. That is why there were still wars in Europe that gave Christianity a bad name. But most Europeans believed that the Bible was fact, and this was enough to trigger science, with its characteristic dialogue between ideas about how those things behave and interact, and systematic ways of gathering data about their behaviour and interaction. Our culture has become secular since science began, but plenty of scientists still believe in God.

So when secular people say that religion is based on faith and science is based on reason, or on a form of doubt that makes you check things for yourself rather than blindly accept authority, it's not that simple. It is impossible for one person to do all the experiments on which modern science is based, so you actually take the results from books whose authority you accept – exactly how we read the Bible. And when you reason you start from axioms, which is another way of saying faith. Science has its axioms too; in particular, that laws of nature exist so it is not mere coincidence when the same experiment done in different laboratories gives the same results. If somebody says that science has disproved God, don't contradict them; ask them *How?* and watch them flounder. They are asserting it so make them set out their case. You can do that by asking questions such as *How?* or *Why?* or saying *Please explain*. Then come in with your punchline. To see a Christian thinker take on people like Dawkins in simple language, look at William Lane Craig on YouTube.

But there is one place where science and scripture disagree: miracles. Jesus walked on the waters of the Lake of Galilee. Peter tried it and began to sink as his faith wavered (Matt 14). Scientific laws of gravity will never explain that. When Jesus rose from the dead he did the impossible. Do not be defensive about it; the early Christian writer Tertullian says that it should be accepted (on the basis of eye witness testimony) *because* it is impossible! You don't expect ultimate answers to be easy, do you?