

Why Is The Kettle Boiling?

An excerpt from the book, *God and Science in Classroom and Pulpit* (Revised edition),

Written by Graham Buxton, Chris Mulherin, Mark Worthing, Morning Star Publishing, (used with permission)

Christianity is not Science

Like all lasting marriages, faith and the natural sciences have had to work at their relationship over many years. But despite their disagreements, reports of a divorce on the grounds of irreconcilable differences are simply untrue....

.....My wife and I have our differences but this does not mean we are incompatible or that we are headed for divorce.....

Science and Christian faith are not only compatible but can look forward to a long and happy marriage as they work together in the pursuit of truth.....

.....For the sake of discussion, let's think of science in terms of physics or biology or chemistry or astronomy. These are natural sciences which search for the mechanisms and laws of the universe in the hope of answering the 'how' questions; they look for the physical causes and constituents of what goes on in our world.

Christianity is different; on the one hand, as a worldview, Christianity is much more encompassing than science because it answers the big questions such as: Why are we here? or Why is there something rather than nothing? But on the other hand Christianity has little interest in other sorts of issues such as the 'how' questions.....

.....So Christianity is not science and it is a mistake to think that the Bible is a political treatise or a scientific textbook. In the words of Galileo Galilei, the central figure in the most famous so-called conflict between science and religion, 'The Bible teaches how to go to heaven not how the heavens go.'¹

Science is not a worldview: It's about mechanisms, not meanings

Science for its part is not a worldview. Physics and chemistry do not make claims about the meaning or purposes of particles or molecules. Biology and astronomy do not tell us the meaning of spiny anteaters or spiral galaxies. That's simply not what they're about, and if we look to science to answer such questions we expect more than it can offer.

Perhaps it's time for an illustrative cup of tea to help clarify this difference between a worldview, which answers questions of meaning and purpose, and the pursuit of science, which answers questions about mechanisms and natural causes. If I put the kettle on the stove to boil and ask, 'Why is the water

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boiling?’ how might we answer the question? It depends on how we understood the ‘why’ in the question: is the ‘why’ asking about meaning or mechanism? The alert physics student, focusing on the mechanics of the situation, might answer that the water is boiling due to the raised energy levels of the molecules of water induced by the heat from the stove. To which I might reply by putting a tea bag in a cup and suggesting that actually the water is boiling because I want a cup of tea. Both answers are correct, but what they show is that the question, ‘Why is the water boiling?’ is ambiguous. In fact it is two questions in one. It could be a question about mechanics: ‘What causes the water to boil?’ or it could be a question about meaning: ‘What is the purpose of the water boiling?’

Science has practical limits: It can't know everything

While science has been enormously successful there are some questions that make us realise that we are very far from knowing everything about the natural world. I'm thinking of challenges such as the following:

How the universe began: Stephen Hawking, the world's most famous cosmologist in his lifetime, postulated the spontaneous creation of the universe. He said, ‘The universe began with the Big Bang, which simply followed the inevitable law of physics. Because there is a law such as gravity, the universe can and will create itself from nothing ... The universe didn't need a God to begin; it was quite capable of launching its existence on its own.’² Now this sort of statement is wonderful for newspaper headlines but is a particularly obvious case of passing the explanatory buck from one level of explanation to another. Even if his theory is right, Hawking didn't explain how the universe comes into existence out of nothing; he proposed that it comes into existence out of the laws of physics, which existed prior to the universe as we know it. While Christians are frowned upon by atheists for using God as an explanation, Hawking was allowed to use the laws of physics as if they themselves demanded no explanation.....

Science has philosophical limits: It relies on presuppositions

.....The life and breath of science lies in its rigorous approach to uncovering the truth of the natural world based on certain working assumptions, which it does not question. This recognition that science doesn't start from a blank slate, that science must assume some things to even get off the ground, is captured by atheist philosopher Daniel Dennett, who warns of the risk of a naïve attitude to science that fails to see its philosophical foundations: ‘There is no such thing as philosophy-free science; there is only science whose philosophical baggage is taken on board without examination.’³

² Stephen Hawking and Leonard Mlodinow, *The Grand Design* (New York: Bantam Books, 2010).

³ Daniel Dennett, *Darwin's Dangerous Idea: Evolution and the Meanings of Life* (London: Penguin Books 1995), 21.

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.....One way of thinking about these philosophical assumptions is that they are like tools of the trade that we use to produce results. The carpenter uses a hammer without questioning it in order to drive a nail. The focus is on the nail and the hammer is taken for granted. So, too, science takes for granted its foundational assumptions but it cannot justify them scientifically; they must come first before science begins its work.

So what are some of these foundational philosophical assumptions of science?

- Science can only be practised by assuming that *the universe is governed by regularity*; that there are laws of nature that result in the possibility of repeatable experiments. This means that in the laboratory, the scientist must assume that the results of an experiment are due to the laws of nature and not to either random or miraculous causes. This assumption governs the scientist's methods of going about science and it is an assumption that cannot be proven.

- This regularity or uniformity that science is based on is exhibited in the way *science depends on induction*. Inductive argument is the process of observing repeated events or experience or experimental results and drawing the conclusion that future or unobservable events will follow the same pattern. For example, if I observe a million swans and they are all white I might conclude that all swans are white. But as this case shows, induction is not foolproof; Darwin arrived in Australia and found a black swan. Science simply has no way of justifying its confidence in induction.....

.....Now we turn to one more limit of science and it's the one that presents the most problems in the science and religion discussion. It's the crucial issue of the relationship of science to naturalism.

Naturalism is a worldview

Naturalism is the view that there is no God or gods and that the natural world that science investigates is all that there is. According to naturalism reality is only made up of 'natural' components such as matter and energy. Negatively, naturalism claims that the *supernatural* does not exist. In its cruder forms it equates Christianity and other faiths to belief in fairies at the bottom of the garden, celestial teapots, and the Flying Spaghetti Monster. Or in the words of philosopher Friedrich Nietzsche, Christians believe in things that don't exist.⁴

Expressed this way we can see that naturalism is a worldview in competition with other worldviews. It is a belief system that answers (mostly negatively) the questions of meaning we mentioned above. For the sake of clarity we will refer to this worldview as *philosophical* naturalism because it is

⁴ Friedrich Nietzsche, *Twilight of the Idols* (1888), 'The 'Improvers' of Mankind', Section 1. See: http://www.lexido.com/ebook_texts/Twilight_of_the_Idols_.aspx?S=8 (accessed 15.02.12).

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important to distinguish it from *methodological* naturalism which is not a worldview and is an essential foundation of science.

Science is based on methodological naturalism

Methodological naturalism is simply the assumption that when we do science there is no supernatural intervention taking place. The role of science is quite appropriately to look for natural explanations so supernatural causes are ruled out in the laboratory and in scientific thinking. Like the carpenter's hammer, methodological naturalism is a tool used in order to get on with the job. So although the scientist who uses the tool of methodological naturalism may be a religious believer, their religious belief plays no part in the way they do their experiments.....

.....To sum up, the practice of science is an intrinsically human pursuit full of the subjective judgments which that implies and it is dependent on a web of trust between scientists who are assumed to share personal moral commitments to truth and integrity.....

.....We have also seen that there are many differences between science and faith, the most obvious being that they focus on different objects of enquiry and they attempt to answer different sorts of questions. We have seen that by clarifying those sorts of questions, as well as the nature of the underlying assumptions of science, the fear of an inevitable and fundamental conflict recedes.

To any Christian who also has a healthy respect for natural science, this conclusion comes as no surprise. For the Christian, all truth is God's truth and, to use Francis Bacon's metaphor, both the book of God's word and the book of his works reveal something of the creator of all things.

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