On the side of the angels

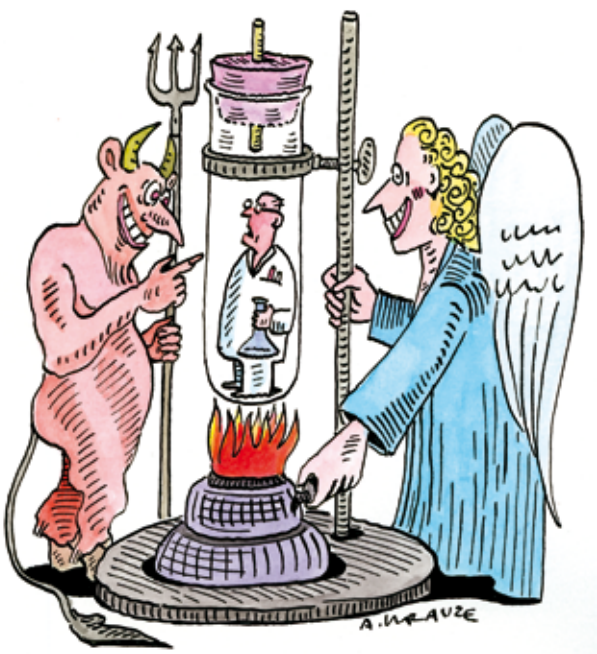
Attempting to use science to discredit religion will not only fail, it also does a disservice to science itself, says **Lawrence Krauss**

THE popular debate about intelligent design has, I am happy to say, discredited fundamentalists who want to censor science for religious reasons. It has also exposed pseudo-scientific organisations such as the Discovery Institute for what they are. Nevertheless, in pitching misguided evangelicals against the scientific community, it has had one negative effect: it has encouraged scientists to counter-attack by criticising religious faith in general.

Such attacks are nothing new. One of the more outspoken scientific opponents of religion, physicist Steven Weinberg of the University of Texas at Austin, has said: "There are good people, and bad people. Good people do good things, and bad people do bad things. When good people do bad things, it is religion." It was a brilliant sound bite, but one of Weinberg's less vituperative statements is more instructive: "Science does not make it impossible to believe in God. It just makes it possible to not believe in God." His point is that before the advent of modern science, all natural phenomena were viewed as miraculous, for want of any better explanation.

I agree with Weinberg that science has made it possible to dismiss God, and this, I believe, lies at the heart of efforts by religious fundamentalists to censor science in schools. However, the first sentence of his quote is equally significant. Questions and assertions about design and purpose lie outside the realm of science so long as these things cannot be empirically tested. Thus, science may never make it impossible to believe in God, even if we ultimately develop a scientific understanding of all phenomena right back to the beginning of time.

This point was well made by the Belgian priest and physicist Georges Lemaître, who was the first to demonstrate that Einstein's theory of general relativity predicted a big bang. When Pope Pius XII interpreted his result as a validation of *Genesis*, Lemaître countered that this was inappropriate. The big bang, he said, was a scientific theory that could be tested. Anyone choosing to use it to validate their belief in God, or as evidence that God is irrelevant, is doing so from their own religious convictions, and not from science.



There is a lesson for all scientists here. I know from experience that the great successes of our scientific exploration of the universe can tempt us to dismiss anything other than scientific understanding as of secondary importance. But spirituality, and with it religious faith, is deeply ingrained in human culture, and many people rely on their religious convictions to make sense of life. Whatever one's personal views about religion, it is undeniable that scientific understanding alone does not encompass the range of the human intellectual experience.

Scientists who fail to appreciate this, and who attack religious beliefs for being unscientific, do their discipline a disservice, not least because such attacks are themselves unscientific. This is why, while I am sympathetic with many of the points he raises, I disagree with Richard Dawkins's unfettered attack on God. Not only is it inappropriate to try to convince people of the validity of scientific theories by first arguing that their deeply held beliefs are silly, it is also clear that the existence of God is a metaphysical question which is, for the most part, outside the domain of science. Now more than ever it is important to understand the limits of science. The phrase often used to defend aspects of evolution has particular significance here: the absence of evidence is not evidence for absence.

"People of faith are ill served by ignorance, but that doesn't make faith and ignorance synonymous"

This is not to say that all theological interpretations are beyond scientific criticism. A fundamentalist interpretation of the Bible is in clear violation of physical evidence. The Earth is not 10,000 years old; the presently observable universe was not created in seven days; the sun did not stand still in the ancient sky. Scientists can help explain why these literal interpretations of the Bible are not consistent pillars on which to build a faith – at least for anyone who rides in cars, flies in planes or uses any other technologies that rely on the same laws of nature that tell us why these things are incompatible with the universe in which we live.

Yet scientists go too far when they attack more generally any belief in divine purpose. From a strategic point of view it's a waste of energy. It plays into the hands of those who claim that the scientific method itself is akin to atheism, and it weakens any efforts to speak out against those groups who regularly distort scientific education in the name of religion, preferring to promote ignorance rather than risk any threat to the faith of their flock. To counter these threats we need to argue compellingly that people of faith are ill served by ignorance, rather than argue that faith and ignorance are synonymous.

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