

The last lecture

You could have knocked me over with a feather. The lights, the camcorders, the atmosphere. A full auditorium and an expectant buzz. Quite a shock for a scientist used to lecturing to small audiences.

How was this miracle achieved? God is the answer. By this I mean that the lecture attracted a large audience, and a very interesting discussion, by the simple device of inserting the word “God” into the title.

A few weeks earlier, I had been invited by the school of humanities at my institution to give a public lecture on science and religion. The specific topic was left up to me, but the lecture was to be given under the auspices of the international SophiaEuropa research project, which studies the interface between religion and science. I explained that I knew nothing of theology, but this didn’t seem to deter the organizers. After some thought, I settled on a lecture on the Big Bang. After all, the origin of the universe has always been a popular topic – Stephen Hawking’s *A Brief History of Time* is one of the bestselling science books of all time.

Also, I’d been reading about “the last lecture”; this is a concept popular in the US whereby college academics deliver the public lecture they would give if it were their last. Interestingly, many academics choose topics well outside their area of research.

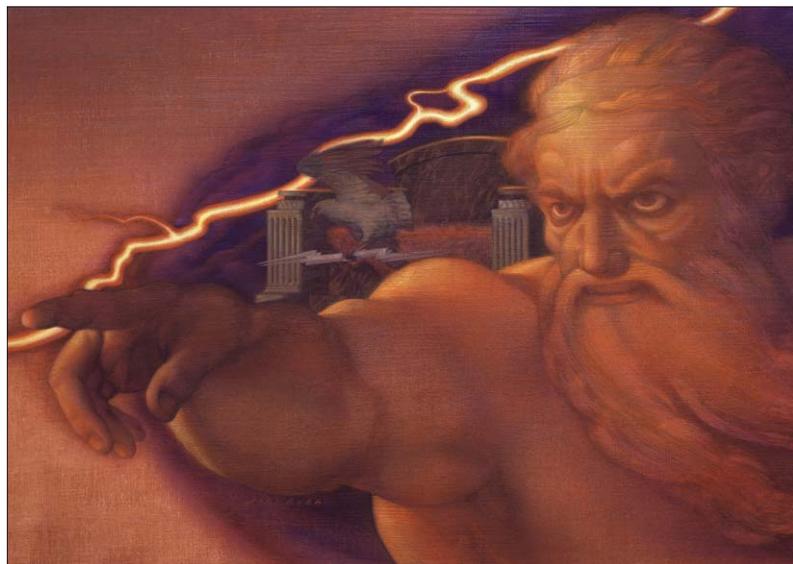
So it was to be in my case (my research area is solid-state physics). I do teach a basic course in cosmology at first-year undergraduate level, however, and it’s probably the most enjoyable course any physicist could teach. Not only are the basic concepts of major interest, it also seems that we are now living through a golden age of experimental cosmology, with ever more precise measurements pouring in from satellite telescopes. Another factor is the recent convergence of cosmology and particle physics: a fantastic meeting of two of the most fundamental areas of science.

Anyway, back to the lecture. Where would religion come into it? Well, every religion has its own view of the origin of the universe and presumably an alternate theory is always of interest. So, with the last line of *A Brief History of Time* in mind, I settled on a title. The lecture “The Big Bang and the mind of God: science, religion and the origin of the universe” was born.

Lecture night, and there wasn’t a sinner in the hall at 7.45 p.m. The college auditorium is quite big, so I was feeling pretty small. I was also getting a sinking feeling of déjà vu, as I once gave a talk on the meaning of relativity in the same hall, to an audience of about a dozen people. I popped out to do some breathing exercises and took my time. When I re-appeared, there was a surprise waiting – incredibly, the hall was almost full.

I’m told that the presentation went well – certainly, I’ve never had such an attentive audience before. I started with a few slides on the Galileo affair, but it seemed to me that the audience followed the 20th-century science equally well. Perhaps those who spend time thinking deeply about the meaning of it all find a science lecture quite easy to follow. At any rate, although the presentation covered the basic evidence for the Big Bang (from the expansion of the universe to the cosmic microwave background) and a brief description of the singularity problem, no-one screamed or ran away.

I had the distinct impression, however, that many in the



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audience were unaware of the basic evidence for the Big Bang, and they were intrigued to hear that the idea was first articulated by a Belgian priest (Georges Lemaître). As regards the underlying theory, the suggestion that there may not be a “before” (from general relativity) was a surprise to all, as was the possibility that something might indeed arise from nothing, at least on the quantum scale.

I then gave the briefest of reviews of theological models of the origin of the universe, before wrapping up with what I think is the scientist’s stance: that it is the job of science to explain the universe as best it can without reference to outside agencies. (I also presented my own pet theory, which is that another challenge to religion comes from psychology, since faith may simply be an invention of the conscious mind.) I didn’t shy away from including a few choice points frequently articulated by Richard Dawkins, not least the role of tradition in religious belief.

The discussion session afterwards was astonishing – over an hour and a half of questions, from all parts of the religious spectrum. For the discussion, I was joined by Michael Howlett as chair. He is both a scientist and a theologian, and between our different answers we probably achieved a reasonable balance. In true Irish style the discussion continued in the pub afterwards. For me, the input of the theologians was quite a surprise. From stem-cell research to the threat of climate change, the thinking theologians seemed as far removed from religious fundamentalism as I am.

All in all, I found my “last lecture” a very stimulating experience. No doubt some readers will question the wisdom of a physicist getting involved in such debates, but there is no denying the public interest in the convergence, or otherwise, of science and religion. As for me, I may have discovered an unexpected ally in the task of bringing physics to a wider audience.



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