Is Design Part of Science?

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Historically, it is undeniable that science emerged in a Judeo-Christian culture. Also that science has co-existed harmoniously with Christianity, at least up until the 19th Century. Before this time, scientists sought explanations in terms of natural law, chance happenings and, in the context of origins, intelligent agency. Their Judeo-Christian world-view meant that these three modes of causation were perceived as different aspects of God's sovereign power.

This Judeo-Christian perspective was healthy for science. It provided motivation for studying the handiwork of the Creator; it gave meaning and purpose to the Cosmos; it provided an ethical direction for research; and design inferences stimulated progress in fields such as medicine and the biological sciences.

The 19th Century saw the flowering of the Enlightenment, with a powerful movement to secularise science. The intellectual leaders sought to redefine science in terms of law and chance exclusively. Inevitably, design inferences involving the agency of a Creator were regarded as antithetical to science, and the benefits that design thinking had brought in earlier times were overlooked and forgotten.

These demarcation attempts were only partially successful. Inevitably, some areas of science were excluded. Design inferences are very much part of science in the fields of archaeology, forensic science, and the search for extraterrestrial life. In the last of these examples, the Search for Extra-Terrestrial Intelligence (SETI) uses design principles to analyse radio signals from space and has the long-term goal of inferring the existence of an alien civilisation.

Instead of arguing for the superiority of explanations based on law and/or chance, those involved in the secularising trend have opted to exclude design from science as a matter of principle (see note 1). In recent years, attempts have been made to counter the secularising trend in science. Evidence-based reasoning to design has reappeared. It is claimed that design inferences need to be an integral part of the methodology of science, and Dembski has led the way in giving conceptual and mathematical credibility to the subject (see note 2). Rejection of design should never be done as a matter of principle, but because law and chance provide superior explanations.

Much of the discussion of Intelligent Design (ID) has concerned biological systems which have the appearance of design. Richard Dawkins acknowledges this when he says that living organisms "give the appearance of having been designed for a purpose." However, in this presentation, I shall limit my attention to Intelligent Design in the Cosmos. (This material was presented in a debate about ID as part of the Brighton Science Fair in February 2006).

Science has always been concerned to understand patterns in nature, and "Intelligent design" has been defined as the study of patterns in nature that are best explained as the result of intelligence.

For many years, some physicists have set themselves the task of discovering the laws that determine why the cosmos is like it is. This was known popularly as the "Theory of Everything", a theory that was to unify our knowledge of all the other laws of nature.

At the same time, there has been a growing recognition that the fundamental constants associated with matter and the cosmos are finely tuned. Sir Martin Rees, the UK Astronomer Royal, was so impressed by this finding that he wrote a book about it in 1999: *Just six numbers*.

> "These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if any one of them were to be 'untuned', there would be no stars and no life" (page 4).

Fine tuning is a pattern that has been detected, but how is it to be explained? The first option considered was via "Law". This became known as the "Theory of Everything".

Scientists have searched hard for ways of understanding fine tuning as "law" but without success. Carlo Rovelli (*Nature*, 20 January 2005):

> **"**Rarely have we been so far from a theory of everything. Thinking that we might be close to it is the common error of those who mistake their own expectations for the ultimate truth."

So, if "law" is not the way forward, what about "chance"?

And there is another option: intelligent design. Some scientists have openly acknowledged that the Cosmos has the appearance of being designed. This, for example, comes from the journal *Nature*, 14 November 1996, p107:

> "It turns out that the physical constants have just the values required to ensure that the Universe contains stars with planets capable of supporting intelligent life...The simplest interpretation is that the Universe was designed by a creator who intended that intelligent life should evolve." (Smith J. M. & Szathmary E., "On the likelihood of habitable worlds").

These authors go on to say: "This interpretation lies outside science." The current culture in science is such the design option is a "no-go" area. Consequently, the majority have searched for ways of explaining fine tuning as a result of chance.

To do this, it is necessary to postulate billions of universes, with a finite probability that one will exist with the fine tuning that supports life. The favoured route for creating solutions theoretically makes use of string theory and the targeted outcome is the Multiverse.

We are left with a paradox about the fine tuning of the cosmos in which we live. On the one hand, intelligent design works with evidence and infers design in a rational way, but most scientists want to exclude this as a matter of principle. On the other hand, the Multiverse hypothesis provides a chance-based explanation, but it lacks any evidential base and it rests on extremely tentative theoretical foundations. Yet research into the Multiverse concept is deemed to be science.
However, in this case, intelligent design is far more compatible with the knowledge that we have gained, and it ought to be evaluated as part of scientific discourse, not excluded as a matter of principle.

We can perhaps start by considering this question "Is the Cosmos designed?" Why is the answer considered **science** if the verdict is negative but **religion** if the conclusion is positive?
Putting this a slightly different way: "Why is inferring the existence of a Multiverse based on theory and observations **science**, while inferring intelligent design based on theory and observations is opposed as an invalid **God of the gaps** argument?"

This case study reveals one of the key marks of secularisation in science: the rejection of the design inference as a matter of principle. To do justice to the observed pattern of data, researchers have created a scenario that was once dismissed as absurd. They have done this with no evidence of any other universe than the one we observe, and by using theoretical tools that are far from robust. Will history show that their rejection of the design inference led them into antiscience?

Has escapism from design done something similar within the biological sciences? This is where the controversy rages most fiercely and where emotions run high. My aim in this presentation is not to answer that particular question, but just to suggest that the question is worth addressing.

Science faces many crises at the moment. There are constant reminders about promoting the "public understanding of science". The ethical vacuum in science, with an increasing number of high profile lapses, reveal that science cannot be compartmentalised without cost. The use of science by multinationals is coming under increasing scrutiny, with legitimate public concern. These are all indicators that secularised science is part of the problem and that changes are needed (see note 3). Those who present "design" as yet another assault on science need to develop a more holistic view. It may well be that we need a "back to our roots" movement in science, in which case, ID is part of the solution.

Suggested reading:

On the Christian foundations of science: "For the Glory of God" by Rodney Stark. Princeton University Press, 2003.

On the secularisation of science: "Reason in the Balance" by Phillip E. Johnson, InterVarsity Press, 1995.

On the design inference: "The Design Inference" by William Dembski, Cambridge University Press, 1998.

On the Multiverse: "Just Six Numbers" by Martin Rees, Wiedenfeld & Nicolson, 1999.

Additional Notes:

Note 1: Most of us (aspiring scientific realists) are inclined to believe scientific theories to approach the truth, not just useful fictions, when they are validated. We also want to be able to employ scientific methods very widely to extend our knowledge. But a science constricted by excluding design cannot come to the truth, but will be trapped in an endless series of tentatively held errors, if philosophically/scientifically discernible design is part of true explanations in (for example) historical biology. We cannot know *a priori* that philosophically/scientifically discernible design is not part of true explanations in historical biology. Therefore design cannot be excluded as unscientific; at worst one might conclude that design as a matter of fact isn't part of the best explanation for living beings and their history.

Note 2: ID is a particular method of design detection (or detects a particular kind of design)- it is no part of ID to imply that other things are NOT designed. For example, at the deeper level of laws, initial conditions, etc everything is designed.

Note 3: The design inference is part of a wider worldview that justifies/grounds the beliefs (about human beings, the world and knowing) that are fundamental to the scientific enterprise. Worldviews that have no room for design also have no room for science or scientists.