

FINE-TUNING OF THE UNIVERSE (PART 6 OF 8): HOW CAN WE EXPLAIN FINE-TUNING?

Rating: 5.0

Description: Fine-tuning and design are two separate ideas. We will discuss all possible explanations for fine-tuning and see that divine creation is the only reasonable choice acknowledged even by some atheists.

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Published on: 14 Apr 2014

Last modified on: 24 Jun 2019

To many people the evidence of fine-tuning immediately suggests divine creation as the explanation. Even some atheists, at times, could not resist admitting this commonsense interpretation. Theoretical physicist and popular science writer Paul Davies wrote, 'The impression of design is overwhelming.'^[1] After discovering one of the first cases of fine-tuning, the late astrophysicist, Fred Hoyle declared, 'A common sense interpretation of the facts suggests that a superintellect has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question.'^[2]

Nevertheless, to exhaust all explanations, first, we will separate two words: fine-tuning and design. Second, we will apply mutually exhaustive causal explanations to eliminate the least likely possibilities to pick the best one.

Fine-tuning is a neutral term that says nothing how to explain it. It just means that the range of values of constants and initial conditions of the universe at the time of the Big Bang were extremely narrow and the physical laws are precisely set. If the values of even one of these constants or initial conditions were changed by the breadth of a hair, there would be no life in the universe today. The delicate balance required for life would have been upset.

Next, let us explore all other possible explanations of fine-tuning:

Universe is Self-Explanatory

Some say the universe is its own explanation, i.e. it is self-explanatory.^[3]

Don't worry if you don't understand what it means because the idea contradicts itself. It is logically impossible for a cause to bring about an effect without being in existence.

John Lennox observes, 'Attempts to argue that the universe is self-explanatory turn out to be as self-contradictory as the simple acceptance of a beginning as a brute fact is unsatisfactory.'^[4]

Necessity

'Necessity' means that the constants and quantities *must* have the values they do. But, why does the universe have to permit life? Why do the constants and initial conditions have to be what they are?

There are no good answers to these questions, therefore, physical necessity is implausible since there is *no* evidence that life-permitting universes are necessary.

As a matter of fact, life-prohibiting universes are more *likely* than a life-permitting universe. As Paul Davies wrote, "It seems, then, that the physical universe does not have to be the way it is: it could have been otherwise."^[5]

Universe Was Either Created by Physical Laws or Was Self-Generated

If a cake cannot generate itself, how can a universe generate itself? It is hard to believe, but some atheists suggest that the universe was brought into existence by a theory, or laws of physics, or mathematics.^[6]

First, ascribing intelligence to mathematical laws and believing they could be intelligent is non-sense.

Second, explanations of physical phenomenon like the rising of the sun from the East with laws of physics are descriptive and predictive, but not creative. Who created these laws? Newton's law of gravitation does *not* create gravity or *cause* anything to happen. Replace the universe with a jet engine. Will we say someone made it for a specific purpose or shall we dismiss the agent who made it and say the jet engine arose naturally from the physical laws? This will be absurd. God does not compete or conflict with the laws of physics as an explanation. Laws of physics can explain how the jet engine works, but not how it came about in the first place.^[7] Lennox put it well in one of his lectures, 'nonsense remains nonsense even if talked by famous scientists.'

Chance or Brute Force?

Could the fine-tuning be due to chance? Could it be an accident that all constants and initial conditions just fell into the range that allows life? The problem is that the chances of a life-permitting universe to exist are so *remote* that this alternative becomes unreasonable. No respectable physicist (including atheists), believes that fine-tuning can be explained by pure chance.

Someone might ask, "when does something become so improbable that it becomes impossible?" Williams Dembski, a mathematician, attempted to answer the question in his book, *The Design Inference*. You consider the number of particles in the universe *and* you also consider the number of seconds in the universe, which he places at 10^{25} . Then he multiplies this by 10^{45} as the number of events, or reactions, that could take place per second. On this basis, he arrives at a probability which is one half times one out of 10^{150} . Anything that falls beyond that probability bound, he says, is not different from impossibility.

Furthermore, the objection is answered with an illustration given by John Leslie^[8] Let us say you are dragged in front of a firing squad of 100 trained shooters standing at point-blank. You hear 'Ready! Aim! Fire!' You then hear the sound of guns, but, amazingly, you are still alive! Did all the 100 shooters miss? What conclusion will you reach?

Would you say, 'guess I shouldn't be surprised they all missed! After all, had they not missed, I would not be here! There is nothing more to explain!'

No person in their right mind will accept this explanation. In light of the enormous improbability that *all* shooters missed, a *reasonable* conclusion will be they all missed *on purpose*.

Footnotes:

[1] Davies, Paul. 1988. *The Cosmic Blueprint: New Discoveries in Nature's Creative Ability To Order the Universe*. New York: Simon and Schuster. 203.

[2] Hoyle, Fred. 1982. The Universe: Past and Present Reflections. *Annual Review of Astronomy and Astrophysics*. 20:16-35.

[3] Atkins, Peter. 1994. *Creation Revisited*. Harmondsworth: Penguin. 143.

[4] Lennox, John C. 2009. *God's Undertaker: Has Science Buried God?* Oxford: Lion. 69.

[5] Davies, Paul. 2005. *The Mind of God*. New York: Simon & Schuster. 169.

[6] 'The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing? Is the unified theory so compelling that it brings about its own existence? Or does it need a Creator, and, if so, does he have any other effect on the universe?' (Hawking, Stephen. 1998. *A Brief History of Time, From the Big Bang to Black Holes*. London: Bantam. 174)

'There is no need to invoke anything supernatural in the origins of the universe or of life. I have never liked the idea of divine tinkering: for me it is much more inspiring to believe that a set of mathematical laws can be so clever as to bring all these things into being.' Paul Davies reported by Cookson, Clive. 1995. Scientists Who Glimpsed God. *Financial Times* April 29, p.20.

[7]

Lennox, John C. 2009. *God's Undertaker: Has Science Buried God?* Oxford: Lion. 65-66.

Lennox is a British mathematician and philosopher of science who is Professor of Mathematics at the University of Oxford.

[8]

Leslie, John. 1989. *Universes*. London: Routledge. 14.

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