



Essential Philosophy with Dr. David Schenk

Lesson 17: The Fine-Tuning Argument Continued

Outline:

Fine-Tuning Argument Continuation

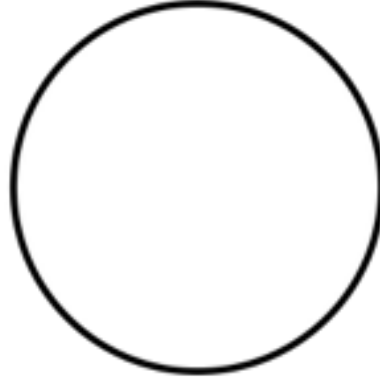
- ***Fine-Tuning Argument summary:*** The entire physical cosmos must have been meticulously ordered or designed (“fine-tuned”) in the beginning to allow for intelligent life to emerge or develop in the first place.
- **How finely-tuned does cosmological constant need to be in order to avoid rapid collapse or expansion of cosmos? How narrow is the acceptable range for the cosmological constant to give rise to any kind of a life permitting cosmos?**
- You must get the equation down to a trillionth of a trillionth of an inch. Either direction away from zero and the whole system will deconstruct. So the likelihood of it happening by mindless luck is hysterically low.

Probabilities of cosmological constant occurring by sheer luck

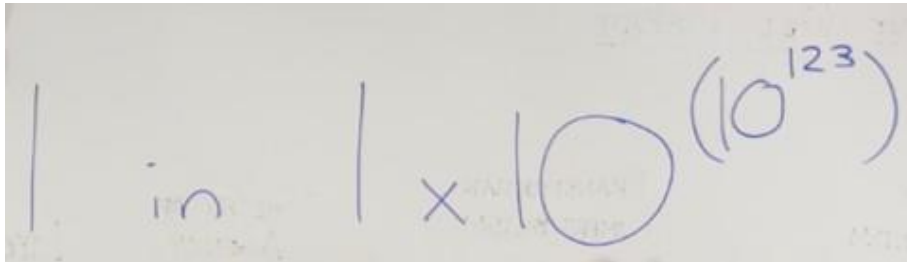
- When we calculate the probabilities cumulatively, we take all of the powers and add them. When we calculate the likelihood of something happening, we multiply the numbers.
- Many of the constants for the fundamental laws of physics have to fall within a range of values for life to exist.
- Even atheist physicists are aware of the unlikelihood of a life permitting universe to exist.
- *“The remarkable fact is that the values of these numbers (the constants of physics) seem to have been finely adjusted to make possible the development of life. They all seem deeply conspiratorial in the values they occupy and the way they balance off each other.”* - Stephen Hawking

Third vector of the Fine Tuning Argument

- Fine-tuning of the initial distribution of mass-energy of the entire known universe
- How precise does the distribution of all the matter and energy of the early universe have to be to give us life permitting conditions?
- Discussing mass energy distribution for the universe



- *Pre-Big Bang cosmology*
 - The universe contained all the mass energy in the volume of a basketball. As it expands, any clumps in it is going to become more exaggerated, at an exponential level.
 - When you pour your organic half-and-half into your coffee, it is one inconsistent mass before you swirl it around and distribute it with a spoon. **Reflecting the cosmos, how smooth does that mug of coffee have to be after the distribution of the half-and half in order to give life permitting conditions?**
 - It has to be very smooth, otherwise any clumps will result in a disaster, like super dense black holes, with no life or galaxies.
 - Physicist Roger Penross calculated the likelihood of this smoothness, and the number almost cannot be represented by ordinary means, *needing 123 zeroes*. The odds of this happening by dumb, stumbling luck is...



- Based off these numbers, philosopher and ex-atheist Anthony Flew could not believe that the cosmos maintain smoothness through sheer luck
- That is the basics of the fine tuning argument

Responses and rebuttals to the fine tuning argument

- Side note: Laws of physics themselves can't be quantified so the probability or improbability can't really be assessed, while with the constants and initial distribution, you can give them hard, indisputable numbers



- Two main alternative explanations
 - ‘Lucky accident’ or ‘brute fact’ hypothesis
 - **This argument acknowledges the ridiculous unlikelihood of life permitting conditions occurring by dumb luck, *but at least we are here*. The odds are still a non-zero value, so it is still possible.**
 - **Seems implausible because this is an interestingly conspiratorial brute fact.**
 - If you spill coffee, which forms the face of Abraham Lincoln, will you say “Wow! What are the statistical odds of that happening by mindless, completely random luck? Well, awfully low, but after all, it is a non-zero value and it is there, so I shouldn’t be surprised by it.”
 - No, if that were to happen, you would suspect that this is some sort of trick, where someone made an imprint/carved an outline/laid some wax where the coffee would form the face of Abraham Lincoln.
 - Because everyone knows that anything that conspiratorially orderly does not simply happen for nothing.
 - Multiverse (or M) theory - used by philosophers and physicists nowadays.
 - If you had many universes (possibly infinite), then what are the odds of at least one of them being life favorable by sheer, dumb luck? The odds improve the more and more universes there are.
 - **Reason behind the M theory is:** If we believe that this system is rigged and intentionally arranged to produce life permitting conditions, then that leads to the conclusion of a Greater Being, of God, and that’s irrational. So we have to go with Multiverse Theory.
 - Creating a Multiverse Theory to reject the idea of God represents a mindset that seems closed to exploration and evidence, based on stubbornness.
 - All they have done is dismiss the possibility of fine tuning within a singular universe, on account of the Quantum Mechanical Machinery, but that itself needs fine tuning as well.

Collins’ original work on ‘Discoverability of the Universe for life permitting conditions and being discovered by the creatures within it’

- **The way the M theory hypothesis works as explained by atheist physicists:** When you have indefinitely many universes, there is nothing surprising about the fact that one of them by sheer dumb luck give rise to just the right life permitting condition.
- A rule named ‘Observer Selection Effect’ determines that we should not be intellectually surprised to discover that we are in such a universe. It’s fair enough that one of the many universes has life permitting conditions.



- **But how coincidental and convenient is it that we are in one of these universes, instead of a hostile one?**
- *According to the Observer Selection*, we can exist in life permitting conditions in the first place, so intelligent beings can **only** find themselves in such favorable places.
- But Collins says what is surprising is that we find ourselves not only in a life permitting environment, but in an optimally sound environment.
- Shenk illustrates a bell curve. **Isn't it strange to find ourselves not only within the curve, but at the peak, where conditions are the most ideal for life? Even stranger is that in this universe, the beings in it are aware of it and can ask questions about it.**