

## On The Anthropic Argument and The Fine-tuning Argument

We are each entitled to our own opinions, and it's my opinion that, as of this writing, 8/19/2021, physicists are endlessly confused about both the anthropic argument and the fine-tuning argument. Here is my take on them.

### 1. The Anthropic Argument

There is not *one* data point, there are *two* data points. If we want a complete picture of reality we need to take into account all the available data, which in this case means two data points. The two data points are 1. the (indeed solipsistic) universe as it actually is right now. This leads to the conclusion that the constants are what they are because they could not be otherwise—if they were different I would be different than I am. 2. The second data point is that—given that every state seems to have a predecessor that could have lead to multiple futures—the beginning of the universe was the big bang (for the sake of argument), and its future could have been almost any universe from then on, especially ones that do not have humans in them.

The probability of us existing given the first data point is 1, and the probability of us existing given the second data point is almost 0. This is an example of two-dimensional semantics. The first point rests on a particular model of (evident) time/causality (McTaggart's A-series), while second point rests on a different model of time/causality (McTaggart's B-series). I've written about these two different but valid notions of time elsewhere.

### 2. The Fine-Tuning Argument

It's often argued that if the strong force (for example) were  $10^{-13}$  (or whatever) different in strength than it is now, the universe could not exist as it does and there wouldn't be life in the universe.

The problem with this argument is that if the strong force were merely (for example)  $10^{-16}$  different in strength than it is now, there would be 1000 possible universes more similar to own universe than the universe where the strong force is different by  $10^{-13}$ . If the strong force were merely  $10^{-25}$  different than it is now there would be a billion universes that are closer to our own, and if the exponent were infinite there would be an infinite number of universes closer to our own. Obviously some of these would support life exactly like our own.

Another problem with some claims is that 'life' can be construed so broadly that a different universe could often support it—even if the physics were radically different than it is in our universe.

That's it.