**Biases and Selection Effects in Relation to Cosmological Fine-Tuning**

Our best physics seems to suggest that the law of physics and the initial conditions of our universe are fine-tuned for the possibility of life (Lewis & Barnes 2016). That is to say, for life to be physically possible, certain parameters in basic physics – for example, the strength of gravity, or the mass of the electron – had to have values falling in a certain range, and that range is an incredibly narrow slice of the values those parameters might have had. Call this evidence ‘fine-tuning.’

Given that universes with life have much greater value than universes without life, fine-tuning would seem to be good evidence for the following hypothesis.

*Value-Selection* – The values of the finely tuned parameters were selected in order to maximise the possibility of value in the universe.

On the face of it, the claim that fine-tuning supports Value-Selection is justified via fairly straightforward Bayesian reasoning (Collins 2009):

* P1: Fine-tuning is much expected on Value-Selection than it is on the negation of Value-Selection.
* The Likelihood Principle – Evidence E supports hypothesis H1 more than it supports hypothesis H2 iff Pr (E|H1) > Pr(E|H2)
* Conclusion: Fine-tuning supports Value-Selection.

There is clearly a selection effect present here: as living creatures, we could not have observed a universe with parameter-values inconsistent with the possibility of life. Many have argued that the presence of this selection effect undermines the inference to Value-Selection, either because it undermines P1 (Sober 2003), or because it ensures that the fine-tuning supports the multiverse hypothesis: the hypothesis that there are very many universes which, between them, exemplify a wide-range of values of the parameters in question (Bradley 2009).

I will argue that, whilst this selection effect is obviously real, there is no good reason to think it could have either of the above impacts on the evidential implications of fine-tuning, and that reflection on analogies would suggest that it does not. I further suggest that the fact that the inference from fine-tuning to Value-Selection is not more widely made is explicable in terms of two cultural biases:

* A cultural bias against teleology, resulting from a long period between 1859 and the mid 1970 in which there was no empirical evidence for teleology.
* A cultural bias in favour of interpreting Value-Selection in terms of traditional theism, a hypothesis which doesn’t fit well with other facts about our universe, e.g., unnecessary suffering.

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