

Fine-tuning, weird sorts of atheism and evidential favouring

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Abstract

This paper defends a novel sceptical response to the fine-tuning argument for the existence of God (FTA). According to this response, even if FTA can establish, what I call, the *confirmation proposition*: ‘fine-tuning confirms the God hypothesis’, there is no reason to think that a strengthening of FTA can establish the *evidence-favouring proposition*: ‘fine-tuning favours the God hypothesis over its competitors’. My argument is that, any criteria for the explanation of fine-tuning that permit us to take the God hypothesis seriously ought to make us sceptical that fine-tuning favours the God hypothesis over its competitors. As taking the God hypothesis seriously requires us to give a fair hearing to all sorts of non-theistic explanations, including the so-called weird sorts of atheism.

1 | INTRODUCTION

According to contemporary physics, stable structures that we find in the universe (e.g. galaxies, stars, planets, living organisms, etc.) are enabled by the fact that the fundamental constants of physics have precise numerical values. If the numerical values of these constants were just slightly different, then these structures would not have existed; and hence the life would not have existed.

So, given the laws that most contemporary physicists accept, the existence of stable structures and, specifically, the existence of life, is very improbable. But, life, as we have known for some time, does exist in our universe. What are the odds?

Some philosophers (e.g. Swinburne, 2004; Collins, 2009; Hawthorne & Isaacs, 2018; Barnes, 2019) and most religious apologists think that odds are quite high, on the condition that the God of traditional theism (or a similar supernatural being) exists. The argument is quite straightforward: the

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reason why the physical constants are fine-tuned for life is that God has designed them so. Thus, it is tempting to conclude that the fact that our universe is so fine-tuned speaks in favour of the God or (supernatural) designer hypothesis.

The above reasoning can be articulated in a precise way, with some help from Bayesian confirmation theory. First, we start by characterizing the relevant likelihoods, that is, the conditional probabilities of the following form - $P(\textit{Evidence} | \textit{Hypothesis})$. Let F denote the evidence that our universe is fine-tuned for life and D denote the designer hypothesis (i.e. the existence of God of traditional theism); then, according to the fine-tuning argument, the following inequality comes out as true:

$$(1) P(F|D) > P(F|\neg D)$$

Now, there is a theorem of probability calculus that connects the likelihoods of the form (1) to prior and conditional probabilities. The theorem can be stated as follows.

Theorem: For all x and y ,¹ $P(y|x) > P(y|\neg x)$ iff $P(x|y) > P(x)$.

Putting (1) and Theorem together gives us the following, modest version of the fine-tuning argument for the designer hypothesis:

Fine-Tuning Argument (FTA):

P1. $P(F|D) > P(F|\neg D)$.

P2. Theorem.

Therefore:

C1. $P(D|F) > P(D)$.²

FTA is a valid argument. Theorem is a biconditional. While P1 is an instance of the antecedent of the biconditional. Hence, C1 deductively follows from P1 and P2.

Such an argument has provoked several different criticisms.³ Some (McMullin, 1993; Sober, 2005) criticize the argument by appealing to the so-called ‘anthropic’ reasoning. Others (Leslie, 1989; Smolin, 1997) think that at least some version the multiverse hypothesis renders the argument unsound. An altogether different response is that fine-tuning provides *no additional evidence* for the existence of God, over and above the evidence that life exists in our universe (Weisberg, 2010). All these criticisms have been called into question (White, 2000, 2011; Bradley, 2012; Weisberg, 2005; Hawthorne & Isaacs, 2018; Barnes, 2019).

In this paper, I propose a novel sceptical response to FTA. According to this response, even if we grant that FTA establishes, what I call, the confirmation proposition: ‘fine-tuning, F , confirms the God hypothesis, D ,’ there is no reason to think that a strengthening of the argument can establish the evidence-favouring proposition: ‘ F favours D over its competitors’. Of course, the criticism here is not that FTA cannot establish that D is likely or probable. The content of my objection is entirely different: notwithstanding the probability of D given F , we have no reason to think that F lands support to D over its competitors.

Shortly, my argument is as follows: if we consider the God hypothesis, D , as a legitimate explanation of the fine-tuning data, F , then we should also give a fair hearing to all sorts of atheistic

¹If not otherwise noted, I assume that, for all x , $0 < P(X) < 1$.

²This likelihoodist formulation of the fine-tuning argument is used and discussed by Sober (2005) and Weisberg (2010), among others. A full-blown Bayesian argument is considered in the next section.

³For a more detailed survey of popular objections see Barnes (2019).

hypotheses, including some non-orthodox or weird alternatives to D .⁴ This is so, because, if D is considered to be among the legitimate explanations of F , then our standards for legitimate explanation are quite undemanding, as the God hypothesis plays no role in contemporary cosmology. Hence, by including D into the class of all relevant competing hypotheses, we are setting a low bar for entry into this class. And if we allow all sorts of atheistic hypotheses to compete with D , there is no reason to think that F favours D (even slightly) over its alternatives. In a premise-conclusion form, the argument can be stated as follows:

P1*. If criteria for the explanation of fine-tuning permit us to take the God hypothesis seriously, then we should also take all sorts of non-theistic explanations seriously, including the so-called weird sorts of atheism.

P2*. If we take the God hypothesis seriously and if we want to establish the evidence-favouring proposition, then we need to show that for all sorts of non-theistic hypotheses x , F favours D over x (relative to some plausible measure of favouring).

P3*. There are no good reasons to think that no non-theistic hypothesis is such that F favours it at least as strongly as F favours D .

Therefore:

C1*. Criteria for the explanation of fine-tuning that permit us to take the God hypothesis seriously ought to make us sceptical that the fine-tuning favours the God hypothesis over its competitors.

The paper is structured as follows. The next section provides a relatively non-technical but detailed statement of my criticism. As my criticism appeals to the technical notion of evidential favouring, section 3 recasts my argument in terms of formal measures of evidential favouring. Readers who are not interested in the formal measures of favouring would understand the paper's core argument without reading section 3. For more technically minded readers, section 3 considers both Bayesian and non-Bayesian measures of evidential support. On the non-Bayesian measure, the evidence-favouring proposition requires an extremely unlikely claim about the relevant likelihoods; and on the Bayesian measure—rather specific and contentious assignments of prior probabilities.

I conclude that there are no good reasons for thinking that fine-tuning favours the God hypothesis.

2 | THE SCEPTICAL RESPONSE TO FTA

This section argues, in a relatively non-technical manner, that we have no reason to think that fine-tuning favours the God hypothesis.

⁴The phrase, 'weird sorts of atheism' is from Hawthorne and Isaacs (2018). While they don't provide a definition of the term, they give an example: for them, atheism with non-agential teleological causation, for instance, Leslie's (1989; 2018) 'creative ethical requiredness,' is such a weird or fantastic atheistic worldview. I consider Leslie's and other's weird atheistic proposals in the next section. While the intuitive idea behind the notion should be clear, here is a quick, working definition: an atheistic hypothesis is weird with respect to the fine-tuning debate iff it is not well-attuned with current physics or goes beyond what contemporary physics can reasonable accommodate or justify (like abstract entities with causal powers).

To argue this, first I shall motivate the following simple logical point: evidence FTA might confirm a hypothesis, x , in a sense that $P(y|x) > P(y|\neg x)$, but this would not entail that the evidence, y , favours x over its competitors.⁵

2.1 | The distinction between favouring and confirmation

I illustrate the distinction between favouring and confirmation with a simple but representative example. Consider the following probability distribution over three competitor hypotheses and piece of evidence, E .

Example:

Priors	Likelihoods
$P(H_1) = 1/3$	$P(E H_1) = 1$
$P(H_2) = 1/3$	$P(E H_2) = 0.6$
$P(H_3) = 1/3$	$P(E H_3) = 0$

In words, one can interpret this distribution in terms of a diagnostic test: E denotes the symptoms of a patient. H_i denotes the hypothesis that the patient has the disease i . As we see, the symptoms are entailed on H_1 , are somewhat plausible on H_2 and are impossible on H_3 .

By Bayes' theorem, we have $P(H_2|E) = 0.375$. Hence, E confirms H_2 in a sense that $P(H_2|E) > P(H_2)$. However, even though E confirms H_2 , it is implausible to claim that E favours H_2 over its competitors. This is so because there is a hypothesis, H_1 , and E seems to support H_1 much better than H_2 . After all, both the relevant likelihoods and boost in confirmation are higher for H_1 than for H_2 .

This is an intuitive analysis of *Example*. A more rigorous analysis requires the explicit definition of the relation of favouring with the corresponding measures of evidential support. The necessary formal and conceptual apparatus will be introduced in section 3.

At this point, however, the analysis still brings out the important point that confirmation does not entail favouring. Let's call this point the *Confirmation-Favouring Distinction* (*Distinction*, for short). The distinction immediately implies that FTA (i.e. argument P1-C1) does not establish, what I have called, the *evidence-favouring proposition*—the proposition that the fine-tuning of our universe favours the designer hypothesis over its competitor hypotheses. Hence, all too frequently repeated claim in the fine-tuning literature that 'an observation supports H when it is likelier given H than it is given $\neg H$ ' should be taken with a grain of salt. If one interprets 'supports' as 'confirms', then the claim is trivial as it is equivalent to a theorem of probability calculus. However, if one interprets 'supports' as 'favours', then the claim may well be false (as illustrated by the above example).

Now, one can derive both the *confirmation* and *evidence-favouring* propositions by adding a premise to the argument, FTA. This premise can be explained even before introducing a precise measure of favouring. First, we need some new definitions.

Let Hyp be some partition of $\neg D$, that is, the set of all relevant mutually exclusive and exhaustive non-theistic hypotheses;⁶ and let f be some plausible measure of support, such that e favours x over y iff $f(x, e) > f(y, e)$. Given these new definitions, the modified argument can be stated as follows:

⁵For a detailed account of and elaboration on the confirmation-favouring distinction see Bandyopadhyay et al., (2016).

⁶I'll explain how we can think about the set of 'all relevant non-theistic alternatives to God' in the next section.

Modified Fine-Tuning Argument:

P1. $P(F|D) > P(F|\neg D)$.

P2. Theorem.

P3. There is no x in *Hyp*, such that $f(D, F) \leq f(x, F)$.

Therefore:

C1. $P(D|F) > P(D)$.

C2. F favours D .

This paper criticizes premise P3. Note that to establish the evidence-favouring proposition, one needs to argue that for *all* relevant non-theistic hypotheses x , F favours D over x (relative to some measure of favouring). This is rather straightforward and should be obvious from the analysis of example. If there is some hypothesis, x , in *Hyp*, such that $f(x, F) \geq f(D, F)$, then it is at best misleading to assert that F favours D .⁷

Before I evaluate this modified argument, I want to note that it is not equivalent to a more standard Bayesian argument for God, which can be stated as:

P1**. $P(F|\neg D) \approx 0$.

P2**. $P(F|D) >> 0$.

P3**. $P(D) >> P(F|\neg D)$.

Therefore:

C1**. $P(D|F) >> 0$.

My criticism can be easily applied to the standard Bayesian version of FTA. However, considering this formulation of FTA would shift the focus from the issue of evidential favouring to the issue of confirmation and posterior probability. But, as I have already explained, the topic of the paper is evidential favouring and not high conditional probability.

In any case, if a proponent of FTA grants me that P3 is implausible, I do not see how she can be rational in accepting the Bayesian argument for God; unless, of course, she makes an unjustified assumption that the prior probability of God is already quite high or much higher than the favoured atheistic hypothesis. I consider this to be a desperate argumentative strategy. Justifying one's *controversial* beliefs by appealing to prior probabilities is an implicit recognition of not having an inter-subjectively valid reason for one's beliefs.

Now that the target of my criticism is identified, I proceed to explain my argument.

2.2 | Evaluating the modified FTA

Let's evaluate the target premise, P3, in the modified argument. The supporter of modified FTA needs to establish a universal claim, where the universal quantification ranges over all relevant non-theistic hypotheses. But the required universal claim is rather strong and unobvious; and to my knowledge, nobody has taken up the challenge to argue for it. All that is usually argued is that fine-tuning favours D better than some hypothesis, e.g., a version of the multiverse hypothesis, (see Barnes, 2019; Hacking, 1987; White, 2000). But even if the following controversial inequality is true:

$$(2) P(F|D) > P(F|\text{Multiverse hypothesis})$$

⁷Here is another way to drive the point home: a fair six-sided die has been rolled. You are told that the outcome is some even number. Does this evidence favour that the outcome is number 2? Not exactly, because the evidence is just as compatible with the outcome of 4 as with the outcome of 2. Hence, even if the evidence favours outcome 2 over outcome 1, it does not favour outcome 2 over outcome 4. Hence it is wrong to unqualifiedly assert that the evidence favours outcome 2.

from (2) one cannot conclude, without further argument, that F favours D over any relevant non-theistic hypothesis. The inference from (2) to the confirmation proposition is much more reliable than the inference from (2) to the evidence-favouring proposition. Unlike the confirmation proposition, the evidence-favouring proposition relies on the universal claim about all non-theistic hypotheses; and even if (2) is true, the universal claim in question is still rather strong and unobvious.

Of course, many supporters of FTA recognize that by rejecting the multiverse hypothesis as an explanation for fine-tuning, one is not automatically rejecting all non-theistic explanations. For instance, Hawthorne and Isaacs (2018: 160), who defended FTA, write that:

There are lots of weird sorts of atheism that make fine-tuning more likely. We don't expect that ... [such an atheism] will appeal to most atheists, but it is an option.

Surprisingly, Hawthorne and Isaacs provide no argument why a rational individual would judge $P(F|D)$ as strictly greater than $P(F|x)$, for all non-theistic hypothesis x , where the credibility of x is not significantly less than the credibility of D .⁸ And as I show next, their casual dismissal of alternatives to theism—including their explicit dismissal of weird sorts of atheism—is not only unargued but unreasonable.

Certainly, as most philosophers lack the appropriate training and expertise in cosmology, it is not their job to articulate mathematically rigorous, productive and predictive theories about fine-tuning. But, if our standards of explanation allow the God hypothesis to be taken seriously, then it is not for lack of expertise that a supporter of FTA fails to consider more atheistic alternatives (to the God hypothesis), but for what I consider lack of imagination. After all, fine-tuning debate, in essence, is a debate in contemporary physics. By introducing D in the class of competitor hypotheses, one is setting a low bar for entry into that class. The designer hypothesis plays no role in contemporary physics. D is somehow arbitrarily transplanted into modern cosmology to account for the puzzling data. So, the prior credibility requirement of an explanatory hypothesis is quite undemanding. And given that one wishes to defend the relevant evidence-favouring proposition, good reasons need to be given that no broadly atheistic hypothesis, even an unorthodox or fantastic atheistic hypothesis, can account for F as well as D . One should not forget that the designer hypothesis is also weird and fantastic in the minds of many scientists and most philosophers. Until such an argument is given, an individual who is sceptical about connecting the theological questions with a relatively new and controversial topic of fine-tuning is well entitled to her scepticism.

To argue my point further, here I list three radically different alternatives to the God hypothesis. These can be characterized as weird types of alternatives to theism; as each of these alternatives are either not well-attuned with current physics or go beyond what contemporary physics can reasonable accommodate or justify. I list these hypotheses just to give the reader a taste for how diverse the space of all non-theistic views is:

- Mizrahi's (2017) simulation hypothesis, according to which we live in a computer simulation designed by non-supernatural agents, similar to us. Where did these agents come from? They might live in the universe where the laws of nature do not require the fine-tuning of cosmological constants.

⁸In section 3, I show that even if the initial credibility (i.e. prior probability) of the designer hypothesis is four times greater than the credibility of a non-theistic hypothesis, a plausible measure of favouring might still render the judgment that F favours the non-theistic hypothesis over D . The reasoning can be extended even further: a non-theistic hypothesis can be 10 or 100 times less credible than the designer hypothesis, but F can still favour it, under certain likelihood distributions.

- The hypothesis of cosmological natural selection, a version of which has been proposed by the physicist Lee Smolin (2013). As he (ibid:123) argued: ‘physics must abandon the idea that laws are timeless and eternal and embrace instead the idea that they evolve in real-time’. While the current views in fundamental physics do not make Smolin's proposal plausible, this is still consistent with the claim that the fine-tuning favours Smolin's hypothesis. And even if one wants to press on the issue of prior plausibility: in the modern scientific environment, the hypothesis of cosmological natural selection, arguably, should have a larger prior than the designer hypothesis. Beside other comparative virtues over the God hypothesis, ‘cosmological natural selection makes several genuine predictions, which are falsifiable by currently doable observations’. (ibid: 126).
- John Leslie's Neoplatonism (1989; 2018), according to which there is an abstract entity—‘creative ethical requiredness’—that has causal powers. Given that it is good that life exists in the universe, there would be the cause for the existence of life. As God of traditional theism is a person, Leslie's creative ethical requiredness—which is an abstract entity—cannot be equated with God. Hence, Neoplatonism is a genuinely non-theistic alternative to the God hypothesis.

Of course, I do not wish to suggest that some form of weird atheism is the only option for atheists. But it is an option. As atheists do not believe that there is such a person as God, they should be relatively content with a coherent worldview that does not include such a person in it. Other things being equal, a universe with God is weirder for atheists than the universe without it.

This summarizes my response to FTA. The next section articulates the formal details of my argument. The first step towards the goal is to formalize the notion of favouring and introduce various measures of evidential support.

3 | THE FORMAL DETAILS OF THE SCEPTICAL RESPONSE

There are various competing explications of evidential favouring—both Bayesian and non-Bayesian.⁹ These explications can be characterized with respect to the following *bridge principle* that relates the relations of favouring and evidential support:

Bridge: E favours H_1 over H_2 iff E supports H_1 more strongly than E supports H_2 .

Bridge enables us to define the relation of favouring in terms of the relation of evidential support (Fitelson, 2007, 2011). *Bridge* is quite useful for conceptualizing and comparing the various competing accounts of favouring, as there are dozen or so numerical measures of evidential support that can be used to provide an explicit definition of the relation of favouring.

Here, I shall consider three popular measures of evidential support:¹⁰

- *Ratio*: $R(H, E) = {}_{df}P(E|H) / P(E)$ (Keynes, 1921; Milne, 1996)
- *Likelihood-Ratio*: $L(H, E) = {}_{df}P(E|H) / P(E|\neg H)$ (Good, 1950; Fitelson 2006)
- *Relational likelihood-Ratio*: $RL(H_1, H_2, E) = {}_{df}P(E|H_1) / P(E|H_2)$ (Royall, 1997; Sober, 2008; Bandyopadhyay et al., 2016)

⁹See Fitelson (1999) for the discussion of the plurality of measures of confirmation/favouring.

¹⁰More on choosing these measures shortly.

The first two measures, R and L , are Bayesian as they give *reductive, non-relational* measures of evidential support. These definitions are reductive because the degree of evidential support is defined for *each individual hypothesis*, without appealing to its competitor hypothesis.¹¹ By contrast, measure RL —which is the *likelihoodist* measure of evidential support—is inherently *relational*; it requires two competitor hypotheses to define the degree of evidential support. Overall, the paper will remain non-committal as to which measure is superior.

These measures can be used to give explicit definitions of evidential favouring, with respect to *Bridge*. Because we have three different measures of evidential support, we get three corresponding theories of favouring:

- Favoring $_R$: E favours H_1 over H_2 iff $R(H_1, E) > R(H_2, E)$.
- Favoring $_L$: E favours H_1 over H_2 iff $L(H_1, E) > L(H_2, E)$.
- Favoring $_{RL}$: E favours H_1 over H_2 iff $RL(H_1, H_2, E) > RL(H_2, H_1, E)$.

Interestingly, non-relational measure R and relational measure RL are *logically equivalent* with respect to *Bridge*. This is so because according to the favouring theories R and RL , E favours H_1 over H_2 iff $P(E|H_1) > P(E|H_2)$.¹² Hence, the Bayesian, reductive measure of evidential support is logically equivalent to the likelihoodist measure, RL , relative to the bridge principle, *Bridge*. This logical equivalence enables us to simplify the analysis a bit, by considering measure R and L exclusively: the analysis of the Fine-tuning Argument, FTA, in terms of the Bayesian measure, R , would always agree with a non-Baysian, likelihoodist analysis.

As I have noted, there are several other measures of evidential support, besides the ones that I have listed. And not everybody endorses measures R or L . These measures, however, outrun their competitors in terms of their appeal and popularity. Furthermore, R and L are representative measures, in a sense that they divide the space of all possible measures into two broad categories—into the prior-sensitive measures and prior-insensitive measures of evidential support. Measure R renders the favouring relation to be *insensitive* to prior probabilities; hence, E would favour H_1 on any prior probability distribution over competitor hypotheses, according to *Favoring $_R$* . This is an attractive feature of measures like R and RL , because, in many settings, likelihoods can be set in an objective, uncontentious manner (see Royall, 1997; Bandyopadhyay et al., 2016), while the prior distributions—cannot.

By contrast, measure L is not prior-insensitive. Whether, E favours H_1 over H_2 would be influenced both by the likelihoods and prior probability distribution over the competitor hypotheses. This is so because the likelihoods of the following form $P(E|\neg H)$ require the specification of both likelihoods and prior probabilities.

In summary: the two measures, R and L , are popular and representative measures of evidential support, where R is a prior-insensitive measure and L - prior-sensitive measure.

Now that we have the precise explications of favouring, we can use them in the analysis of the fine-tuning argument.

Let's first assume that we work with prior-insensitive measure R . With such a prior-insensitive measure, the premise that we need to derive the evidence-favouring proposition is as follows:

¹¹While on measure L , the two likelihoods are compared, $P(E|H)$ and $P(E|\neg H)$, the measure still involves only one hypothesis, H . On the first likelihood, H is assumed to be true; and on the other likelihood, H is assumed to be false.

¹²To see the logical equivalence, note that:

$$\frac{P(E|H_1)}{P(E)} > \frac{P(E|H_2)}{P(E)} \text{ iff } P(E|H_1) > P(E|H_2); \text{ and}$$

$$\frac{P(E|H_1)}{P(E|H_2)} > \frac{P(E|H_2)}{P(E|H_1)} \text{ iff } P(E|H_1) > P(E|H_2).$$

Supplementary Premise (SP_R): Let Hyp be some partition of $\neg D$, that is, a set of mutually exclusive and exhaustive non-theistic hypotheses; then:

For all hypotheses x , if x is in Hyp , then $P(F|D) > P(F|x)$.

In words, SP_R is equivalent to a universal claim that there is no atheistic hypothesis that explains F at least as well as D explains F . If we work with measure R , the only way in which F would favour D over its competitor hypotheses is when the likelihood, $P(F|D)$, is higher than the likelihood of $P(F|x)$, for all x is in Hyp .

But SP_R is an extremely strong and unobvious claim. And as I have already explained in section 2, there are no reasons to accept such a universal claim.

But what about the prior-sensitive measures of evidential support? For instance, if we work with measure L , then SP_R is unnecessary to establish the evidence-favouring proposition. This is so, because even if SP_R is false, then on some prior probability distributions, F would still favour D over its competitors.

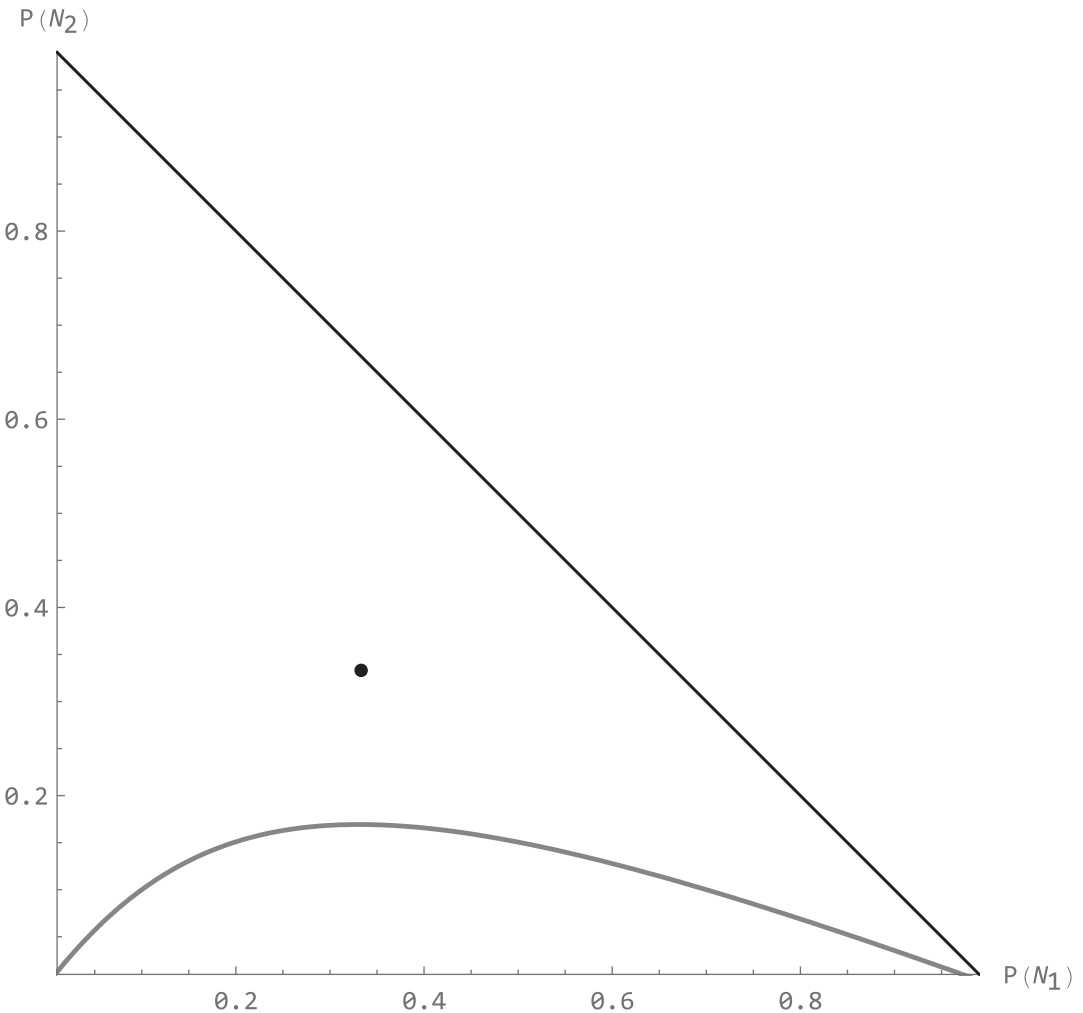


FIGURE 1 Dependence on priors of measure L.

Yet, establishing the evidence-favouring proposition by this means is also unpromising. The problem here is that, if SP_R is false, then the evidence-favouring proposition is derivable only under a restricted and contentious prior probability distributions.

To illustrate this, consider a simple example where there are only three competitor hypotheses: the designer hypothesis, D , and two atheistic hypotheses N_1 and N_2 . Now, assume the following ordering of the likelihood distribution:

$$P(F|N_1) < P(F|D) \leq P(F|N_2)$$

For the sake of simplicity, let's assign precise numerical values to the likelihoods:

$$P(F|N_1) = 0; P(F|D) = 0.75; P(F|N_2) = 1$$

Now, assuming the above values for the likelihoods, on *most* prior probability distributions, $L(N_2, F) > L(D, F)$. The best, informal way to visualize this is through the following figure (see Figure 1).

The figure is easy to interpret: only the prior distributions below the curve render the judgement that $L(D, F) > L(N_2, F)$. On all other distributions, including on the equiprobable distribution (represented by the large black dot), F would favour N_2 over D , according to L . To take an illustrative example, even if $P(N_2) = 0.2$, F would still favour N_2 . So D can be four times more likely than N_2 , but F would still favour N_2 over D .

Therefore, while the evidence-favouring proposition can be derived from measure L without appealing to SP_R , such a strategy is also very unpromising, as it must rely on a hard-to-motivate and restricted set of prior distributions.

In conclusion, then: on both measures R and L , there seems to be no reasonable way to strengthen FTA to establish both the confirmation and evidence-favouring propositions.

4 | CONCLUSION

Recently, some philosophers have provided renewed defences of the cosmological fine-tuning argument for God's existence (FTA). The ethos of these defences is well-summarized by Hawthorne and Isaacs (2018: 136), by claiming that FTA is 'as legitimate an argument as one comes across in philosophy'.

This paper has called the above claim into question. As I have argued, there is no reason to think that FTA can establish even a modest claim about evidential favouring—the claim that the fine-tuning data favours (even slightly) the designer hypothesis over its alternatives.

As we have seen, some defenders of FTA have recognized that there are alternatives to theism that make fine-tuning at least as likely as the God hypothesis. Besides the failure to give a fair hearing to these non-theistic views, the defenders of FTA have not surveyed the vast land of 'weird' atheism where many pro-fine-tuning alternatives can be found. In my view, such negligence is largely due to shifting standards of evaluation. When atheistic accounts of fine-tuning are considered, the defenders of FTA evaluate them against high standards—such as, being attuned with current physics, being non-fantastic, etc.; but these high standards are manifestly absent when the God hypothesis is considered. Such negligence, I think, is unjustified, as atheists can also reject the God hypothesis from the outset as a remnant of the epistemic stone age and too fantastic to be worth any detailed consideration. So, if the proponents of FTA want to make a respectable case for God, they cannot outright reject the fantastic and weird atheistic hypotheses.

Hopefully, future research would show what case can be made for FTA after the vast land of atheism is duly explored. I am sceptical that this investigation would improve the epistemic status of theism. But this is still an option.

ACKNOWLEDGMENT

I am very grateful to Nina Abesadze, Prasanta Bandyopadhyay, Corine Besson, and Richard Lohse for helpful comments and discussion.

Open access funding enabled and organized by ProjektDEAL.

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How to cite this article: Tokhadze T. Fine-tuning, weird sorts of atheism and evidential favouring. *Analytic Philos.* 2021;00:1–12. <https://doi.org/10.1111/phib.12232>