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Divine psychology and cosmic fine-tuning

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Abstract

After briefly outlining the fine-tuning argument (FTA), I explain how it relies crucially on the claim that it is not improbable that God would design a fine-tuned universe. Against this premise stands the divine psychology objection: the contention that the probability that God would design a fine-tuned universe is inscrutable. I explore three strategies for meeting this objection: (i) denying that the FTA requires any claims about divine psychology in the first place, (ii) defining the motivation and intention to design a fine-tuned universe into the theistic hypothesis, and (iii) providing arguments that the relevant probability is not terribly low. While I reject the first two, I conclude, in line with the third, that considerations about life's objective value establish that it is not absurdly improbable that God would design a fine-tuned universe, whether one regards the FTA as an inference merely to a cosmic designer, or to theism proper. Accordingly, the divine psychology objection fails.

Keywords: fine-tuning argument; design inferences; inscrutability; natural theology; scepticism

Introduction

The fine-tuning argument (FTA) is the two-part claim that certain features of the laws of physics are fine-tuned for the evolution of life, and that this fact is significant evidence for God's existence. Key features that proponents of the argument frequently highlight include (i) the physical constants embedded in the laws of nature, numbers dictating force strengths or particle masses; (ii) the initial conditions of the universe like the ratio of matter to antimatter or the universe's initial low entropy, quantities that are simply 'given' in the Big Bang; and even (iii) the mathematical form of the laws themselves (Collins 2009). These features are 'fine-tuned' insofar as their life-permitting magnitudes or values are a tiny proportion of the range of total possible values they could have taken, much as a radio dial is fine-tuned in that only a few precise notches will result in a specific station, with the rest yielding random static. If we think about the total parameter space of possible magnitudes these constants and quantities could have taken, we will naturally wonder why, seemingly against all odds, they took on values in the dazzlingly narrow, life-permitting range. Many philosophers, reflecting on these facts, see a convincing argument for theism (Collins 2003, 2009; Craig 2003; Swinburne 2003; Mawson 2011; Koperski 2015; Rota 2016, 2021; Hawthorne & Isaacs 2017, 2018; Waller 2019; Loke 2022).

Now, what does any of this have to do with divine psychology? To gain traction on that question, consider Barnes's (2019) recent formulation of the FTA:

1. For any two theories T_1 and T_2, in the context of background information B, if it is true of evidence E that $P(E|T_1 \& B) \gg P(E|T_2 \& B)$, then E strongly supports T_1 over T_2.
2. The likelihood that a life-permitting universe exists on naturalism is vanishingly small.
3. The likelihood that a life-permitting universe exists on theism is not vanishingly small.
4. Thus, the existence of a life-permitting universe strongly supports theism over naturalism.

With respect to (2), Barnes (2019) estimates that when all instances of fine-tuning are considered together, the probability of a fine-tuned universe given naturalism is 1 part in 10^{136}. Now, perhaps Barnes is wrong about this, but that is not where my concern lies. I grant that probability ascription for the sake of argument and instead propose to concentrate on premise (3). If 'F' is the existence of a fine-tuned universe, 'G' is God's existence, 'N' is naturalism, and 'B' is the background information, then premises (2) and (3) entail the following:

PROBABLE $P(F|G\&B) \gg P(F|N\&B)$.
                    More simply: The probability of a fine-tuned universe given God's existence is much, much greater than 1 part in 10^{136}.

Several philosophers, however, contend that there is no reason to accept PROBABLE. They argue that we have no way of knowing that it is *not* absurdly unlikely that God, if He exists, would create a fine-tuned universe. Another way of phrasing the point is that we lack crucial knowledge about God's *psychology*, about what God would or would not do prior to designing the universe. For that reason, we ought to deny PROBABLE and instead affirm:

INSCRUTABLE   The probability of a fine-tuned universe given God's existence is inscrutable.

I will refer to the argument for INSCRUTABLE as the 'divine psychology objection' to the FTA. With Manson (2020), I call an advocate of this objection a 'fine-tuning sceptic', whom I contrast with the proponent of the FTA, 'the fine-tuning advocate'. If the sceptics are right, then the FTA fails, even if one grants every other premise. While fine-tuning advocates have addressed the psychology objection in various publications, nearly all responses range from a few paragraphs to a page or two. A more comprehensive, systematic assessment is in order, and that is what I offer here. While I break some new ground below, my primary aim is to clarify who has the burden of proof in the dialectic between sceptic and advocate, and to bring rigour and depth to previously defended arguments for PROBABLE. I have often found myself wrestling with the concerns that give sceptics pause, so in what follows, I hope it is clear I take those concerns seriously.

First, I present and critique two arguments for INSCRUTABLE, concluding that even though they fail, there is a light-weight form of the psychology objection that remains. Second, I explore the first strategy for addressing the revised objection: denying that one needs to defend PROBABLE in the first place. Third, I state and quickly reject a second: modifying the theistic hypothesis to explicitly mention the motives of the hypothetical

designer. Fourth, I examine the most promising line of response: providing warrant for PROBABLE. I conclude that reflection on life's objective value supplies precisely that warrant, whether one construes the FTA as an inference merely to a cosmic designer or to theism writ large.

The sceptics, considered

Why might one share the worries behind the divine psychology objection? I distil roughly two arguments fine-tuning sceptics offer at this point.

What are God's preferences?

Oppy (2006, 207) writes that '[g]iven only the hypothesis that there is an intelligent designer of a universe . . . it is not clear to me that there is very much that one can conclude about the kind of universe that the designer is likely to produce'. Narveson (2003, 97) similarly contends that no 'matter what the Universe is like, it could have been created by a super-creator'. When it comes to a hypothetical creator beyond the physical universe 'whose mind is radically unlike any mind that we are familiar with, there is no reason to assume that she/he would favour the existence of humans over their nonexistence' (Friederich 2021, 46). Perhaps such a recondite mind prefers universes containing a single, solitary iron atom. Or two. Or three. Or fourteen argon atoms scattered across billions of light years of otherwise empty space. Or a universe bursting with intelligent life. Or an empty universe ever expanding with no further aim or point. In general, design inferences depend crucially on our independent knowledge of what the designer in question would be likely to do, an epistemic access we presumably lack when it comes to a cosmic intelligence. Without that access, then no matter how pointless a possible universe might look to *us*, we have no way of ruling any possibility out as unlikely with respect to a cosmic mind's proclivities; perhaps they just like absurd universes. In short, the 'more our hypotheses of intelligent designers depart from the human case, the more in the dark we are as to what the ground rules are for inferring intelligent design' (Sober 2003, 38). When it comes to an intelligence responsible for the fundamental constants of physics, we are completely in the dark.

What are God's options?

In addition to questioning how one could possibly know God's predispositions, Manson (2020, 313–314) points simply to the bewildering number of options that God has available to craft a universe. In the absence of reasons to think that God would prefer one type of universe to another, the probability of His creating a life-permitting cosmos would simply be the number of ways of designing such a universe divided by the total number of options God has available:

$$\Pr(F|G \& B) = \frac{\#\ \text{of ways God can create life} - \text{permitting, fine} - \text{tuned universes}}{\text{Total}\ \#\ \text{of ways God could create a universe}}$$

The problem is that the denominator is huge compared to the numerator. Given that God is omnipotent, He can create physical life, non-physical life, or some fusion of the two. He can miraculously sustain life in a universe whose laws of physics *preclude* the evolution of intelligent life, and He can create realms unimaginable. The selection of realities where physical life evolves in accordance with our laws of nature that require fine-tuning

seems slim indeed compared to all the options God has at His disposal. Indeed, plausibly we have no idea how large the denominator here is, and therefore no idea what final probability to assign.

A reductio ad absurdum

Fine-tuning advocates have advanced a fascinating response to arguments like the above. Hawthorne and Isaacs (2017, 139) protest that such arguments 'would look embarrassingly foolish in the face of particularly awesome theistic evidence', with Barnes (2019, 1241) similarly codifying what he calls the '*Awesome Theistic Argument* (ATA) test': if an objection to the FTA entails that an awesome theistic argument is invalid, then the objection fails the test and ought to be rejected. Consider, then, the following selection of awesome theistic evidence.

> Peering through a microscope and seeing the opening of the Gospel of John inscribed on every molecule.
> The stars rearranging themselves into the English version of the Nicene Creed.
> Consistent – seemingly miraculous – healing of any illness or disease whenever the person in question prays to God for healing.
> Everyone who has ever died rising from the dead and proclaiming God's loving care.

If we were party to any of these events, we would surely be rational in inferring that God exists – or, even more modestly, inferring that God's existence is more likely given this evidence than it would have been without it. 'Ah, but wait', the sceptic replies, 'The probability that God would inscribe such a thing on every molecule in the universe, rearrange the stars, heal the sick, or raise the dead is inscrutable! As such, we cannot make any inferences about the probability of theism given this evidence.' But such a response would indeed look embarrassingly foolish; it fails the ATA test, as Barnes puts it. In this way, Hawthorne, Isaacs, and Barnes show that total scepticism about God's psychology leads to overkill: it proves too much, implying that perfectly reasonable inferences would be unreasonable. Or, as White (2007, 464) puts it, '[i]f we really are clueless as to the likely preferences of an agent capable of creating life, then there is nothing even in principle that such an agent could do to give us any evidence for its existence'. If, however, the consequent is false, then the antecedent must be as well: we are *not* in fact clueless as to God's psychology.

Manson (2020, 307) contends that fine-tuning sceptics can accept the evidential significance of these hypothetical revelations because scepticism about particular claims concerning divine psychology does not automatically extend to all such claims, a point that is certainly fair at a general level. Whether the sceptic can remain consistent in affirming both INSCRUTABLE and the inference involved in awesome theistic evidence, however, will all depend on the *reasons* that motivate INSCRUTABLE. To illustrate: if the relevant claim is that we can know nothing about what God would do because He is so 'other', then this justification for scepticism would apply to any hypothetical evidence for God, no matter how extraordinary or spectacular or, indeed, awesome.

Interestingly, Manson (2020, 306) seems guilty of such a sweeping argument when he writes that '[e]ven if both humans and God count as beings with minds, God's mind is so different from ours that we cannot judge what God would be likely to create, or even whether God would be likely to create at all'. I take this to be basically equivalent to the argument from God's preferences presented above. Turn, then, to the hypothetical observation of the stars spelling out the Nicene Creed. The 'awesome evidence' sceptic

will say something like the following: God's mind is so different from ours, so different that we cannot in fact judge what He would be likely to do concerning self-revelation in the stars; such a probability is, alas, inscrutable for us. The awesome evidence sceptic and the fine-tuning sceptic seem to stand or fall together.

The same conclusion holds for considerations about the range of God's creative options. Consider the following parody. If 'G' is God's existence, 'A' is God's wanting to proclaim His existence via rearranging the stars, and 'B' is the background information, then the following obtains:

$$\Pr(A|B) = \Pr(G|B) \times \Pr(A|G\&B) + \Pr(\sim G|B) \times \Pr(A|\sim G\&B)$$

What, then, is $\Pr(A|G\&B)$?

$$\Pr(A|G\&B) = \frac{\text{The ways God could reveal Himself in the stars}}{\text{Total \# of ways God could reveal Himself}}$$

Considering God's omnipotence, the denominator will obviously be larger than the numerator. But the question remains: by how much? It seems we would have to admit that we do not know. As such, the relevant probability is inscrutable. I agree with Barnes (2019, 1251), then, that if 'the starry Nicene sceptic would be irrational to block that argument by appealing to inscrutability, then the fine-tuning sceptic must also be irrational'.

It would be easy, however, to overstate the significance of this *reductio*. As far as I can tell, awesome theistic evidence demonstrates only that the sceptic's arguments for INSCRUTABLE fail: neither our lack of data concerning God's preferences nor our ignorance of the range of options available to God prevent us from making reasonable conjectures about divine psychology in *certain* contexts. The *reductio* does not, however, demonstrate that PROBABLE is true. Now, one might think that if one has no reason to accept INSCRUTABLE, one must, on pain of irrationality, accept PROBABLE. But that is not correct, for there is a third possibility:

IMPROBABLE   The probability of a fine-tuned universe given God's existence *is* terribly small.

To rule IMPROBABLE out, one must appeal to some positive reason to ascribe a non-negligible probability to fine-tuning conditional on theism.

We can distinguish between claiming that (1) we do not know the likelihood of fine-tuning given theism and (2) we cannot know that likelihood. Though talk about 'inscrutability' naturally suggests the second claim, it may well be that Manson, Oppy, Sober, Narveson, and others are merely making the point that fine-tuning advocates have presented no good argument for PROBABLE, leaving us with no reason to ascribe one likelihood rather than another to fine-tuning conditional on theism. Any argument the sceptics might offer for (2) is dialectically extra. On this interpretation, the fine-tuning sceptics are claiming that the likelihood involved at the heart of the FTA is 'unknown' rather than 'inscrutable', strictly speaking. When I use 'inscrutable' in what follows, I mean it in the light-weight sense of (1). I will now turn to three strategies for addressing this revised objection.

Strategy #1: Live with inscrutability

A natural place to begin is to ask why a successful FTA requires defence of PROBABLE in the first place. Consider three arguments under this umbrella.

We do not need PROBABLE

One might think that the probability of fine-tuning occurring randomly is *so* low that one ought to appeal to design on that basis alone, independently of any considerations about divine psychology. But this reasoning, however initially plausible, is fallacious: mere improbability is not enough to rule out chance. If the likelihood of fine-tuning given God's existence were completely unknown, then it would not matter how improbable fine-tuning was given dumb luck – one in a million, one in a trillion, one in $10^{10^{123}}$ – in *any* case, one would be unable to draw conclusions concerning God's existence. Sober (2003, 32) captures the point well when he writes that the 'fact that an observation would be very improbable if it arose by chance is not enough to refute the chance hypothesis. One must show that the design hypothesis confers on the observation a higher probability', with Manson (2020, 303) similarly observing that one 'must give reasons for thinking that the probability that the universe is life-permitting if God exists is not likewise extraordinarily low'.

Rota (2016, 109) provides a charming illustration. Consider two sets of hands in a game of Poker, one dealt to you and the other dealt to the dealer themself. These are your first three hands:

1. {8♦, 5♥, 3♦, ace♥, 7♣}, {4♥, 4♣, king♣, jack♠, 2♠}, and {ace♠, king♣, 3♦, 3♥, 10♦}.

And these are the dealer's first three hands:

2. {♥: 10, jack, queen, king, ace}, {♦: 10, jack, queen, king, ace}, and {♠: 10, jack, queen, king, ace}.

You would, I trust, be quite sceptical of the dealer's integrity, rightly inferring that they selected the second set of Poker hands intentionally rather than randomly (i.e. they cheated). Why would you reason this way? Two facts seem pertinent: (i) the probability of dealing three royal flushes randomly is ridiculously small (1 chance out of 3.5×10^{18}), and (ii) the probability of dealing three royal flushes *if one is cheating* is much higher.

The reason (i) alone is not sufficient to rule out chance is that any series of three hands from a 52-card deck will be equally unlikely, including three royal flushes. But in the first case mentioned above, you would suspect nothing even though this series of hands has an equally low probability of turning up randomly as three royal flushes. The reason for this differential treatment is that, in contrast to a royal flush, you have no plausible hypothesis that makes the series of hands in (1) more likely than any other. But the same is not true of (2): I don't know much about Poker, but I know that royal flushes are excellent hands and therefore a cheater is quite likely to select them over, say, some otherwise random assortment of five cards. As such, no design inference can go through in the first case, while it certainly can (and should!) in the second.

The long and short is that just as detecting cheaters in Poker requires condition (ii), so too does detecting God in the laws of nature require PROBABLE. This insight has an important corollary: there are no features intrinsic to a phenomenon that would allow us to rule out chance independently of considering the merits of design, appeals to so-called 'specified complexity' among several authors notwithstanding (e.g. Craig 2003; Johnson 2021; Loke 2022). A phenomenon or event is said to exhibit specified complexity when the event is both improbable (complex) and conforms to an independently given pattern (specified). So, dealing oneself three royal flushes is both improbable and conforms to the pattern of 'royal flush' set by the rules of poker and is therefore said to exhibit specified complexity (by contrast, the first set of hands, while complex, is not

specified). But the reason that patterns in this case tip us off to design is precisely because we have knowledge about human psychology and therefore a grasp of which hands a cheater would be *likely* to pick, such that if we lacked that background knowledge, specified complexity would do nothing to tilt the scales in favour of design. As such, when evaluating a design hypothesis *vis-à-vis* a natural explanation, 'you must know what *both* hypotheses predict about observables . . . The searchlight therefore must be focused on the design hypothesis itself. What does *it* predict?' (Fitelson et al. 1999, 487).

We can assume PROBABLE

Despite the above, one might want to argue that considering how small the odds are given naturalism, the odds are almost certainly higher given theism. Hawthorne and Isaacs (2018, 152) appear to move in this direction, writing that '1 in 10^{120} is an absurdly small number; *of course* the probability that God is interested in quasars, physics, or the fine-tuning argument is greater than 1 in 10^{120}!'[1] Given that absurdly small number, PROBABLE wins by default. But as I have indicated, mere improbability is not enough to justify inferring design. The probability of my winning the lottery by chance is astronomically low. Does it follow that *of course* that probability must be greater conditional on God's existence? Of course not. Given that we have no reason to think that God is interested in me in particular winning millions, that probability is equally low conditional on theism as it is on chance. The general point is that without something more being said, it is simply fallacious to infer that some body of evidence must be higher relative to design simply because it is low relative to chance.

Sceptics bear the burden of proof

Now, Hawthorne and Isaacs (2018, 152) assert that the contention that fine-tuning is equally improbable on theism as it is on naturalism is 'ludicrous' because '[a]ny sort of ordinary uncertainty about divine sensibilities will mean that there's massively more chance of God creating a fine-tuned world than 1 in 10^{120}'. But this leads to the third tempting response to inscrutability: claiming that sceptics bear the burden of proof. Perhaps the fine-tuning advocate could grant that the evidence conditional on theism is inscrutable but rest their case by observing that there is no reason to think Pr(F|G&B) *is* absurdly low and challenge the sceptic to demonstrate that it is. Thus, Barnes (2019, 1241) concludes his discussion by writing that '[u]nless the naturalist can produce a positive argument (not mere scepticism) to show that [the fine-tuning evidence conditional on theism] is extremely small, zero, or inscrutable, the likelihood that a life-permitting universe exists on theism is not vanishingly small'.

The problem with these arguments is that they aren't really arguments at all; they are assertions. Hawthorne and Isaacs need to justify the claim that a ridiculously small probability ascription to Pr(F|G&B) is 'ludicrous', and Barnes is the one who must argue that fine-tuning is not 'extremely small, zero, or inscrutable'. After all, it is not up to the sceptic to show that the premises of the FTA are false; it is up to the advocate to show that they are true. Without that demonstration, there is no reason to affirm PROBABLE.

In short, the FTA cannot live with inscrutability.

Strategy #2: Change the hypothesis

But perhaps there is another quick way around the thorny issues raised by divine psychology: simply incorporate the intention to create life into the theistic hypothesis. Waller (2019, 160) advocates this move, writing that 'the claim that is being examined is not the

claim that some kind of god-like thing exists, but the claim that there exists some kind of god-like-thing who wanted intelligent life to evolve in our universe'. He points out that when detectives form hypotheses to explain the evidence at crime scenes (say, poor Charles's perished body), for instance, they do not take the form, 'Smith did something at the crime scene', but rather, 'Smith murdered Charles.'

However, this manoeuvre solves nothing. Say that the probability that God would want to fine-tune the universe is inscrutable. If one then shifts attention to the more specific hypothesis, THEISM-LIFE ('God wants to design a fine-tuned universe'), then the probability of the fine-tuning evidence on the hypothesis is 1 (under the assumption that God is omnipotent). However, if the concerns of divine psychology are cogent, they show that THEISM-LIFE has an inscrutable *prior* probability. THEISM-LIFE might therefore increase in probability based on the fine-tuning evidence, but because we do not know where that probability was originally, such an increase would be evacuated of significance.

For consider that THEISM-LIFE is really the conjunction of two claims: that God exists and that He wants to design a fine-tuned universe. As such, if 'G' is the fact that God exists, 'L' is God's intention to bring about fine-tuning, and 'B' is the relevant background information, then we obtain the following:

$$\Pr(\text{THEISM} - \text{LIFE}|B) = \Pr(G|B) \times \Pr(L|G\&B)$$

In English: the prior probability that God wants to create a life-permitting universe is equal to the probability of God's existence given the background information *multiplied* by the probability that God would want to create a life-permitting universe given God's existence and the background information. But if the concerns of the sceptic are correct, then $\Pr(L|G\&B)$ is inscrutable and therefore so is $\Pr(\text{THEISM} - \text{LIFE}|B)$. Inscrutability thus reappears elsewhere unscathed.

Strategy #3: Provide warrant for PROBABLE

Fine-tuning advocates have no choice: they must show why PROBABLE is plausibly true. I will argue that they can. At this point, it will be helpful to distinguish two versions of the FTA that take as their point of departure the nature of the hypothesis that the argument tries to support:

THEISM	An all-powerful, all-knowing, all-good person designed the universe (Swinburne 2003; Collins 2009).
MINIMAL THEISM	An ultramundane mind designed the universe (Craig 2003; Rota 2016, 2021; Hawthorne & Isaacs 2018; Waller 2019; Loke 2022).

These hypotheses are obviously distinct: the first one says significantly more about the designer than the second. As such, the psychology objection will change form depending on which one is in view. Accordingly, I will split my analysis between MINIMAL THEISM and THEISM.

Given MINIMAL THEISM

Given that a cosmic mind chooses to design a universe, what is our level of confidence that they would make that universe life-permitting? No one, I think, would presume to know with certainty the mind of a cosmic intelligence if such there be, so we can safely take the values of '0' and '1' off the table. But what about having no level of confidence

more precise than this, modelled by the open interval (0,1)? The key to addressing that possibility will be to answer Barnes's (2019, 1250) simple question: 'Under what conditions are we permitted to declare that the probability of a proposition is inscrutable?'

The first point to make is that it is controversial whether credences can consist in ranges of values in the first place. Mahtani (2019, 107) explains that 'classical Bayesian epistemologists think that you have a credence in every proposition that you can enter-tain', such that 'there is some number between 0 and 1 that is your credence that it will snow in London on New Year's Day 2026'. If the classical Bayesian is correct, then there is no question of having a credence that encompasses the range (0,1) for *any* proposition, including the proposition, 'God would craft a fine-tuned universe.' However, my sympa-thies lie with those who find this implication counterintuitive and therefore adopt *impre-cise probabilism*, a view that allows for ranged credences and has a straightforward answer to Barnes's question: when one has no evidence whatsoever for a proposition P, then one's confidence in P ought to be (0,1). Indeed, that seems to be the precise point that fine-tuning sceptics are trying to make: we have no evidence one way or the other for the types of universes a designer is likely to make, and as such, we ought to refrain from ascribing any probability whatsoever to claims about divine psychology.

So, I will assume imprecise probabilism. Are there any good arguments for PROBABLE? Barnes (2019, 1240–1241) contends that if n is the number of possible reasons a designer has to create a universe (whether life-permitting or otherwise), then the probability that said-designer acts on a reason to create a life-permitting universe is at least $1/n$. One motivation for designing a fine-tuned universe is:

LIFE   To bring about intelligent life.

For naturalism to stay competitive with MINIMAL THEISM at this point, it would have to be the case that $n = 10^{136}$, of which only *one* is or entails LIFE. Even if we ascribe LIFE equal probability among all the possible reasons a designer might have, we still have grounds for assigning a higher probability to a life-permitting universe given MINIMAL THEISM than given naturalism, precisely because there is no reason to think that n is anywhere close to 10^{136}. If, for instance, there are only 10^{90} possible motivations for designing a universe, and if LIFE is only one among them, then the probability of a fine-tuned universe condi-tional on MINIMAL THEISM is one part in 10^{90}, a likelihood that is many, many orders of magnitude greater than that likelihood conditional on naturalism: one part in 10^{136}.

But it seems to me that if 'reason' is defined broadly in the way Barnes seems to con-strue the term as simply 'a consideration in favour of taking a certain action', then there are not merely 10^{136} but indeed infinite possible reasons that might drive a universe-designer. In addition to LIFE, I propose the following aims for designing a universe:

BLACK HOLES   To bring about black holes.
ELECTRONS   To bring about three electrons.
ALMOST LIFE   To set the cosmological constant *just* outside the life-permitting range.

The list could go on indefinitely. Another way of capturing this point is to realize that at a sufficient level of specification, every set of values for nature's fundamental constants and quantities is fine-tuned for something, however insignificant that 'something' may appear from our perspective. Goff (2019) provides an illustration: the strong nuclear force has a value of 0.007, and is commonly cited as fine-tuned for life such that if it were much smaller or larger, life could not exist in the universe. But if the force had taken a value of 0.009, 'then presumably this would have made a difference; let us imagine

that only in universes with a strong nuclear force of 0.009 are there precisely 10^{80} neutrons. We could then say that a value of 0.009 is 'fine-tuned' to allow a world with precisely 10^{80} neutrons' (Goff 2019, 114). For any fine-tuned feature, a reason for a universe-designer to select that set of values is that they wanted to guarantee that feature. Why should we treat life any differently than 10^{80} neutrons?

Now, Barnes will point out that 'the existence of infinite numbers of alternative reasons isn't enough. They've got to be as plausible (simple?) as [LIFE]' (personal correspondence). The move now, then, is to justify a non-uniform probability distribution over a designer's possible reasons for creating, privileging those aims that have a greater degree of plausibility. But what qualifies a reason as 'plausible' in this context? Simplicity? In terms of length of description, at least, each of the reasons above is just as simple as LIFE. Certainly, if *I* were creating a universe, bringing about physical life would be a plausible reason to create, given my values and experiences, but I am not the agent under consideration here – a cosmic intelligence far beyond our ken is, and we have no idea whether it possesses any degree of resemblance to us.

So, something more needs to be said about why LIFE is more probable or plausible than other motivations for designing a universe. Rota (2016, 2021), in line with Goff (2019), accepts the point, but argues that life's objective value provides that justification. Rota (2016, 119) argues that the 'existence of embodied persons like ourselves is a great good – rational material beings are objectively valuable', a fact that would give any hypothetical designer good reason to craft a life-permitting universe. Contrast that with a universe consisting of a measly three iron atoms. Such a sparce universe hardly has a claim to objective value. So, when it comes to life and, say, 10^{80} neutrons, there is a sharp asymmetry between the two. Rota (2021) then adds the additional premise that if we can see a powerful reason that some agent *x* could have for doing an action *y*, and we cannot see a similarly powerful reason for that agent to do not-*y*, then we ought to ascribe a non-negligible probability to the claim, 'agent *x* would do *y*'.

The move, then, is to push the analysis one level deeper than the motivations listed above and to discern a *second-order* reason a designer might act on those motivations, whether LIFE, BLACK HOLES, or what have you. Letting 'God' here refer loosely to a universe-designer, Rota's argument (which I have modified for ease of exposition) then proceeds as follows:

1. If we can discern a powerful reason for LIFE, and no comparable reason for other universe-designing aims, then the epistemic probability that God would design a life-permitting universe is non-negligible.
2. If life has objective value, then we can discern a powerful reason for LIFE.
3. Life has objective value.
4. We cannot discern a powerful reason for other universe-designing aims.
5. Therefore, we can discern a powerful reason for LIFE.
6. Therefore, the epistemic probability that God would design a life-permitting universe is non-negligible.

Is this a good argument? Against premise (3), one might charge that such an appeal to life's objective value will only have purchase for those atheists and non-theists who accept some form of value realism (Bradley 2002, 384). However, the distinction between epistemic and metaphysical possibility reveals the error in this objection. Even a moral subjectivist for whom objective moral values are metaphysically impossible will still ascribe an epistemic probability greater than zero to (3) so long as they are not psychologically certain of their views. This point is relevant because the probabilities in a Bayesian inference are epistemic, not metaphysical – they concern our degree of confidence in the truth of a proposition. Moreover, if the moral subjectivist finds even a modicum of plausibility

in arguments for moral realism, they will assign a *non-negligible* probability to (3) as well. If the odds of a universe-designer making the universe life-permitting conditional on moral realism are one in a billion, and the probability of moral realism is itself one in a billion, then the probability of both obtaining is 1 in 10^{18}, a number that is still inconceivably larger than 1 in 10^{136}: MINIMAL THEISM still comes out way ahead of naturalism in the final calculation. As such, even the Rota-Goff line of defence does not require acceptance of moral realism – it only requires that one ascribe a probability to moral realism that is not vanishingly small. Such a probability ascription is eminently plausible.

Against premise (4), one might object that considerations of moral value can actually work against the design inference here, a concern explored in (Draper 2004). If the total moral value of our universe is negative (say, given the rampant uncompensated animal suffering that preceded human beings' arrival), then contemplation of objective goodness would *dissuade* a designer from creating a universe like ours. This objection immediately brings the FTA into conversation with the problem of evil, and although I do not have the space to address the concern in full, it seems to me that the FTA only requires the claim that *for all we know*, the moral factors in favour of designing our universe do not outweigh those against. Given that intelligent life may exist throughout the universe (and that our observable universe may be but the smallest fraction of physical reality as a whole), it is virtually undeniable that we are not able to gauge the cumulative moral value of our universe. The FTA's epistemic requirement *vis-à-vis* evil, then, is met.

Another objection to premise (4) is that it is not clear why powerful motivations for a universe-designer only comprise 'objectively worthwhile' reasons. Perhaps a cosmic mind has a bizarre aesthetic preference for universes with three iron atoms, and they design a universe to satisfy that desire.[2]

It is quite difficult to pinpoint exactly where this objection goes wrong, but reflection on what I dub awesome 'minimally theistic' evidence, a thought-experiment stemming from contemporary scientific discussion, suggests that it *does* go wrong. Hsu and Zee (2006, 1495) ask us to suppose 'that the Ultimate Designer of the universe . . . wanted to notify us that the universe was intentionally created. . . . How would this Superior Being send us a message?', with Hippke (2020) fleshing out their answer: a Cosmic Being, if such there be, would be most likely to leave us a message in the cosmic microwave background (CMB) radiation. If, for instance, we discovered the first thousand digits of π woven into the temperature fluctuations of the CMB, we would, I should think, infer that some intelligence has made itself known. And why? Presumably because π is objectively significant, set apart from those temperature fluctuations corresponding to other series of numbers. And concerns about a cosmic intelligence that does not care about mathematically significant sequences would not deter us in drawing our theistic conclusions. But if *that* would be a rational inference, then the inference to MINIMAL THEISM when observing the objectively significant values of the constants and quantities that allow for life is also rational. There are certainly outstanding questions about the logic of the inference here – but thought experiments like these demonstrate that answering them is not a prerequisite for accepting premise (4).[3]

In short, Rota's argument succeeds: MINIMAL THEISM emerges unscathed from the divine psychology objection.

Given THEISM

Under the heading of THEISM, several philosophers argue for PROBABLE as follows:

1. If God is perfectly good, it is not absurdly unlikely that He would create a fine-tuned universe.

   2. God is perfectly good.
   3. Therefore, it is not absurdly unlikely that God would create a fine-tuned universe.

Premise (2) is entailed by THEISM. On behalf of (1), Collins (2009, 254) contends that it is not stupendously improbable that God would create a universe where conscious beings could exist and enjoy relationship with Him and one another because God is perfectly good, and embodied conscious agents contribute 'to the overall moral and aesthetic value of reality'. The basic logic is: God is good; creating conscious life is a *good* option; so, it is not terribly improbable that God would take that option. Lewis and Barnes (2016, 341) make the terse but effective point that a 'universe capable of producing and sustaining such creatures is a universe with moral worth, one that God might create. This "might", it seems, is enough.' That last point is crucial: given the tremendous improbability of fine-tuning conditional on naturalism, even if fine-tuning conditional on theism is one in a trillion, the maths still works out to dramatically raise theism's probability.

This argument is essentially the same as the one given under the heading of MINIMAL THEISM. The only difference is that the inference it captures is even more powerful because, per the hypothesis, the designer has a morally perfect nature, making it even more likely that they would care about actualizing morally valuable states of affairs. Nevertheless, Manson (2013, 305) maintains that a dilemma bursts into view if we assume with perfect being theology that God is by definition the greatest possible being: God's value is either finite or infinite, but either alternative has unpalatable consequences. Having merely *finite* value does not square easily with God's being the greatest conceivable being, while God's having *infinite* value raises a new problem: He no longer has a reason to create anything, for no addition of moral or aesthetic value could improve a world consisting of God alone. Infinity plus any finite quantity is still just infinity – the total quantity remains unchanged.

There are at least two reasons why Manson's argument is unconvincing. First, God's chief goal in actualizing good states of affairs need not be to increase the *cardinality* of total value obtaining in a world.[4] The set of even numbers has the same cardinality or magnitude as the set of positive integers – but even so, the latter set is larger than the former insofar as it has members not contained in the former (i.e. all the odd numbers). This may not be a difference in *quantity*, but it is an objective difference nonetheless. Similarly, a world with God's infinite value plus the finite value of created persons is greater in some sense than a world in which God exists alone, and that seems sufficient to ground a rational motive to create.

Second, if talk of 'increasing' a world's value when dealing with infinite quantities seems misguided, one can see God as creating conscious agents on the model of supererogation: it is a selfless act done for the creature's good, not one grounded in concerns about maximizing the value of reality as a whole. On this proposal, God creates embodied conscious agents so that *they* might experience the great good of existing in communion with Him. It does nothing for Him, but it does everything for us. God is not looking merely to maximize the value that obtains in a world (moral or aesthetic) – that model may strike us as too clinical, painting God as an engineer of value – but rather, looking to create people so that they might be happy. God's creation of life is an act that God is not obligated to do for any reason (moral or aesthetic) and for which He gains nothing, but nevertheless one that is still morally praiseworthy. And what could be more appropriate to ascribe to a God of infinite goodness than the creation of people purely for their good? The fundamental error in Manson's argument is his assumption that the only reason that could motivate a good God is the *maximization* of value, but I see no reason to accept that assumption. On the analogy of supererogation suggested here, I propose that God might well do good

things that He has no obligation or moral requirement to do, like creating you and me. Thus, when Manson (2013, 305) claims that 'none of these worlds [of God plus a creation] stand above [a world in which God exists alone] in value, and so there is no reason to actualize them', I disagree. God can still rationally act to do a good thing even if that act does not *increase* the goodness that would otherwise obtain. What a wonderful, beautiful, gracious thing it is, then, that God decided to create us!

Another objection Manson (2019, 365) raises is that 'if the goods alluded to require the creation of beings distinct from God . . . then . . . God's creation is necessary, not free'. Intuitively, if God has good reason to create conscious life, then it is not clear how He could be free to *refrain* from doing so, a conclusion that goes against the grain of traditional Christian theology.

I will evaluate this objection under either a libertarian or a compatibilist understanding of free will. Turning first to the former, Manson seems to assume that a libertarian must accept a principle of alternative possibilities according to which, roughly, an agent *S* does an action *A* freely only if *S* has the power to do other than *A* (Carroll and Markosian 2010, 62). It is for that reason that God's being unable to refrain from creating a life-permitting universe abrogates His freedom.

There are two reasons this argument is unsuccessful. First, even if libertarian free will entails the power to do otherwise, nothing about having a reason to create life requires God to so create. From the fact that God has a reason for creating life, it does not follow that He could not have a reason for *not* creating. One could maintain that the reasons for God acting are necessary but not sufficient conditions for God's choice; ultimately, God decides which reasons to act on, and is undetermined in so doing. Libertarians are well aware of the difficulties this explanatory gap between 'reasons for *x*' and 'doing *x*' raises for their account, and they have written several insightful responses to these concerns (Moya 2015; Widerker and Schnall 2015). Second, there are perfectly viable sourcehood accounts of libertarian freedom that deny that the power to do otherwise is a necessary condition for free action (O'Connor and Franklin 2022, sec. 2.3). As such, even if God cannot refrain from creating a universe with life, it will not follow that He does not create freely.

If one opts instead for a compatibilist account of free will, then it follows automatically that God can still be free even if his reasons for creating a world with life determine His actions. Now, Manson (2013, 299) writes that the 'vexing question for the compatibilist about divine freedom is why compatibilism should not likewise apply to *human* freedom'. For if one does make that application, then the theist would have to give up the most promising response to the problem of evil: the free-will defence. To be sure, compatibilist accounts of free will raise difficult questions about the compatibility of God and moral evil, but it is by no means settled and obvious that a compatibilist could not also construct a free-will defence (Turner 2013; Almeida 2016). It's an open question whether these defences ultimately succeed. But precisely for that reason, adopting compatibilism, human or divine, would not automatically yield the success of the logical problem of evil.

Finally, Manson (2020, 315) points out that theism entails that minds need not be connected to physical bodies to exist and flourish (if only because God Himself is a mind without a body). As such, any arguments demonstrating that God would probably create *conscious agents* do not automatically carry any implications for the probability that God would create a *fine-tuned universe* where physical conscious agents could exist and thrive. Similarly, Sinhababu (2017) points out that God had the option to instantiate different psychophysical laws – laws governing the connection between consciousness and the underlying physical structures that could or could not support it – such that two electrons could possess fully equipped minds and even fall in love. Universes like these would not require fine-tuning. So again, there seems to be no way to ground a probability to the claim that God would create a fine-tuned, physical universe.

In evaluating this concern, I concede that we are largely in the dark about the range of possibilities concerning minds disconnected from bodies and the goods or lack thereof that such life could realize. I therefore do not see any reasonable way to nail down one likelihood rather than another of particularly physical life conditional on God's existence.[5] But that concession is not detrimental for the FTA, for at a sufficient level of granularity, inscrutable probabilities are bound to end up in many reasonable inductive inferences.[6] Imagine that in a murder trial, the prosecutor presents a gun, found at the scene of the crime, with fingerprints on the gun's barrel matching those of the defendant. Damning evidence, right? Well, perhaps not, for the defence replies, 'Ah ha! It is only the case that the fingerprint *at some location or other* is more probable if my client committed the murder, not that a gun with his fingerprint *in that exact location* is more likely given my client's guilt – and given that the latter probability is surely inscrutable, the prosecution's case fails.'

I am not a defence lawyer, but this is a bad response. The reason is instructive: any precise location of a fingerprint on the gun is equally improbable on either the hypothesis that the defendant is guilty *or* that he is innocent. For instance, suppose the defence argues that the victim committed suicide; this theory does not indicate where one ought to expect a fingerprint any more than the prosecution's. Neither hypothesis has an explanatory edge here, and therefore the relevant inscrutable probability is immaterial to evaluating them. An equivalent way of thinking about this is to see the precise location of where the fingerprint was left as part of one's *background information* when comparing the hypotheses put forward by prosecution and defence. Think about the epistemic position of the lead investigator after she has discovered the gun and its attendant fingerprint but before getting the results back from DNA analysis. When she then determines that the fingerprint matches that of the defendant, the intuitive result can go through: the DNA match is substantial evidence for the defendant's guilt even if certain elements of the background information are inscrutable.

Expanding on the approach of Collins (2009), who restricts his attention to laws of nature proper, and Page (2020), who focuses on the argument from consciousness, I suggest that we take our psychophysical laws as part of our background information when evaluating naturalism and theism *vis-à-vis* fine-tuning. *Given* these laws, what values for the constants and quantities should we expect conditional on theism or naturalism? God's bringing about conscious agents will then entail that the universe is fine-tuned. Granted, as indicated above, including certain claims in one's background knowledge only works when both hypotheses under consideration attribute the same probability to those claims. But this condition is satisfied: any specific psychophysical law is no less probable on theism than naturalism.[7] Even if those laws, given naturalism, were metaphysically necessary, in this context our concern is with epistemic probability, and nothing within naturalism leads us to *expect* our laws. Thus, even if 'God's existence doesn't dramatically raise the probability of the conjunction that intelligent life exists and the universe has [our] psychophysical laws' (Sinhababu 2017, 95), naturalism does not dramatically raise that probability either. One need not worry, then, about the probability that God would create physical life under *our* psychophysical constraints, for the FTA can move ahead without it.[8]

A final worry that seems to motivate Sinhababu's argument is the seemingly arbitrary 'mind-unfriendliness' of the psychophysical laws that restrict us. A perfectly wise God that desires a universe with conscious agents would institute 'mind-friendly' psychophysical laws that allow anything and everything to serve as a substratum of consciousness – tables, chairs, atoms, planets, and so on – rather than 'unfriendly' ones that only allow an arbitrarily narrow selection of things (e.g. brains) to support consciousness. However, one does not have to acquiesce to a full-blooded sceptical theism to appreciate

the insight that we are simply not able to judge whether such a 'free for all' world would be better or worse than one governed by narrower psychophysical parameters. Indeed, a world where every physical substratum allows for a rich mental life, such that two electrons could fall in love, sounds like utter chaos. At a more general level, an artist is not arbitrary for painting with some colours and not others, and neither is God necessarily arbitrary for deigning some physical things appropriate for consciousness and not others. Sinhababu's claim that 'God would be much more likely to create a universe with mind-friendly psychophysical laws' (Sinhababu 2017, 95) is therefore entirely unsupported.

In short, like its more austere counterpart, THEISM has the wherewithal to combat the divine psychology objection.

Conclusion

I conclude that whether one frames the FTA around MINIMAL THEISM or THEISM, the divine psychology objection fails. Manson (2020, 316) concludes his discussion by advising that 'proponents of the fine-tuning argument . . . do a lot more in the way of explaining why, exactly, we should expect God to create a life-permitting physical universe. If they did that, proponents of the fine-tuning argument actually would be acting charitably – and hence generously – to fine-tuning sceptics.' I hope to have met Manson's request.

Notes

1. 1 in 10^{120} is taken by the authors as the odds of the cosmological constant assuming a life-permitting value, which they then take as a convenient approximation to the total probability of all the constants and quantities taking on life-permitting values.

2. Thank you to two anonymous reviewers for pressing this objection.

3. Does my conclusion here contradict my earlier assessment that awesome theistic evidence does not establish PROBABLE? No. In the latter case, there was no reason to think that fine-tuning evidence was *relevantly similar* to awesome theistic evidence. But this is not so with respect to awesome minimally theistic evidence: the objective significance of the evidence involved (digits of π and embodied life) supplies the similarity that ties them together.

4. Thank you to Robin Collins for suggesting this point (personal correspondence).

5. I reject Swinburne's (2003) argument that physical life is to be expected if theism is true for this reason. While Swinburne points to several goods that physical embodiment permits, he does not successfully show that non-physical life could not or largely does not *also* allow for these goods.

6. My thanks to Robin Collins for inspiring the example to follow (personal correspondence).

7. Indeed, if Cutter and Crummett (in press) are correct that theism explains the psychophysical harmony in our world better than naturalism, then theism attributes a *higher* likelihood to our psychophysical laws than does naturalism. One would not, in this case, include such laws in the background knowledge, but instead add them alongside fine-tuning as evidence for theism.

8. Now, one must be careful when stating the scope or domain of applicability of our psychophysical laws. If theism is true, they cannot have unlimited scope, for while *we* require physical brains to think and feel and experience, God obviously does not. On theism, these psychophysical constraints apply to the physical universe, not all of reality. Similarly to the laws themselves, I suggest that we take the existence of a physical universe as given, and then ask what kind of psychophysical laws one might expect *for that universe*, given theism and naturalism. This procedure is permitted once again because, just like the exact location of a fingerprint on the gun, the bare existence of the universe is no more expected on naturalism than theism. Thank you to an anonymous reviewer for helping me clarify my thoughts here.

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