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# Fine-Tuning and the Multiverse Argument Against Naturalism

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**Abstract:** The multiverse is often invoked by naturalists to avoid a design inference from the fine-tuning of the universe. I argue that positing that we live in a naturalistic multiverse (NM) makes it plausible that we currently exist in a problematic skeptical scenario, though the exact probability that we do is inscrutable. This, in turn, makes agnosticism the rational position to hold concerning the reliability of our reasoning skills, the accuracy of our sensory inputs, and the veracity of our memories. And that means that agnosticism is also the rational position to hold concerning all the beliefs derived from those sources, which includes nearly all of them. Consequently, there is an unacceptable skeptical cost to accepting a NM, thereby requiring a rejection of the NM as a counter to fine-tuning or a rejection of naturalism itself.

**Keywords:** Skepticism, Fine-tuning, Multiverse, Theism, Naturalism

## Introduction

Fine-tuning is the idea that life in our universe would have been impossible if a wide variety of the universe's physical properties had differed at all, even if only infinitesimally. For instance, "if the force of the big bang explosion had differed by one part in $10^{60}$" then "the universe would have either collapsed on itself or expanded too rapidly for stars to form" (Himma, 2023). And this is just one example of many which demonstrate how precise the fine-tuning needed to be for life to exist in our universe.[1] From this curious fact, theistic philosophers like William Lane Craig (2008, 157–172) have argued that this fine-tuning is best explained as a product of design—as opposed to chance or necessity—which, in turn, points to a designer of the universe. Other theistic philosophers, like Robin Collins (2012, 202–281),

[1] Kenneth Himma, for instance, notes that scientists "have determined that life in the universe would not be possible if more than about two dozen properties of the universe were even slightly different from what they are." (Himma, 2023)

contend that our fine-tuned universe is more expected on a theistic hypothesis then it is on the single atheistic universe hypothesis, and so fine-tuning is evidence for the former hypothesis over the latter one. But regardless of which approach is used, it is undeniable that fine-tuning has served as part of the modern cumulative case for theism.

Not surprisingly, many naturalists are disinclined to explain fine-tuning via design or to see it as evidence for theism (with naturalism being understood here as the view that only the natural, material world exists, and that no God or gods, or anything like God, exists (no souls, angels, etc.)). Nevertheless, the fine-tuning itself is difficult to dismiss. Consequently, for certain naturalists, the "multiverse" serves as an answer to the design threat posed by fine-tuning; this is the idea (to be explained further below) that an incomprehensible number of different universes exist, each with its own parameters. Given the existence of such a naturalistic multiverse (NM), the problem of fine-tuning evaporates,[2] as a universe that is life-permitting is almost guaranteed to exist on such a view, and so the existence of our fine-tuned universe is not surprising. Moreover, this NM answer to fine-tuning is not a fringe view. As Simon Friederich (2022) notes, "[m]any of those who believe that fine-tuning for life requires some theoretical response regard [the multiverse] as the main alternative beside the designer hypothesis."[3]

I argue that if a naturalist appeals to a NM to avoid the design implications of fine-tuning, then she runs head-long into a further issue: namely, that her belief in the NM undercuts her belief in naturalism. Specifically, if a naturalist believes that she exists in a NM, then she has good reason to be agnostic about the reliability and veracity of her thoughts, reasoning skills, sensory inputs and memory (hereafter referred to as her cognitive faculties). But since the naturalist's belief in naturalism is ultimately derived from those sources, then she has good reason to be agnostic about naturalism, along with the many other beliefs also derived from those sources. Consequently, the NM-believing naturalist is stuck in a dilemma: either drop the NM as a counter to fine-tuning, or embrace it, but then lose rational belief in naturalism, along with much else.

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[2] Some disagree, arguing that the multiverse itself would require fine-tuning to exist, but we will leave this point aside for our purposes.

[3] Granted, there has been some debate about whether inferring the NM from the fine-tuning of our universe commits the inverse gambler's fallacy. Although this debate is ongoing, for our purposes, the point is that many individuals do posit the NM as an explanation for fine-tuning, and it is towards such individuals that the argument in this work is aimed. For some of the debate concerning fine-tuning and the inverse gambler's fallacy, see Friederich (2019) and Goff (2021).

**The Problematic Naturalistic Multiverse**

There are several conceptions of the multiverse. Max Tegmark (2004, 460–485), for instance, lists four of them. A Level 1 multiverse postulates a spatial extension of our currently visible cosmic zone, with a massive or even infinite number of such cosmic zones, each with its own distribution of matter, but with the same laws of physics. Our inability to see these other cosmic zones arises from light's finite speed, which only lets us see so far into this Level 1 multiverse. Tegmark (2004, 461–465) also argues that some of these other cosmic zones—even an infinite number of them—will be identical to our own, while many others will be like ours, and still others very different from what we currently experience. A Level 2 multiverse contends that space is stretching out indefinitely, but as it is doing so, pockets of space stop stretching and form bubble areas, which are Level 1 multiverses. These different Level 1 bubble universes have different physical constants, so a Level 2 multiverse has massive amounts of different Level 1 multiverses forming within it. A Level 3 multiverse is the many-worlds interpretation of quantum mechanics, where every possible observation of some event corresponds to a different universe; Tegmark notes that a Level 3 multiverse is fundamentally no bigger than a Level 1 or 2 multiverse, as all the things that would happen in a Level 3 multiverse would ultimately also happen in a Level 1 and 2 multiverse, it is just the location of where they occurred that would be different. Finally, the Level 4 multiverse is one where any universe that could be described by a different mathematical structure is real.

Yet right here is where several inscrutabilities begin for the NM proponent. For instance, which conception of the NM is correct? Does the NM *necessarily* produce universes with life-permitting properties—a fact which could create its own design inference[4]—or are universes in the NM randomly generated, so that their physical properties are established by chance? Moreover, does the NM contain an infinite number of universes and/or cosmic zones? If not, then how many universes and/or cosmic zones are there, and how many of those are life-permitting? Just one or two, or many? For consider that even if life-permitting universes are necessarily generated in a finite NM, that does not guarantee how many are created. Perhaps it is one life-permitting universe for every ten universes created, or maybe it is one for every trillion. By contrast, if universes in a finite NM are randomly created with their physical properties established by chance, then life-permitting universes could—just by chance—be plentiful or extremely rare. Nor is it clear how populated such

[4] For consider that if the multiverse necessarily creates life-permitting universes, then what caused *that* to be the case: its own necessity, chance, or design?

life-permitting universes would be in the NM. Some universes or cosmic zones may teem with life across their whole expanse (perhaps with intelligent life in every galaxy and even in every solar system), whereas other universes or cosmic zones may only have one location with intelligent life across their entire space. Ultimately, answers are lacking for these questions, a point that will become important moving forward.

Next, consider the number of problematic scenarios—problematic in the sense that they raise serious worries about the reliability of an individual's cognitive faculties—that could occur given a NM.[5]

First, consider the issue of Boltzmann Brains, as articulated by Sinan Dogramaci (2020, 3717):

> It's possible the universe continues forever in duration or in space. If it does, it's also true that, at any time and place, even in the dead of space, there's always a slim chance that particles will randomly come together to briefly form a conscious brain, maybe even one having a brief stream of experience that is exactly like my current experience (apparent memories of my past included). If so, then it's a near certainty that the universe's full history will contain zillions of short-lived brains with experiences just like my current experience, brains that pop into existence and quickly die out after having this experience. However confident we might be that the universe will be infinite in this way, then, we should be likewise confident that a randomly chosen brain, out of all the brains that ever exist, would be one of these so-called "Boltzmann Brains."

The endlessly expanding and/or enduring universe described above could be construed as an infinite Level 1 multiverse, to use Tegmark's term. Thus, such reality-hallucinating Boltzmann Brains (hereafter BBs)—BBs that hallucinate a reality almost identical to mine, including with my memories—would be innumerable in such a NM.

Next, consider simulated universes. Nick Bostrom (2003) claims that we might exist as conscious simulations (what I will call "sims") in a computer simulation created by a technologically advanced species (including possibly by future humans). Bostrom (2003, 243–246) argues that if a "widely accepted" naturalistic position about the philosophy of mind is adopted—namely, an "attenuated version of substrate-independence" (the idea that "mental states can supervene on any of a broad class of physical substrates")—then such sims are possible given an adequate

[5] Many of these problematic scenarios are not new, nor is it my aim to claim that they are. Rather, they are simply articulated to show just how many of these scenarios could exist given a NM.

level of computational technology. Consequently, on naturalism, it is very likely that such sims could exist, and, as Bostrom argues, there is a non-negligible possibility that we are in such a simulation right now (regardless of if a NM exists or not). Even more interesting is the idea that if such simulations are possible, then the sims may themselves become sufficiently technologically advanced that they create their own simulations, thereby producing simulations within simulations. Thus, on naturalism (or at least on the many forms of naturalism that can co-exist with substrate-independence), a literal multiverse of simulations within simulations could plausibly exist.

Granted, Bostrom notes that the simulation hypothesis is not like more traditional skeptical problems—i.e., Descartes' demon—where all knowledge is in question. After all, sims, though sims, could still know that a simulation exists, that technology is sufficiently advanced for such a simulation to operate, and that simulation-creators exist (or did exist). And yet, even given the existence of such knowledge by the sims, the simulation hypothesis still generates seriously problematic scenarios. For instance, some (or all) of the simulations could have been started one, or two, or ten minutes ago with the appearance of age, and with false memories implanted in all the sims. Or the simulation-creators could exert direct control over the cognitive faculties of certain sims (or all of them), forcing them to believe certain (irrational) things that the sims are programmed to believe they have freely chosen to believe (and perhaps the sims are even made to believe that they have good reasons for those beliefs, though no such reasons exist). The simulation-creators could also inject false sensory perceptions into the sims, ensuring that those perceptions are nothing like what non-simulated reality really looks like. Even simulation solipsism would be possible, where the simulation-creators make one sim genuinely conscious, but all the other entities in the simulation are merely non-conscious programs, meant to simulate live sims. These concerns could also be combined; for instance, you could have a solipsistic simulation that also started recently with the appearance of age, and with false memories implanted in the one conscious sim. And lest someone object that simulation-creators would not create simulations like those articulated above, note that the moral character of any simulation-creators—if they exist—is unknown. Indeed, the simulation-creators could be saints, or sociopaths, or something in-between (like scientists trying to examine the reactions of conscious sims in different simulated environments, including skeptical ones).

Paralleling the simulation issue is the more traditional brain-in-a-vat scenario, which is an exemplar for the idea that conscious biological organisms could be stimulated, through drugs, technology, or both, to experience a completely realistic virtual reality (VR). And, on naturalism, this certainly seems plausible, especially

since rudimentary VR technology already exists. Granted, technology would need to significantly improve for totally immersive VR to exist, or for brains to be directly stimulated, but there seems to be nothing in principle that would prevent this from occurring on naturalism. Indeed, when it is understood that, on naturalism, the mind is not considered something outside the realm of physics or biology,[6] and thus it can be examined, affected, and even stimulated via scientific means, then the possibility of such a totally immersive VR—including direct brain stimulation—becomes entirely plausible. Consequently, some technologically advanced society or individual, or even a conscious artificial intelligence, could have brains or whole bodies in vats of chemicals, stimulating those organisms to believe that they exist in an actual world with other people, etc. And all the worries articulated in the simulated universe scenarios would also exist in these virtual world scenarios: for instance, virtual worlds being created recently with the appearance of age and with false memory injects, solipsistic virtual worlds, etc.

Moreover, the skeptical worries stemming from this type of situation need not arise from nefarious circumstances. For instance, imagine a naturalistic world where technologically advanced beings—or even conscious machines—freely want to experience the life of some other sentient species; thus, these advanced beings enter a VR where their memories are erased and they experience a false life as some other species—perhaps as a human being—only to regain their alien or machine memories once they "die" in the virtual simulation. Or maybe these advanced beings want a shorter experience, so they begin their VR half-way through a normal human life, with the VR being given the appearance of age and with false memories being implanted in the entities. Thus, skeptical scenarios like these could arise for benign reasons.

But the worry of creator-controlled worlds extends beyond just simulation or VR creators. After all, on naturalism, it is plausible that some entities could become so technologically advanced that they could create actual life-filled planets—perhaps even whole universes. They could, in essence, become naturalistic cosmic-designers. As physicist Paul Davies (2008, 186) notes: "if a multiverse exists, it is impossible to avoid the conclusion that at least some universes containing observers are the product of designer-creator gods." But again, such entities—whose character would be unknown—could create worlds (or universes) with all the same worries noted above: young worlds with the appearance of age, solipsistic worlds, brain-in-vat

[6] As Jon Jacobs (2023) notes: " . . . according to the naturalist, the mind is not "outside of nature." It operates in accordance with principles fundamentally like those that govern other natural phenomena."

worlds, worlds where the creators controlled the cognitive faculties of their seemingly free conscious creations, and so on.

Also, consider that, on naturalism, there would be possible worlds—in possible universes and/or possible cosmic zones—where, given different evolutionary pressures, organisms (including conscious ones) could develop in ways vastly different from the way that we believe life seemingly developed. For example, conscious organisms may have developed who live for hundreds of years, and whose sleep cycle consists of hibernating for several years at a time. However, to keep themselves occupied during hibernation, such organisms naturally experience hyper-realistic dreams, where the dreams are indistinguishable from reality (or maybe such organisms do not experience these dreams naturally, but they are sufficiently advanced technologically to cause themselves to have such dreams to help with the boredom of hibernation).[7] Alternatively, on naturalism, there could be possible worlds where conscious entities evolved to have two brains, much like cows evolved to have multiple stomachs. One brain would move the entities around and keep them alive, all without conscious input, whereas the other brain—using the sensory information acquired by the first brain as a building template—would keep the consciousness of such entities occupied in a type of waking dream. Thus, the "reality" experienced by the conscious part of such entities would be entirely self-produced and would have little to do with the genuine reality that is outside them. Note as well that while such entities could have evolved naturally in some possible worlds, they could have also been created in this manner by some naturalistic cosmic-designer, or they are sims who were created to exist in this way (for instance, a sim developed to hibernate and experience hyper-realistic dreams *as a sim*).

Finally—and as argued by philosophers like Jim Slagle (2023)—there could be possible worlds (again, in possible universes and/or possible cosmic zones) where conscious organisms evolved similar to the way modern humans arguably did, but whose cognitive faculties were unreliable and routinely mistaken, both in general and/or just concerning metaphysical issues, like philosophical arguments. Such organisms could have also been created by a naturalistic cosmic-designer in such a fashion or created as a sim to have such unreliable cognitive faculties.

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[7] Note that, against dream skeptical scenarios, it is sometimes objected that dreams are less clear or coherent than waking experiences, so that serves as a way to distinguish between dreams and reality, and thus to defeat the skeptical scenario. But the way in which the dream scenario is posited here neuters that objection. Nor is this approach *ad hoc*, because it is being offered as merely possible, which it certainly is, especially given the vastly different evolutionary pressures that could exist in different possible worlds across the NM.

**The Naturalistic Multiverse and Inscrutability**

So, given a NM, multiple problematic scenarios are not merely possible, they are plausible, and are arguably as plausible as normal scenarios. For instance, as just one example, consider that in either a finite or infinite NM, any conscious entities that were not created by other naturalistic entities—i.e., cosmic-designers—would almost certainly be the product of evolutionary-type forces, for how else could life develop on naturalism. But then, the occurrence of problematic evolutionary scenarios would be entirely plausible, and arguably just as plausible as normal evolutionary development, for given the different evolutionary pressures that could exist in possible worlds in the NM, we cannot say that "normal" evolutionary scenarios are more plausible than problematic ones. Next, if an infinite NM exists, then problematic scenarios *are* occurring—or *almost certainly* are occurring—across the NM right now. For instance, remember how Dogramaci and Davies noted that, in an infinite NM, it is a near certainty that zillions of experience-hallucinating BBs exist, and that designer-creator gods exist. Or remember how Tegmark noted that a Level 4 multiverse is one where any universe that could be described by a mathematical structure is real, meaning that an untold number of problematic universes (or universes with problematic scenarios in them) are real. And the same would essentially be true for Level 1, 2, or 3 NMs. Consequently, no matter what NM is being dealt with, problematic scenarios are either eminently plausible—arguably as plausible as normal ones—or they actually are occurring in the NM. And again, these scenarios are problematic because, if a person were in one, then that person's sensory experiences, beliefs, memories, etc., would be identical to what they are now, and yet some or all of the person's cognitive faculties would be unreliable or false (and this would be the case either because the person was being controlled or affected by forces that cause such unreliability (i.e., a brain-in-a-vat type scenario, hallucinatory hibernation, etc.) or the person was created by entities and/or processes that caused the unreliability (i.e., created by malicious cosmic-designers, or by non-rational evolutionary pressures not interested in truth, etc.)).

So, in a NM, problematic scenarios are plausible and/or are occurring. However, the probability that an inhabitant of the NM is in a normal scenario rather than a problematic one is inscrutable, meaning there is no way of knowing its value. This is because there are questions about the NM that cannot be answered. First, and as mentioned previously, is the NM finite or infinite? If the former (the latter will be addressed later), then of all the life-permitting universes and/or cosmic zones in the finite NM, how many contain problematic scenarios? Do the problematic scenarios outnumber normal ones? And if so, by how much? Moreover, how many reality-

hallucinating BBs or cosmic-designers inhabit this finite NM, and how many universes or environments did the latter create? Additionally, are reality-hallucinating conscious species—as described earlier—vastly more likely to evolve and predominate in the finite NM than normal conscious species? Such questions cannot be answered, thus creating the inscrutability noted above.

Even a completely *ad hoc* claim, like that there are only two life-permitting universes in the whole finite NM, would not help the NM proponent. For perhaps one of those universes only has one conscious species throughout its whole expanse, while the other is teeming with conscious life, with a conscious species in every one of its trillions of solar systems and galaxies. And, in that life-teeming universe, perhaps problematic scenarios vastly outnumber normal ones. Thus, even in a NM with only two life-permitting universes, it is entirely possible that problematic scenarios still vastly outnumber normal ones.

Of course, it is not being claimed that problematic scenarios do outnumber normal ones in a finite NM. After all, a proponent of this argument is as ignorant of the probabilities as the naturalist is. Thus, to an inhabitant of the NM, the ratio of problematic scenarios to normal ones is unknown, and so, the exact probability that they are in a normal scenario versus a problematic one is inscrutable. This, in turn, means that the probability that the inhabitant's cognitive faculties are reliable rather than not, that their sensory inputs are accurate rather than not, and that their memory is correct rather than not, is also inscrutable. And based on this understanding, a multiverse argument against naturalism (MAAN) can be formulated.

## The Multiverse Argument Against Naturalism

The MAAN is based on the following principle of agnosticism:

> If a person has good reason for agnosticism about the reliability of some source of information, and that person has no good reason to reject that original reason for agnosticism, then the rational position for that person to adopt concerning issues for which that source of information is her *only* source for such information, is agnosticism.[8]

Now, a person has *good reason for agnosticism* about the reliability of some source of information, if she accepts (for good reasons) that the source is in a particular condition, and she has good reason to be agnostic about the probability that the

[8] I borrow this argumentative approach from Crisp (2016).

source of information would be reliable in that condition. A person would then have *good reason to reject that original reason for agnosticism* only if the person also believed that the source of information was both in the first condition, but also in another one, and that the source of information would then be reliable given its existence in both those conditions.

To see why this principle should be accepted, specific cases can be considered. For instance, suppose a man wants to use his smartphone's calculator for a complex mathematical calculation, but the man knows that it is plausible, and arguably as plausible as not, that the smartphone was recently infected by a virus that will make all its features inaccurate and unreliable, though the exact probability that this occurred is inscrutable. Consequently, the phone is in the situation of "plausibly being infected by a virus that affects all its features," and the man thus has good reason to be agnostic about the probability that the source of information—i.e., the calculator—would be reliable in that condition, leading to the conclusion that he should be agnostic about any mathematical output that the calculator provides, unless the man had other information to indicate the calculator was still reliable. And indeed, it is doubtful that anyone would trust the calculator's output in such a situation, unless its reliability could be confirmed via other means.

Next, imagine a police officer who is dealing with a mentally ill man. In this situation, it is known that it is plausible that the man has vivid, lifelike hallucinations, but the frequency of these hallucinations is inscrutable to the officer. The man could be hallucinating 95% of the time or not at all. Now, in this situation, the man tells the officer that he saw an incident of indecent exposure, yet his testimony is the only source of information concerning this alleged crime. Given this, the rational response to the man's testimony would be agnosticism (even though the officer might investigate the allegation for purely pragmatic reasons (i.e., better safe than sorry)). Of course, if the officer later learned that the man had recently started medications that ensured he would not hallucinate, this would provide the officer with good reason to reject his initial agnosticism. However, in the absence of that type of information, agnosticism is the rational position to take. Such cases, and others like them, provide strong support for the agnosticism principle above.

Finally, to see how the principle applies directly to the NM, consider this analogy. Imagine that a man named Bill wakes up in a giant self-contained windowless room that he cannot leave, a room which contains technology and everything else needed for life and development. Now, in this room, Bill comes to believe that naturalism is true, which means that he adopts a naturalistic position about the mind, etc. Bill also comes to believe that an innumerable but still finite number of other such rooms exist. At the same time, some, and maybe even all the rooms contain one or more

conscious creatures, as well as different technologies and/or evolutionary processes inside them. Bill then realizes that, in this situation, it is plausible that problematic scenarios are occurring in other rooms and are no less plausible than normal scenarios occurring. For instance, it is plausible that there are rooms where people have supercomputers that create sims who are then placed in simulated rooms that they believe are real. And it is plausible that there are rooms that contain powerful entities who are able to manipulate their own rooms, and create rooms within the rooms, populating those new rooms with people that they create; some of those rooms may have been created with the appearance of age, and with memories implanted in the people who inhabit those rooms. It is also plausible that there are rooms where someone is testing fully immersive VR technology on someone else (or themselves), or where people evolved in strange ways. Finally, it is plausible that in some rooms, brains come into existence randomly, with many such brains having false experiences of a room around them and memories of being in such a room for a long time. Bill also knows that if such situations were occurring, everything would still seem normal, even though it was not. So, Bill knows that it is plausible that such things are occurring in some or even all the rooms, though the exact probability with which they are occurring in the rooms is inscrutable. But given this inscrutability, Bill has no idea if he is in a problematic room or not, though it is plausible that he is. And since all his experiences, memories, etc. would be the same, he has no way to determine if he is in a problematic scenario/room or a normal one. In such a situation, the rational position for Bill to take would be agnosticism about whether he was in a problematic scenario/room, which would entail being agnostic about the reliability of the things that could be affected by such a problematic scenario/room, namely his reasoning skills, beliefs, memory, sensory inputs, etc. (i.e., his cognitive faculties) And since Bill has no other reason to think that his cognitive faculties actually are reliable, then agnosticism remains the rational position for Bill to hold. Granted, Bill may still act—in a pragmatic sense—as if his cognitive faculties are reliable, for what else could he do, but agnosticism about them would be the *rational* stance to hold.

This analogy shows why a naturalist who believes that she is in a NM—which is like Bill's situation—should be agnostic about the reliability of her cognitive faculties. This then undermines naturalism because a naturalist's cognitive faculties are their only source of information for their reasoning processes, their beliefs, their memories, etc. Thus, to be agnostic about the reliability of those cognitive faculties is to be agnostic about the beliefs that they produce, which includes belief in naturalism. Of course, as with Bill, a naturalist could pragmatically act as if her

memories were reliable, etc., but from a rational perspective, agnosticism is the proper position to hold.

However, does positing an infinite NM[9] help the naturalist evade the issue above? It does not. In fact, it arguably makes things worse, for in an infinite NM, not only is it plausible that problematic scenarios are occurring, it is essentially beyond a reasonable doubt that they are. For instance, remember how Dogramaci noted that zillions of BBs exist in such a universe, or how Davies argued that in such a NM, some universes will be the product of cosmic-designers. Davies (2008, 183) even adds that:

> If we are prepared to entertain the notion that there exist limitless universes that are unobservable from this one, why should we rule out the existence of limitless simulated, or fake, universes too? No reason at all. In fact, not only have we no reason to rule them out, we have every reason to rule them in.

Thus, in an infinite NM, the same problems as above occur for the naturalist, meaning that agnosticism remains the rational position to hold in that situation.

But in an infinite NM, what is the probability that the naturalist is in a problematic scenario versus a normal one? If both problematic scenarios and normal ones are infinite, then it seems that the probability that the naturalist is in a problematic scenario is 50% (just like the odds of picking an even number from a set of infinite numbers is 50%). This 50% probability, however, also offers no aid to the naturalist. For if a person has nothing better than a coin toss's chance that they are in a normal scenario rather than a problematic one, meaning that it is as likely as not that their reasoning skills, sensory inputs, memory, etc. are in a problematic scenario, then agnosticism about the reliability of those sources of information is still the rational option. To use the analogy from earlier, if there was a 50% chance that Bill was in a problematic scenario, then agnosticism about the reliability of his cognitive faculties would remain the rational position. A naturalist could object though, that even in an infinite NM, it is possible that the division of normal and problematic universes/scenarios need not be 50%. For instance, perhaps 70% of the life-permitting universes/scenarios in the infinite NM are problematic and 30% are normal, or vice versa. Assuming this is even possible, it still fails to help the naturalist, because then the probability that the infinite NM inhabitant is in a problematic universe/scenario is, once again, inscrutable, as the naturalist has no

[9] Be it a singular universe of infinite duration and/or size (with many different cosmic zones), or an infinite number of finite universes, or an infinite number of universes that are also infinite in duration and/or size.

more idea what the probabilities are in the infinite NM as he does in the finite NM. However, such inscrutability simply leads back to agnosticism as the rational position to hold, and so the naturalist is no better off.

Consequently, whether it is a finite or an infinite NM, the rational position for a naturalist existing in such an environment to adopt is agnosticism about the reliability of their cognitive faculties, thereby making rational belief in naturalism untenable. The only question that remains is whether, as per the principle of agnosticism, the naturalist has a reason to reject her initial grounds for agnosticism, a question which will now be considered.

## Objections

### *Bostrom's Objection*

Writing about "Big Worlds"—meaning an infinite multiverse of some type—Bostrom (2002, 608) articulates the concern of living in such a world: namely, that in such a place, "every possible observation is in fact made" (or at least there is a high probability that this is the case), and so how "can vast-world cosmologies have *any* observational consequences *at all*." Therefore, there is the concern that different theories cannot be empirically tested because every observation will be made and have a probability 1 of occurring.

For example, Bostrom (2002, 609–610) notes that in a Big World, there is a finite probability that any physical object, including a human brain in a particular state, will be emitted by a black hole when it evaporates. Thus, as Bostrom notes, a brain might appear having an illusory experience of reading a measuring device, whereas another brain may appear and have a veridical experience of doing so, as a measuring device just happened to appear alongside the brain with the brain observing it. Bostrom (2002, 610) does note that the probability of this occurring is infinitesimal, but "even a low-probability outcome has a high probability of occurring if the random process is repeated often enough," which is what happens in a Big World. Bostrom further notes that seemings (although he does not use that term) will not help, because in Big Worlds, whole environments might spring forth from dying black holes or thermal fluctuations. Thus, in a Big World, humans would spontaneously arise alongside the very environments—an office or home, for instance—that causally provide them with their veridical seemings (Bostrom, 2002, 613–614). And so, it is possible that we are in such a problematic scenario within the Big World, and neither our intuitions nor our seemings help us overcome the worries such a world creates. Yet Bostrom offers a solution to his Big World

observational problem. He argues that because such freak observers—like spontaneously-created brains having hallucinations of reality, etc.—are such a tiny minority out of the trillions upon trillions of regular observers, then it is highly unlikely that we are among their number. It is possible that we are, but that is such a tiny possibility that it can be disregarded. Thus, so long as observations are considered specifically from our perspective—i.e., *we* are making observation such and such—then the problem of freak observers can be mitigated and empirical evidence can help us decide between theories.

The problem with using Bostrom's objection against the MAAN is that, as the MAAN notes, we have no idea if observers in problematic scenarios in the NM are a tiny minority of all observers that exist. Perhaps they are equal to, or even vastly outnumber, observers in normal scenarios. For instance, perhaps the simulation-creators made so many sims in problematic simulations that the latter vastly outnumber normal observers in the NM. Perhaps a cosmic-designer did the same when he created countless worlds. Perhaps, due to different evolutionary pressures across the NM, conscious organisms that evolved to have their consciousness occupied by self-produced hyper-realistic "dreams" vastly outnumber normal conscious organisms. Maybe reality-hallucinating BBs with coherent hallucinations vastly outnumber normal observers in the NM. And so on. Again, the probabilities here are inscrutable.

Or, to use Bostrom's own example, perhaps the majority of other universes in the NM are inundated with freak-observer-producing black holes or thermal fluctuations, making it as likely as not (or even more likely than not) that an observer in the NM is a freak observer. Bostrom's example, moreover, can be made even more problematic, for imagine that, from the death of a black hole or from a thermal fluctuation, a conscious freak observer spontaneously arises in 1) an environment that allows him to continue existing, and 2) with the technology necessary to produce *countless* other freak observers (like sims or brains-in-vats, etc.), and 3) with both the knowledge and desire to do so. Granted, the chance of this happening is unimaginably small, but it is possible, and so, Bostrom's reasoning would indicate that it has a guaranteed (or nearly guaranteed) probability of occurring somewhere in the Big World. But then, who knows how many other freak observers in problematic scenarios this spontaneously created being might make; they could equal or even vastly outnumber normal observers in the NM. Alternatively, perhaps a being with the technology or innate powers to create whole other actual worlds spontaneously arose from the aforementioned fluctuations, then started to create those worlds. Or perhaps both these events happened. The point is that, given a NM, Bostrom's response to these skeptical worries fails, because we have no idea if

observers in problematic scenarios are a tiny minority of all observers, and we arguably cannot know this even in principle. It is inscrutable, and that is all that is needed for the MAAN to go through.

*Carroll's Objection*

To address the worry that we may be BBs, Sean Carroll (2021, 16–17) argues that believing that we are (or likely are) such brains is an "unstable belief," because if we believe that claim, then we should reject the very scientific evidence that made us believe in BBs to begin with. And Carroll's reasoning could be extended to at least some of the other problematic scenarios posited in this work. For instance, if I am agnostic about whether or not I am a brain-in-a-vat, and thus that I might be controlled—including possibly having my beliefs be controlled—by some other entity in the NM, then that fact should cause me to question my very beliefs about the NM and even the possibility of brain-in-vat scenarios. Consequently, I would have an unstable belief in Carroll's sense of the term. The problem with Carroll's objection, however, is that mere cognitive instability is not a sign of falsity. As Matthew Kotzen (2021, 26) notes: "Cognitive instability, all by itself, is not a sufficient reason to reject a hypothesis." Thus, Carroll's objection is not an adequate answer to what can be understood as this paper's "hypothesis": that it is plausible that we are in a problematic scenario in the NM, and since the exact probability that we are is inscrutable, then agnosticism is the rational position to adopt about that issue, leading to agnosticism about the reliability of our cognitive faculties, and thus to agnosticism about any belief derived from those cognitive faculties, including naturalism.

But Carroll's point about cognitive instability raises a further objection. Namely, if we generate a situation where we have a defeater for *all* our positive beliefs—as is the case with the MAAN given its conclusion that we should be agnostic about any beliefs derived from our cognitive faculties—then not only do we have a reason to reject positive belief in naturalism, we also have a reason to reject positive belief in the MAAN itself. Thus, our positive reason for rejecting naturalism is itself defeated, which means that the naturalist can once again believe in naturalism alongside the NM. Consequently, the MAAN defeats itself, and so it seems that the NM-believing naturalist has little to worry about. But this is incorrect. For while it is true that the MAAN defeats itself, it does so in an endlessly looping manner where NM-accepting naturalism is continuously defeated, albeit in an unresolved way. Indeed, the NM-believing naturalist is subject to an unresolved defeater for either his naturalism or the NM, because whenever he believes the two together, he is subject to the MAAN

and thus to the rejection of all his positive beliefs (including about the NM and naturalism), which, in turn, allows him to reject the MAAN. But then, the moment he re-accepts naturalism and a NM (if he does), the MAAN kicks in once more, and so on *ad infinitum.* And, as Slagle (2015, 1141) notes: "when we see the irresoluble scenario that an unresolved defeater presents, the rational response is to avoid it," which in this case means avoiding either naturalism or the NM.

However, the situation is even worse for the NM-believing naturalist, for the defeater against him need not be seen as a loop, but rather as an infinite regress that gives the naturalist no escape. Slagle (2015, 1141–1142)—speaking about Alvin Plantinga's Evolutionary Argument Against Naturalism (EAAN)—explains this idea well:

> The naturalist who comes to realize that she has a defeater for R [here understood as the reliability of the naturalist's cognitive faculties, the accuracy of her senses and their inputs, and the truth of her memory] will then believe ~R. This is level 0. But then ~R would defeat all of her other beliefs, including ~R itself; it is a defeater defeater. Therefore, on level 1, she is left with ~~R (= R). However, that is not all: the defeater for all of her beliefs is ~R, and the claim here is that it defeats itself. Namely her belief ~R. *But ~R also defeats R.* Since any belief B is defeated by its negation ~B, R is defeated by ~R. Therefore, on level 1, ~R defeats both R and ~R, so the naturalist is left with negations of both: ~R and ~~R respectively. On level 2 ~R is a defeater for ~~R and so she is left with its negation ~~~R (= ~R). But again, ~R still defeats R, so she is also left with ~R via a less circuitous route. So on level 2 she believes ~R and ~~~R. And so on. … The point being that, unlike other cases of defeater defeaters, *~R is present at each stage.*

Thus, the skepticism against the NM-believing naturalist's position is pervasive, and she cannot escape it unless she rejects either the NM or naturalism (or both).

*Huemer's Objection*

In his paper "Serious Theories and Skeptical Theories," Michael Huemer (2016) offers an interesting objection to the claim that we should take skeptical scenarios seriously. Using the brain-in-a-vat scenario as his example, Huemer notes that, if we are assessing the likelihood that some scientist is providing such a brain with coherent experiences like the ones we have now, then that requires assessing the various ways that the brain-in-vat world could occur given the characteristics of the scientists and the equipment being used. While difficult, Huemer argues that on the vast majority of specifications in such a world, the brain-in-a-vat would not have

experiences like the ones that we are actually experiencing. For instance, Huemer states that while the scientists controlling the vat-simulation may have a desire/purpose to make the brain experience a world like this one, they may have multiple other purposes as well, like making a simulation where the vatted-brains experience the color purple, or experience pleasure, or experience an artistic or intellectually interesting simulation. And Huemer (2016, 1038) claims that many "of these other possible purposes seem to make a fair bit more sense than the purpose of producing a perfectly realistic simulation of a bland, ordinary life in the early twenty-first century." Huemer adds that the capabilities of the simulation-generating equipment and the skills of the scientists must also be taken into account, for only on a narrow range would they be capable of generating a seamless world like the one we currently experience. Consequently, Huemer concludes that if we were brains-in-vats, then our experiences would almost certainly *not* be like those that we have now. Thus, we have grounds to reject the idea that we are a brain-in-a-vat rather than a normal person in the real world, because the former would have a very low *a priori* probability, which would give us an *a priori* reason to reject the brain-in-a-vat scenario.

While Huemer's argument focuses on brains-in-vats, it could apply to at least some of the other problematic scenarios that have been offered in this work. Nevertheless, Huemer's argument fails to subvert the MAAN. The reason is that the inscrutabilities inherent in the NM militate against Huemer's argument. For example, consider that, in the NM, it is possible that every (or most) conscious species sufficiently advanced to create life-like simulations (be they computer simulations or brain-in-vat ones) are also so mentally and physically advanced—meaning so sheltered, protected and free of physical hardship—that they view something like an early 21st century life as extremely exciting given its nascent technology mixed with its still-existent need to physically work, to reproduce via actual copulation, to act as a parent, etc. This is similar to how certain modern individuals find their day-to-day existence so insulated and anodyne that they chose to engage in unnecessary (to them) physical behaviors of a more primitive sort, like bow hunting dangerous animals or rock climbing without any protection. Thus, perhaps an early 21st century life (or something close to it) is precisely the type of fully immersive simulation that simulation-creating species within the NM would want to experience, and it would therefore be the main type of simulation that they would create (remember, they could do so for their own benefit and enjoyment). Or perhaps they do so for educational purposes, keeping a simulation of every century running for historical and research purposes. Or perhaps such species routinely create multiple different simulations (or multiple long-term simulations that evolve

on their own), so it is likely that one similar to our world would exist. Or maybe they have an overwhelming interest in "bland" simulations like ours, and so that is what they create. Or maybe they even determined that, far from being bland, early 21st century life is one of the most exciting periods ever: one can still fight in wars, play extreme sports, be at the forefront of developing new technologies, create globe spanning businesses, enter politics, lead protest movements, become an internet celebrity, direct movies, create new philosophical arguments, etc. So, given such excitement, a world like ours could be the precise type of simulation that would be sought after.

Additionally, the number of simulations that exist in the NM is also relevant here. For instance, if an advanced species randomly but continuously created any possible life-like and coherent simulation—perhaps their technology is so advanced that it is simple for them to do so—then a simulation like that of our world would very likely exist at some point.

Now, it is not being argued that any of the above claims are true or certain. Rather, the point is that the probabilities are inscrutable. If an NM exists, we have no idea of the psychological makeup of other species in the NM (especially technologically advanced ones or ones who have become cosmic-designers); nor do we know the types of simulations that they would likely create, or the technology that they have to do so (as noted, maybe creating simulations or brains-in-vats is extremely easy given their level of technology). Indeed, why would we even expect to make any coherent predictions about what other conscious species in the NM would or would not create? Our intuitions are no guide in such a case.

Ultimately, Huemer's (2016, 1032) contention that skeptical scenarios provide "an extremely poor explanation of sensory experience" and can thus be rejected in favor of a normal scenario does not work against the MAAN, for in the NM, it is actually inscrutable whether skeptical/problematic scenarios are good explanations of sensory experience or not. And so, given a NM, agnosticism is still the warranted position.

*Simplicity*

Simplicity considerations also offer no help to the NM-positing naturalist in avoiding the skeptical consequences of the MAAN. First, that type of naturalist is the one using the NM to avoid the fine-tuning design inference, so she cannot just remove the NM from her ontology to make things simpler. Second, in terms of its primitive entities, features, or principles—meaning entities, features, or principles that are not susceptible to further explanation, and where other entities, features,

and principles are fully explained by the earlier primitives (Oppy 2013, 6)—a NM with problematic scenarios (or the potential for them) is not positing anything additional than a NM without them; at their fundamental level, both types of NMs are the same, so the latter is no simpler than the former. And if a naturalist claimed that a NM without even the possibility of problematic scenarios is simpler than one with that possibility, such a claim would not only be difficult to defend, it would arguably be *ad hoc,* for on naturalism (and thus on a NM) such problematic scenarios seem entirely possible. Thus, even if this claim was accepted for the sake of argument, any gain in simplicity would be counterbalanced by a loss of internal coherence due to the positing of this *ad hoc* claim.[10]

*Experience, Intuition or Seemings*

Since our experiential evidence would be the same whether we were in a problematic scenario or not—just as Bostrom noted concerning Big Worlds—and since Bostrom's solution to this problem was already addressed, then experiential evidence offers no means to counter the MAAN (nor can experiential evidence help determine the ratio of normal to problematic scenarios in the NM, since we have no experiential access to the other universes or cosmic zones in the NM).

Intuitions also cannot counter the MAAN, first because, if a NM exists, then our intuitions are arguably a very poor guide to what is possible in the NM, and second, because it cannot simply be assumed that our intuitions are not being tampered with in the MAAN. After all, if we posit a NM, then we could currently be in a problematic scenario where we have been programmed or created to have inaccurate intuitions; and since we have no idea what type of scenario we are in within the NM, then it is inscrutable whether our intuitions are accurate or not. Consequently, appealing to intuitions is unfruitful.

But what of "seemings"—the idea that if something *seems* to be some way to a person, then that person should take it to be such unless they have a defeater for that seeming. Since we *seem* to inhabit a normal scenario, then we should assume that we are in such a scenario until and unless we have a defeater for that seeming. The problem with this approach is that the MAAN is a defeater for such seemings. For consider that if we posit that we are in a NM, then we know that 1) problematic scenarios are entirely plausible on all types of NMs, and that 2) in certain NMs (like infinite ones), problematic scenarios are occurring, and that 3) we have no idea what

[10] See Keas (2018, 2770–2771) for an explication of why internal coherence is a theoretical virtue for a posited theory or explanation.

type of NM we are in or the exact number of problematic scenarios that exist in that NM, and finally that 4) our seemings would be the same as they are now, whether we were in a problematic scenario or not. For instance, if we were recently created by a cosmic-designer with false memories, then those memories would seem accurate, though they would not be, while our sensory seemings would be accurate. But which seemings are accurate and which are not would be inscrutable. But since it is inscrutable whether we were created by such a cosmic-designer, or if any other problematic scenario is the case, then it is also inscrutable whether any of our seemings are accurate or not. So in such a situation, we have a reason to doubt our initial seemings, and thus agnosticism about our seemings would be the rational position to take.

Moreover, even if it is assumed that our intuitions/seemings are accurate, a tension arises in appealing to them to counter the MAAN. This is because, when I consult my own intuitions/seemings, they tell me that the MAAN is correct. Indeed, it intuitively seems to me that if I take myself to be living in a NM where problematic scenarios are eminently plausible or actually occurring, but with a frequency that is inscrutable to me—meaning that the probability that I am in such a scenario right now is either inscrutable or is 50% (if I am in a type of infinite NM)—then I should be agnostic about whether or not I am currently in such a scenario, and thus I should be agnostic about the reliability of my cognitive faculties. So, even if an appeal to intuitions/seemings is used to counter the MAAN, a conflict between different intuitions/seemings occurs, and it is inscrutable which intuition or seeming—the one that points to the reliability of my cognitive faculties or the one that points to the soundness of the MAAN—should take precedence over the other.

An objector might retort, however, that problematic skeptical scenarios (like Descartes' demon) are always possible, and yet we do not take them seriously, so why are problematic scenarios a worry for an NM-positing naturalist. The difference, though, is that, in non-NM cases, such problematic skeptical scenarios are treated as mere possibilities—essentially thought experiments. By contrast, if a NM is posited, then such skeptical scenarios become entirely plausible, or are actually occurring in the NM, and are occurring with a frequency that is unknown, but could be extremely high. This would be as if a person posited a world that made it entirely plausible, not merely possible, that something like Descartes' demon, or multiple Descartes' demons, actually existed. Given such a world, the skeptical threat posed by such demons would have a sufficient "air of reality" that it would need to be seriously considered. This is why the situations are different, and why agnosticism is warranted in the case of the NM, but not when skeptical scenarios are merely possible, but not plausible.

But perhaps the above answer is not sufficient. In that case, a proponent of the MAAN could appeal to the principle of indifference—a principle that, though problematic, is still used and arguably warranted in various cases of ordinary reasoning—to contend that since the probability that an inhabitant of the NM is in a problematic scenario is unknown, then we should assign an equal probability to the claim that the naturalist is in a problematic scenario versus a normal one. But in that case, the probability is 50% for each. Yet, just as in the case of certain infinite NMs, a 50% probability that a naturalist is in a problematic scenario offers no aid to the naturalist, as in that case, agnosticism is still the warranted position from a rational perspective.

*A Theistic* Tu Quoque

While the MAAN argues against a *naturalistic* multiverse, it is not necessarily an argument against the multiverse itself. Thus, if naturalism is dropped and a different worldview—like theism—is adopted, then a multiverse could still be held. However, a naturalist might argue that the problems noted above would still occur given a theistic multiverse, so why should naturalism be dropped if other views will experience the same concerns? Yet it is questionable if this is the case.

First, on naturalism, the types of theories of mind that make possible conscious simulations, brains-in-vats, etc. are much more likely. Second, on naturalism, there is nothing outside the multiverse to prevent such problematic scenarios from occurring. But in a theistic multiverse, God could ensure that there are no problematic scenarios or even the possibility of them. For example, by creating an immaterial aspect to the mind, God could ensure that conscious sims or brains-in-vats (or BBs) are impossible. Alternatively, even if such problematic scenarios were possible on theism, God could create the multiverse in a way that such situations would never occur in practice (for instance, by creating a multiverse where, through His omniscience, God knows that no species will ever reach the technological sophistication necessary to create conscious sims). In the same way, God could prevent the existence of world-creating "designer-gods." He could ensure that dying black holes or thermal fluctuations (or whatever other physical processes) never produce BBs or freak observers. And God could guarantee that every evolutionary process in the multiverse produced organisms with reliable cognitive faculties. In essence, theism has the resources to overcome the sort of problematic multiverse scenarios that naturalism does not.

Furthermore, more robust forms of theism, like *Christian* theism (CT), imply that individuals would be created with reliable cognitive faculties. For instance, in a CT

multiverse, God would have still created beings in his image—i.e., the image of an undeceived, knowing being. Additionally, on CT, God desires his conscious creations to know creation directly, and to know about Him and His past actions in the world—like miracles—in order to make conscious and informed choices about whether to choose to love and worship Him or not. Moreover, God is not a deceiver, and to allow His creatures to exist in problematic scenarios—for instance, to allow them to exist in a brand-new universe that nevertheless has the false appearance of age—would be to deceive them in a significant way. Finally, genuine moral choices are crucial to CT, and such choices arguably require reliable cognitive faculties. Ultimately, as Slagle (2023, 173–174)—in the context of the same objection, but concerning the EAAN—notes:

> For the theist to avoid a defeater for R [that his cognitive faculties are reliable], it is enough to say T+ [something like CT] implies R. We do not have to say it *logically entails* R . . . . The claim that a perfectly loving, rational, and powerful being created our cognitive faculties implies R, but it does not and need not give us absolute assurance. It is enough that it does not produce a defeater for R like N [naturalism, or in this case, the NM] does.

Finally, perhaps all the above is incorrect and the multiverse is a problem for theism. In that case, the theist can simply drop the multiverse. But using this option is much easier for the theist then it is for the naturalist, because if the latter does so, the fine-tuning problem arises again, which the naturalist must then counter with something other than the NM.

## Conclusion

If the above reasoning is correct, and thus if a NM-positing naturalist should be agnostic about the reliability and veracity of her cognitive faculties, and has no reason to reject that agnosticism, then she faces an interesting choice (as long as she wants to maintain a rational position, not merely a pragmatic one). First, for such a naturalist, but one who is willing to drop the NM rather than naturalism, such a naturalist must find a different tool than the NM to address the design inference generated by fine-tuning. Second, for the NM-positing naturalist who is wed to the multiverse more than naturalism, such a naturalist must arguably reject naturalism and embrace a worldview more conducive to rationality in a multiverse—a worldview like theism, for instance—thus avoiding the problematic issues that arise

in a NM. But whichever option is chosen, prospects do not look good for a naturalist who seeks to avoid a fine-tuning design inference via the multiverse.

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