

THE MULTIVERSE THEODICY MEETS POPULATION ETHICS

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The multiverse theodicy proposes to reconcile the existence of God and evil by supposing that God created all and only the creation-worthy universes and that some universes like ours are, despite their evils, creation-worthy. Drawing on work in population ethics, this paper develops a novel challenge to the multiverse theodicy. Roughly, the challenge contends that the axiological underpinnings of the multiverse theodicy harbor a 'mere addition paradox': the assumption that creating creation-worthy universes would always make the world better turns out to have morally repugnant consequences akin to those of the assumption that adding worthwhile lives to a population would always make the overall welfare of the population better. Further, the challenge leverages this difficulty into an argument against God's having created all and only the creation-worthy universes, and hence against the multiverse theodicy. Responses to this challenge are considered but found wanting, largely because of commitments of the multiverse theodicy that have no analogs in population ethics.

Keywords: problem of evil; repugnant conclusion; mere addition paradox; multiverses; theodicies; multiverse theodicy; theism; population ethics; divine hiddenness; problem of scale

1. Introduction

A Creation Myth. In the beginning, the world was formless and replete with uncreated universes. On the first day, God created all the perfect universes. He saw that his creation was good, but that it could be made

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better through the mere addition of slightly imperfect universes. So, on the second day, he created them as well. Again, he saw that his creation was good, but could be made better through the mere addition of some even more-imperfect universes. And so God worked, creating ever more universes, each day creating slightly more-imperfect universes than the last. Having created all the universes worthy of creation, on the final day God rested. God saw the multiverse that he had made, and behold, it was indeed very good.

A universe is worth creating if its existence would improve upon the void. Some universes merit creation because they contain goods but no evils. Others merit creation despite their evils. For the god of this myth, this is a distinction that ultimately makes no difference: eventually, in his efforts to improve the world, he creates every universe worth creating. His efforts therefore unleash evil upon the world. Just as evil is latent within the myth, so too is a candidate solution to the problem that evil poses for theism.

On one evidential formulation, the *problem of evil* is that of reconciling *theism*—the claim that our world was created by God, an entity that is unsurpassable in knowledge, goodness, and power—with the evils of our universe (U) that seem to provide strong evidence against theism (e.g., see Mackie 1955; Plantinga 1974; and Benton et al. 2016). This paper concerns the *multiverse theodicy*.¹ On it, the evils in U do not provide strong evidence against God because—with reasonable likelihood conditional upon theism—God would create a “multiverse” featuring many creation-worthy universes. Indeed, it is exactly those universes that he would create. That is, he would create the multiverse² (M) containing all and only the creation-worthy universes.³ And since U is, despite its evils, creation-worthy, God would create U. Hence, according

1. For theorists who advocate or express sympathy with multiverse theodicies, see Forrest (1981), Hudson (2005), Leslie (1996: 177), McHarry (1978), Megill (2011), O’Conner (2008), Turner (2003); cf. Chalmers (2022: Ch. 18), Kraay (2010a), Lewis (1986), and Parfit (1991). For advocates of positing a multiverse from a theistic perspective who do not rest their case on the problem of evil, see Almeida (2008), Collins (2007) and Kraay (2011); cf. Leslie (1996). For critics, see Almeida (2008), Draper (2004), Kraay (2013), Monton (2010), and Perkins (1980). For discussion of how a multiverse would fit with prominent classical forms of theism, see Rogers (2020).

2. Or one such.

3. Here and throughout we understand worlds as metaphysical possibilities at which every proposition has a truth value, universes as maximal spatiotemporal systems, and multiverses as worlds that include more than one universe. Our talk of God creating worlds and universes should be understood as allowing that worlds and universes may contain entities that God does not create, such as God or abstracta—see, e.g., Zimmerman (2019: 447). Those who think that God can create only some worlds or universes can understand the discussion as restricted to those. We invite those who take God to select among creation options that leave world details up for grabs to recast our arguments in terms of those options and their expected value or choice-worthiness rather than worlds and universes and their value—cf. (2019: 450).

to this theodicy, the evils in U do not provide strong evidence against theism. In this fashion, the multiverse theodicy seems to promise an elegant solution to the problem of evil.⁴

The multiverse theodicy is both more promising and less promising than it initially appears—more because it allows theists to solve the problem of evil and a host of other problems for theism in a single theoretical stroke and less because it is subject to a neglected challenge. Or so we will argue.

Here's the plan. In §2 we show how the multiverse theodicy yields a unified treatment that encompasses not only the problem of evil but also the problems of ignorance, surpassability, and scale. Given this result, the multiverse theodicy deserves serious consideration on the part of theists. But trouble looms. The multiverse theodicy turns on the thought that mere addition of creation-worthy universes leads to a better world (§3). While this thought is *prima facie* plausible, it is also uncomfortably akin to an analogous assumption in population ethics, namely that merely adding worthwhile lives to a population improves it. That assumption is also *prima facie* plausible. However, largely due to the work of Parfit (1984), it is recognized to lead to extremely counterintuitive consequences by way of what is known as the Mere Addition Paradox. Central among these consequences is the *Repugnant Conclusion* that “compared with the existence of many people whose quality of life would be very high, there is some much larger number of people whose existence would be better, even though these people's lives would be barely worth living” (Parfit 2017: 124). After rehearsing the Mere Addition Paradox (§4), we will argue that an analogous problem tells against the multiverse theodicy as a solution to the problem of evil (§5). Further, we will leverage the problem into an argument against God's having created M (§6). This will tell against the multiverse theodicy as a treatment for any theistic ailment whatever. Finally, we'll identify responses for salvaging the multiverse theodicy and argue that they come at a cost (§7–8).

4. More briefly, the multiverse theodicy is equivalent to:

U's evils do not provide strong evidence against God because (i) it is reasonably likely conditional upon theism that God would create M, and (ii) U is creation-worthy and therefore contained in M.

The threshold for reasonable likelihood is whatever it needs to be for God's creation of M (on the assumption that M contains U) to suffice for U's evils to not provide strong evidence against theism. Thus, 'reasonably likely' inherits the vagueness of 'strong evidence'. So formulated, the multiverse theodicy automatically precisifies in whatever way is required by a chosen precisification of the problem it is designed to solve.

2. The Theistic Potential of the Multiverse Theodicy

The problem of evil has a simple form: that of reconciling theism with the observation that U has a feature that seems to provide strong evidence against theism. While the problem of evil is the most discussed problem of this sort, it is but one member of a family of problems for theism of that form.

Another is the *surpassability problem*.⁵ Evidently, U is surpassable: some possible universes are better than it. On the face of it, a surpassable universe is much less likely conditional on theism than its negation. After all, supposing that an unsurpassable being were to create a universe, plausibly she would opt for an unsurpassable universe. Absent such a being, there is no reason to suppose such a universe would exist. Yet U seems surpassable. Room for improvement seems all too easy to find. Hence, the difficulty of reconciling theism with the observation that U's surpassability seems to provide strong evidence against theism.⁶

A third problem in this family is the *problem of scale* (see Everitt 2004: ch. 11). On the assumption that an unsurpassable being created U, we would expect it to be created for a moral purpose and we would expect its purpose to be reflected in its organization. However, this is not what we find. Instead, we find ourselves in an unimaginably vast universe in which morally significant features are confined to cosmologically miniscule patches of spacetime. This would be much less surprising if the morally significant features of U arose by chance in a godless world. Hence, the difficulty of reconciling the scale of U with theism.

Finally, there is the problem of *divine hiddenness*.⁷ Theism entails the existence of a being that could have created a universe with far more evidence of theism than we actually find. Yet evidential reticence is not a feature we would expect in such a being. After all, if such a being exists, this is an important truth, knowledge of which is preferable to ignorance. Because the evidence for theism is not stronger, the desires of many to know that or whether theism is true are frustrated. The hiddenness of God seems to incur these costs and more besides without compensating benefits. Thus, according to this problem, divine hiddenness seems quite unlikely conditional upon theism. In contrast, if theism

5. E.g., see Quinn (1982), Rowe (1993), Sobel (2004), and Kraay (2007). For an argument that every world is surpassable and hence that God did not have reason to create an unsurpassable world, see Swinburne (1979). For a case for thinking that the Mere Addition Paradox puts pressure on theists to reject Swinburne's argument, see Grover (1999). For defenses of the compatibility of God's existence and perfection (or related unsurpassable features) with his not having created the best world he could even if there is such a world, see Adams (1972), Leftow (2005), and Zimmerman (2019).

6. The surpassability problem is also known as the problem of no best world—see Kraay (2010b).

7. E.g., see Schellenberg (1996; 2010), the essays in Green and Stump (2015), and Rea (2018).

is false, there is every reason to expect a dearth of evidence in its favor. So, according to this problem, divine hiddenness seems to provide strong evidence against theism.

The foregoing problems are distinct but not entirely independent. Indeed, there is significant overlap between them. The problem of divine hiddenness can be pressed by contending that the evidence for particular solutions to the other problems is less abundant than one might expect on theism. Similarly, divine hiddenness is arguably a morally problematic feature of our world that bolsters the problem of evil. And the problems of evil, scale, and divine hiddenness serve to bolster the problem of surpassability by highlighting features of the world that apparently render it surpassable. But the problems can come apart. A theist who takes God's existence to be manifestly revealed thereby escapes the problem of divine hiddenness. But she must still face up to each of the other problems. If it turns out that every universe is surpassable, it will cease to be surprising conditional upon theism that we find ourselves in a surpassable universe. Nonetheless, the problems of evil, scale, and divine hiddenness would remain.

Members of this family of problems are often raised and addressed one at a time. Faced with them as a collective body, a natural hope for the theist is that they will admit of a unified treatment. Of course, there are piecemeal alternatives. For instance, the theist could opt for a free will theodicy to solve the problem of evil, the no-best-world solution to solve the surpassability problem, pansychism to solve the problem of scale, and a not-so-hidden-after-all solution to the problem of divine hiddenness. However, stringing together disparate solutions to these problems invites charges of ad hocery. Hence the theistic appeal of finding a unified treatment.

The prospects for such a treatment are relatively unexplored. But the literature does offer materials for such a solution. Notably, there is the skeptical theist strategy for solving the problem of evil (see Dougherty 2016 for an overview). While the strategy is variously implemented, the key idea is that because we are epistemically impoverished in a way that precludes us from having strong expectations about what sorts of evils God would permit, U's evils do not provide strong evidence against theism. Skeptical theism straightforwardly extends to yield a unified treatment not only of the problem of evil but also its brethren. On the resulting proposal, the features cited as providing strong evidence against God—evil, the scale of morally significant features relative to that of the cosmos, surpassability, and divine hiddenness—do not in fact do so because we lack the sort of access to God's mind and reasons that would be required to form strong expectations about whether such features would manifest in God's creation.

Despite its promise as a unified treatment for these problems, skeptical theism is not altogether satisfying. Irrespective of its plausibility, its skeptical dimension leaves us without positive understanding of the sort we aspire to in

solving philosophical problems. Thus, there is reason to seek a non-skeptical but unified treatment. To find such a treatment, one need look no farther than the multiverse theodicy. The multiverse theodicy solves the problem of evil by noting that God would create *M*, in which *U*'s evils are to be expected. Likewise, the multiverse theodicy solves the other problems under consideration by noting that God would create *M*, in which case it is to be expected that there will be a surpassable universe in which God is hidden and morally significant features are confined to tiny pockets of spacetime.

In a bit more detail, suppose in accordance with the multiverse theodicy that God would create *M*. Then God would create all and only the creation-worthy universes, in which case he would create *U* if and only if it is creation-worthy. Plausibly, *U* is creation-worthy: despite containing the features cited by the problems of evil, surpassability, scale, and divine hiddenness, *U* improves upon the void. Thus, given that God would create *M*, these features do not provide strong evidence against theism, as theism renders it reasonably likely that a universe would possess these features.

Each of the foregoing problems can be recast as an explanatory challenge for theists. Why would God allow *U*'s evils? Why would God create a surpassable universe? Why would God create a universe with so much wasted space? Why would God create a universe in which he is hidden from his creation? The answer to the challenges offered by the (extended) multiverse theodicy is as follows. God would create such universes—ones with horrific evils, substantial room for improvement, vast regions devoid of moral significance, and a conspicuous dearth of evidence for theism—because some of these universes are worth creating and he would create every universe that is worth creating.

The multiverse theodicy also offers a general diagnosis of what goes wrong in attempts to level these problems against theism. Each of these problems cites the fact that *U* has a certain feature as strong evidence against theism. In each case, the cited feature would be difficult to reconcile with theism if *U* were the only universe, even given that *U* is creation-worthy. In contrast, given that *U* is creation-worthy and that God would create *M*, a universe with these features is to be expected on theism.

3. The Axiological Underpinning of the Multiverse Theodicy

While the multiverse theodicy offers an explanatorily unified treatment of a range of problems for theism, the theodicy itself suffers an explanatory shortcoming that requires attention. It assumes that God would create all the creation-worthy universes. But why would God do that?

Proponents of the theodicy could answer that this question has no answer—it is just a brute fact about God that he would create all the creation-worthy universes. This answer is unsatisfying: it is hardly an improvement on the non-solution to the problem of evil that it is a brute fact about God that he would create a world containing evil. Alternatively, a theist might instead answer that, while it is not a brute fact that God would create all the creation-worthy universes, God’s reasons for doing so are inaccessible to us. The trouble with this response is that if one is going to resort to skeptical theism to solve the problem of evil (and its ilk), one may as well do so without first taking a detour through the multiverse theodicy.

A better answer for the proponent of the multiverse theodicy is that God would create a world with all the creation-worthy universes because adding creation-worthy universes to a world is a way of making it better.⁸ As a being of unsurpassable goodness, God would therefore create all such universes, lest he be surpassable by a being that would create more of them and hence a better world. In other words, in order to meet the explanatory demands of the multiverse theodicy, its proponents have reason to accept:

Universe Mere Addition: For any creation-worthy universe c and any world W not containing c , adding c to W yields a better world than W .

Here’s some notation that will prove useful in what follows. We’ll use ‘>’ and ‘≥’ to mean better than and better than or just as good as, respectively. Likewise, we’ll use ‘<’ and ‘≤’ to mean worse than and worse than or just as good as, respectively. And we’ll use ‘+’ and ‘-’ to express the summing and subtraction operations that output worlds by operating on worlds and (sets of) universes. Thus, Universe Mere Addition is equivalent to the claim: for any creation-worthy universe c and any world W not containing c , $W+c > W$.

4. Interlude: the Repugnant Conclusion

To set the stage for our challenge to the multiverse theodicy, we will now rehearse Parfit’s (1984) Mere Addition Paradox and Repugnant Conclusion.

To generate the Mere Addition Paradox, we start by imagining a world, A , that contains a population of, say, ten billion people with a very high level of

8. We assume here and throughout that worlds and universes admit of axiological comparisons. N.B. we do not assume that they are fundamental bearers of value. Following Kraay (2018: 4), we regard axiological treatment of universes, as well as worlds, as a sort of schema that can be fleshed out in different ways, e.g., in terms of the value of populations of moral patients they contain.

welfare. Compare A with a different world, $A+$, that contains two populations. One of these populations is as large as the total population in A , and it consists of people who have the same high quality of life as the population of A . The second population in $A+$ consists of a number of people who are slightly less well off, but who still have lives that are very much worth living. Evidently, $A+ > A$, as $A+$ results from merely adding to A lives that are worth living.

Now imagine a third world, B . B has a population equal in size to the total population in $A+$. But in contrast to $A+$, B contains an egalitarian distribution of welfare. The average amount of welfare in B is between the amounts in A and $A+$. Thus, B inhabitants are slightly better off than some $A+$ inhabitants and so have lives that are very much worth living. Intuitively, $B > A+$: B has a higher average and total welfare than $A+$, and if equality counts for anything, it also has the virtue of being more egalitarian. Given the transitivity of the better than relation, B —a world with a larger population that is slightly worse off than the people in A —is also better than A .

By iterating this reasoning, we can construct a series of worlds each with a larger population whose members are slightly worse off than the members of the population in the previous world in the series. By the lights of that reasoning, each world will be better than the world before it, and therefore, better than A . Eventually, we will reach a world Z with a massive population, each member of which has a life that is just barely worth living. This yields an instance of the so-called Repugnant Conclusion: $Z > A$.

The Mere Addition Paradox has spawned a large literature of attempts to avoid the Repugnant Conclusion. We will encounter some of these in the course of answering objections in §7–8. For now, we simply note that a crucial assumption that leads to the Repugnant Conclusion is that merely adding worthwhile lives to a world improves it. There is a striking similarity between this assumption and Universe Mere Addition. In the next section, we will see how the analogy runs deeper and to the detriment of the multiverse theodicy.

5. The Repugnant Conclusion Part II: An Explanatory Problem for the Multiverse Theodicy

We will now argue that a parallel problem afflicts Universe Mere Addition. The problem will indirectly tell against the multiverse theodicy insofar as it relies on Universe Mere Addition to explain why God would create all the creation-worthy universes. In developing this problem, we will again be comparing different worlds. Here, the comparison will involve creation-worthy universes rather than worthwhile lives.

To begin, we will grant the theist that U is creation-worthy. Even so, it remains clear that some possible universes are much better than ours.⁹ For example, some possible universes have far more good and far less evil than U . So, U is surpassable. Next, consider an arbitrary “pure” world P consisting of (finitely) many unsurpassable universes. Just as A is the world containing people with high welfare levels from which the march to Repugnance proceeds in the original argument, P is the world with universes of high value from which the march proceeds in this argument.¹⁰

The next world in the series is $P+U$, which consists of all the universes in P plus our universe. Given Universe Mere Addition, $P+U > P$. Now, there is an average universe value for the universes in $P+U$. Let us fix another value, v , that is just slightly higher than that value, so any universe with v is significantly better than U but slightly worse than each unsurpassable universe. Next, consider a different world, Q , that has the same number of universes as $P+U$, but each with value v .

Intuitively, $Q > P+U$. After all, Q has higher average and total value than $P+U$. And, if equality counts for anything here, Q also has the virtue of being more egalitarian. Given the transitivity of the better than relation, it follows that $Q > P$.¹¹

Now consider another world, $Q+U$ that consists of Q 's universes and our universe. Given Universe Mere Addition, $Q+U > Q$. Iterating this reasoning, we can continue to go down the alphabet, constructing a series of slightly bigger and better worlds. Eventually, we will end up with a world, Z_U , chock-full of universes, each of which is just slightly better than U . According to this reasoning, and assuming Universe Mere Addition, $Z_U > P$. That is, a world replete with universes only slightly better than ours—and hence with the many evils they contain—is better than a world consisting of many unsurpassable universes.

9. Proponents of the multiverse theodicy should grant this since the multiverse theodicy would lose much of its appeal on the contrary assumption that U is unsurpassable.

10. P is stipulated to consist of *finitely* many unsurpassable universes because the averaging operation invoked in this march to repugnance may be undefined in the infinite case. A parallel point applies to the argument for the originally repugnant conclusion, where it is stipulated that A has a finite number of people. If the averaging operation is well-defined in the infinite case, these stipulations could be relaxed. However, the stipulation that P contains unsurpassable universes would need to be revised if no such universes are possible. In that case, it would suffice for P to consist of finitely many universes above some threshold of goodness much higher than U 's goodness.

11. One response to the Mere Addition Paradox has been to question the transitivity of the better than relation (Temkin 1987; 2012). Likewise, one could respond to the challenge we are raising for the multiverse theodicy by questioning the transitivity of that relation. However, we think that the transitivity of the better than relation is intuitively compelling, and we are persuaded by arguments for it (Huemer 2008). Further, it is not clear that rejecting transitivity suffices to block the paradox (Arrhenius 2004). So, we set this response aside in what follows.

We submit that this result is morally repugnant and, like the original Repugnant Conclusion, implausible. To appreciate the implausibility of this conclusion, consider one natural (though not mandatory) way of fleshing out P and Z_U : whereas P consists of universes that are replete with flourishing people who are free of suffering, Z_U consists of universes containing wars, genocides, famines, etc. that are just as bad as those in U but which each principally differ from U by containing one fewer small evil—perhaps Reviewer #2 unfairly rejects one fewer paper in each of these universes than in U. The assumptions in play, aside from Universe Mere Addition, seem innocuous. So, we take the argument to render Universe Mere Addition implausible; likewise for the multiverse theodicy insofar as it relies on Universe Mere Addition to meet the explanatory challenge we encountered in §3.¹²

6. An Argument Against the Multiverse Theodicy

We have seen that the failure of Universe Mere Addition exacerbates an explanatory problem for the multiverse theodicy. We will now leverage the failure of Universe Mere Addition into a more direct challenge to the multiverse theodicy as well as other multiverse solutions to problems for theism: we will argue that God would not have created M.

Let's start by supposing that the reasoning in the previous section is correct. In that case, not only is Universe Mere Addition false; it is also falsified by a world that contains only creation-worthy universes. To see this, recall that the reasoning in the previous section started with a "pure world" of unsurpassable universes and reached a worse world (the one Universe Mere Addition repugnantly entailed to be better) via the mere addition of universes that are better than U. Clearly, unsurpassable universes are creation-worthy, given that U is. Furthermore, since we are granting that U is creation-worthy, and since every additional universe was better than U, every universe invoked during the process was itself creation-worthy. But since the failure of Universe Mere Addition happens at some point in this chain, there must be a step at which adding a creation-worthy universe to a world consisting of only creation-worthy universes resulted in a morally worse world. That is, mere addition failure happens at a world consisting of only creation-worthy universes:

12. If this conclusion does not seem repugnant enough, the same sort of reasoning may be used to derive an even more repugnant conclusion by substituting a barely-worth creating universe for U throughout the argument. The resulting repugnant conclusion would then be that a world full of universes that are only slightly better than barely worth creating is better than a world consisting of many unsurpassable universes.

Universe Mere Addition Failure: There exists one world S (S' for susceptible to mere addition failure) and one set of universes f such that:

- (1) S consists of only creation-worthy universes,
- (2) f is itself creation-worthy,
- (3) f is not in S , and
- (4) $S+f < S$.

To show that God would not create M , the argument appeals to two principles. The first concerns how adding universes to worlds worsens those worlds:

Invariant Worsening: For any worlds X , Y , and any set of universes u :

If u is not in X or Y and $X+u < X$ and $X \leq Y$, then $Y+u < Y$.

If u is in X and Y and $X < X-u$ and $X \leq Y$, then $Y < Y-u$.

Less formally, Invariant Worsening says that if including universes in a world makes it worse, then including them in an equally good or better world will make it worse too. Invariant Worsening captures two intuitive thoughts as they apply to universes and worlds. One is that we'd expect a feature that worsens one thing to also worsen things that are as good as or better than that thing. The other is that we'd expect a feature whose removal from one thing improves that thing to be such that its removal also improves things that are just as good or better than that thing. For instance, we'd expect spoiled vegetables that worsen one pizza to also worsen pizzas that are better than the first by having superior non-vegetable ingredients. And we'd expect that if removing one subpar topping from a mediocre pizza improves that pizza, then removing that topping from an excellent pizza improves that pizza as well.¹³

The second principle is:

No Creative Worsening: For any world W , if God created W , there is no set of universes u in W such that $W < W-u$.

No Creative Worsening says that God will not create universes that make the world worse. This is a very weak principle. It does not require God to create an unsurpassable world; nor does it forbid God from creating worlds containing evil. It is very plausible that a maximally benevolent God with full knowledge of the moral consequences of his actions would satisfy No Creative Worsening. We will hereafter take it as granted.

13. Another motivation for Invariant Worsening is that it is supported by some of the options for avoiding the Repugnant Conclusion. Specifically, Invariant Worsening holds at least for worlds of finite value on the averaging view, compromise theories, and critical level views. These views will be formulated and discussed in §8.

Perhaps surprisingly, Universe Mere Addition Failure, Invariant Worsening, and No Creative Worsening jointly entail that God did not create M. Very roughly, that's because: Universe Mere Addition Failure ensures that creating a certain creation-worthy universe can make the world worse. Given Invariant Worsening, such a universe makes M worse. No Creative Worsening then kicks in to ensure that God would not have created M.

Before proving this result, let's review our cast of characters. For convenience, we'll treat S as an arbitrary world containing only creation-worthy universes that is susceptible to worsening through mere addition; and we'll treat f as an arbitrary set of creation-worthy universes that would induce mere addition failure if added to S . Notice that since S consists of only creation-worthy universes, we know that the universes in S are a subset of the universes in M , the world containing all and only creation-worthy universes (including, of course, those in f). We can now construct a proof by cases as follows. Given Universe Mere Addition Failure, the cases to consider are:

1. S is not better than $M-f$
2. S is better than $M-f$.
 - a. M is worse than $M-f$.
 - b. M is not worse than $M-f$.

Let us consider each case in turn.

Case 1. Suppose that S is not better than $M-f$. Then by Invariant Worsening, adding f to $M-f$ results in a worse world (namely M). Thus, M contains a universe (namely f) that worsens it; so, by No Creative Worsening, God would not have created M .

Case 2a. Suppose that S is better than $M-f$ and that M is worse than $M-f$. Since M is worse than $M-f$, M contains a universe that makes it worse (namely f). Hence, by No Creative Worsening, God would not have created M .

Case 2b. Suppose instead that S is better than $M-f$ and that M is not worse than $M-f$. Then, since S is better than $M-f$ and S 's universes are a proper subset of $M-f$'s universes, $M-f$ contains a set of universes that worsen $M-f$, namely the one whose subtraction from $M-f$ yields S . Call that set of universe f^* . Since the universes in $M-f$ are a proper subset of those in M and $M-f$ contains f^* , M contains f^* too. But we are supposing that M is not worse than $M-f$. So, from Invariant Worsening and the fact that f^* makes $M-f$ worse, it follows that M is worsened by a set of universes it contains

(namely f^*). Hence, by No Creative Worsening, God would not have created M.

These cases exhaust the available options. Given Universe Mere Addition Failure, Invariant Worsening, and No Creative Worsening, God would not have created M on any of them, in which case the multiverse theodicy is mistaken in supposing that God created M.

7. Objections

Once No Creative Worsening is granted, there are two ways to block the foregoing argument: reject Universe Mere Addition Failure or reject Invariant Worsening. In this section, we describe some versions of these responses and explain why they don't work. In the next section, we will examine a different sort of response: concede that the argument succeeds and retreat to a fallback multiverse theodicy that is supposedly immune to it.

7.1 *Reject Universe Mere Addition Failure and Embrace Repugnance*

One response to the Mere Addition Paradox maintains that the Repugnant Conclusion is not repugnant after all (see Huemer 2008; cf. Zuber et al. 2021). According to the response, lives that are barely worth living are much better than the lives we mistakenly suppose to be barely worth living when we regard the Repugnant Conclusion as repugnant (see Cowie 2017; Ryberg 1996; and Tännsjö 2002). Once we come to recognize that barely worth living lives are relatively privileged, it ceases to seem repugnant that large populations consisting of many people with such lives would be better than smaller populations with even better lives.

A proponent of the multiverse theodicy could co-opt this response. She could claim that creation-worthy universes are much better than we are initially inclined to think. Specifically, she could claim that the universes slightly better than ours are not creation-worthy, since creation-worthiness is a higher bar than we initially thought. Thus, although it is repugnant to suppose that the world chock-full of such universes would be better than the world consisting of unsurpassable universes, this does not refute Universe Mere Addition.

However, if the bar for creation-worthiness is too high for universes slightly better than ours to clear, then it is too high for U as well. So while this response might succeed as a defense of Universe Mere Addition, it only does so by

implying that U is not creation-worthy, and therefore, not in M, contrary to the multiverse theodicy. Moreover, if U is not creation-worthy, then Universe Mere Addition does not even apply to it in a manner that helps explain why God created it. Thus, the response succeeds as a defense of Universe Mere Addition only if it precludes Universe Mere Addition from doing the explanatory work that the multiverse theodicy assigns it.

7.2 Reject Universe Mere Addition Failure and Appeal to the Person-Affecting Restriction

One strategy for avoiding the Repugnant Conclusion appeals to the (*comparativist*) *person-affecting view* that one outcome can be better or worse than another only if it is better or worse for someone, and one outcome can be better or worse than another for someone only if that person exists in both outcomes (see Narveson 1967 and Temkin 2012). On this view, the mere addition of worthwhile lives cannot make a world better or worse; hence, the march to Repugnance fails at the outset. Similarly, assuming that the only individuals who would be brought into existence through the creation of creation-worthy universes would not otherwise exist, the mere addition of a universe to a world cannot make it better or worse, entailing that Universe Mere Addition Failure is false.

The person-affecting view is subject to well-known difficulties,¹⁴ including that the view does not ultimately provide an escape from the Repugnant Conclusion (see Arrhenius 2009 and Holtug 2004). But even if we set these difficulties aside, the view is of no help to the multiverse theodicy. The trouble is that if the person-affecting view is true, no universe is such that its creation would make the world better, in which case, by definition, no universe is creation-worthy and there is no world M consisting of creation-worthy universes to which U could belong.

Admittedly, on the person-affecting view, U's creation also could not have made the world worse, and God would have had no reason to forgo creating it as part of a multiverse. Given the many more ways of creating U as part of a multiverse rather than as the sole universe, it would then not be surprising if God created U as part of a multiverse. Thus, the person-affecting view does lend to a multiverse-involving theodicy of sorts.

Whatever the plausibility of this suggestion, it is an alternative to rather than a defense of the multiverse theodicy for the simple reason it does not accord the multiverse any explanatory work in reconciling the existence of God and evil. Instead, it places the entire explanatory burden on the person-affecting view.

14. See Parfit (2017) for a recent critical discussion of person-affecting principles.

Indeed, the suggested reconciliation works just as well on the assumption that U is the only one as it does on the assumption that it is part of a multiverse.¹⁵

7.3 *Reject Invariant Worsening*

The remaining way to resist the argument is to reject Invariant Worsening. According to what is perhaps the most plausible version of this response, there are counterexamples to Invariant Worsening involving holistic effects. Consider: a topping (chocolate, say) that makes one pizza worse because it clashes with another topping (tomato sauce, say) needn't make a better pizza without the clashing topping worse. Similarly, maybe a universe that makes one world worse could do so only because of how it's related to other features of the world, features absent from some better worlds to which that universe could be added (cf. Parfit 1984: §144). If so, violations of Invariant Worsening loom.

An immediate reply is that if the value that U contributes to the world depends on how things stand in other parts of the world—ones with which U does not interact—then what should be done in U depends on phenomena that are causally isolated from U. But it is implausible to suppose that what should be done in U is hostage to such extrinsic matters.¹⁶ To overcome this reply and press the holistic effects objection, one needs to specify a holistic effect, say how it leads to violations of Invariant Worsening, and then explain how these violations block the argument. We do not know of any plausible candidates. However, let us head off a few suggestions.

First, it might be suggested that egalitarian considerations yield the wanted counterexample to Invariant Worsening. It seems plausible that the value a universe contributes to a world depends partly on how the universe affects equal distribution of goods in that world; and this depends not only on what goods the universe contains but also on what goods other universes in that world contain. Suppose this is right—how can we leverage these effects into violations of Invariant Worsening? Perhaps adding a great universe to an egalitarian world consisting of merely good universes would make that world worse by upsetting the egalitarian distribution of goods. And perhaps adding that universe to a better egalitarian world consisting of great universes would make that world better.

15. Of course, there is also the option of accepting Universe Mere Addition and its seemingly repugnant consequences without attempting to explain away their repugnance. While we regard this as an option of last resort for defending the multiverse theodicy, it is open to those who view it more favorably to regard our argument as establishing an interesting but not problematic constraint on theistic theorizing, namely that Universe Mere Addition is a concomitant of the multiverse theodicy, given Invariant Worsening and No Creative Worsening.

16. This is a variation of the “Egyptology” objection in the population ethics literature. See Parfit (1984: 420).

However, even if we grant the case as a counterexample to Invariant Worsening, it is not a counterexample that blocks the argument against the multiverse theodicy. To see this, recall Invariant Worsening's role in the argument: it ensures that a creation-worthy universe that induces mere addition failure will make M worse. But, as we have seen, mere addition failure arises in a process whose steps either add worse universes to worlds than those they already contain or else 'level and enlarge' worlds by replacing a set of universes that differ from one another in value with a larger set of universes that all have the same value—at no point in the process is an egalitarian distribution of a world upset through the addition of a better-than-average universe.

Moreover, it is unlikely that egalitarian considerations can ever yield relevant counterexamples to Invariant Worsening since M itself is an extremely inegalitarian multiverse. Or at least this is so on the extremely plausible assumption that there is much variation in what sorts of goods possible creation-worthy universes contain. Thus, egalitarian views will either entail that M contains universes that make it worse (and which are thus not created by God), or they will allow for egalitarian considerations to be easily overridden or outweighed.

Second, one might suggest interworld preference satisfaction as a type of holistic effect that can generate counterexamples to Invariant Worsening. For instance, perhaps a universe that induces mere addition failure when added to a certain world would nonetheless improve a much better world containing inhabitants who strongly prefer for such a universe to exist.

There are two problems with this suggestion. First, there is something perverse about claiming that a universe—and hence all the moral patients it contains—could be worth adding to a world only because doing so would satisfy other agents' preferences. Put differently, the suggestion invites familiar scruples about some forms of utilitarianism concerning their tolerance for utility monsters (see Nozick 1974) and the use of agents as mere means. Second, suppose we grant that such preference satisfaction can merit the creation of universes that would, if not for the preferences they satisfy, make the world worse. In that case, the multiverse risks redundancy as a posit that is supposed to help solve the problem of evil: why not suppose that God prefers for a universe like ours to exist and that the satisfaction of God's preferences generates enough good to outweigh the evils in our world? (We do not mean to suggest that that would be a plausible theodicy. Indeed, we think that it would be an implausible one and that this serves to reinforce the first problem with the suggestion under consideration.)

A final suggestion: a universe that induces mere addition failure in one world of finite value could be added to a better world that is infinitely valuable without making that world worse—in effect, the infinite value generated by the other parts of that world would prevent any (finite) disvalue of that universe from making the world worse.

Here are two difficulties with this objection to Invariant Worsening. First, the objection rests on the assumption that adding finite (negative) value to something of infinite value cannot affect that thing's value. This assumption is encouraged by the familiar way of modeling the aggregation of finite and infinite quantities in real analysis. However, the assumption violates plausible Pareto principles (see Zimmerman 2019: §5 and Vallentyne & Kagan 1997). And it has worrying consequences such as 'infinitary paralysis': if we are in a world of infinite value and our options are only of finite value, then all actions are on equal footing, for example, bringing about peace on Earth would make the world no better than would committing genocide (see Bostrom 2011). Moreover, the 'extensionist' program in axiology offers a method for ranking worlds with infinite goods of the same cardinality (see Bostrom 2011 and Vallentyne & Kagan 1997). Given such a ranking, adding a universe that makes one world worse by a finite amount may well make a world of infinite value worse in virtue of conferring that amount of disvalue. If so, Invariant Worsening will remain unscathed.¹⁷

Second, the assumption that adding finite (negative) value to something of infinite value cannot affect that thing's value sits uneasily with the multiverse theodicy. As we have seen, the multiverse theodicy needs to be accompanied by an explanation of why God created the universes in *M*. Presumably some of these universes only contribute finite value to the world. But if the world is of infinite value, then the assumption implies that the creation of these finite-valued worlds does not make the world better. This deprives the multiverse theodicy of the most natural explanation for why God created the universes in *M*, namely that doing so made the world better. An alternative explanation might be that once God created an infinite good, he was free to create anything of finite value he wished (since this would make no difference to the world's value) and he just so happened to create the universes of finitely valuable creation-worthy universes in *M*. Aside from being implausible, this sort of explanation also deprives the multiverse of any explanatory role in solving the problem of evil. For given that God could create a universe containing an infinite good, if such an excuse gets God off the hook for finite evils in a multiverse, it could also get him off the hook in a single-universe world. On the other hand, if the world is of finite value, then the argument against God creating *M* can be recast by restricting Invariant Worsening to worlds of finite value. Since the proposed counterexample essentially relied on (supposed) facts about aggregation involving infinite quantities, the objection would not extend to the resulting argument.

We have not attempted to survey all candidate holistic effects that might be wielded against Invariant Worsening in order to defend the multiverse theodicy.

17. For reasons to think that Cantorian infinities do not properly represent value in worlds featuring infinite amounts of value, see Almeida (2008: 155–58).

While it remains open to theists to identify a better candidate than those we have considered, we will forgo exploring this strategy in order to take up one that we regard as more promising.

8. Fallback Response

We have argued against the multiverse theodicy and answered some objections. If the argument succeeds, there is a natural fallback strategy for proponents of the multiverse theodicy: claim that while God did not create M, he did create a different multiverse with U in it.

This strategy cannot use just any multiverse. To help with the problem of evil and other theistic ailments, the strategy must explain why God would create such a multiverse, and not just any multiverse is amenable to such an explanation. Such an account must explain why creating U would improve the world (lest the account risk running afoul of No Creative Worsening). Furthermore, such an explanation must not appeal to anything like Universe Mere Addition.

This is a tall order. At least once Universe Mere Addition is discarded, it is far from obvious that any improvement would result from adding a creation-worthy world like ours to, for example, the multiverse just consisting of the unsurpassable universes. Granted, there are worse multiverses than that. And it is more plausible of some of them that they would be improved through U's addition. But because they are worse, it is also *prima facie* harder to see why God would create them.

To illustrate the difficulties that a proponent of the multiverse theodicy would face in implementing this fallback strategy, we can examine some proposals for avoiding the Repugnant Conclusion in the population ethics literature. We will examine how each of these proposals might be adopted by the proponent of the multiverse theodicy, and argue that each attempt incurs significant costs.

First, there is the *averaging view* on which the value of a world is determined by the average value of the universes in it, so that worlds with higher average universe value have higher value simpliciter (see Hardin 1968; Harsanyi 1977; and Pressman 2015). This view stops the march to repugnance in the first step by maintaining that adding creation-worthy universes to a world makes it worse whenever it lowers the average value of universes in that world. Thus, the view accommodates Universe Mere Addition Failure.

If there are unsurpassable universes, the averaging view naturally leads to the prediction that God created at least one of them. Since all worlds containing only unsurpassable universes would have the same (maximal) value on the averaging view, we might expect God to randomly choose among those worlds (but see Kraay 2009 and Strickland 2006). Further, combinatorial considerations

suggest that more worlds contain multiple unsurpassable universes than contain only a single unsurpassable universe. So, there is some plausibility to the thought that, on the averaging view, God would create a multiverse.

However, since the averaging view entails that the number of universes makes no difference to the value of the world, it evidently blocks multiverses from doing any explanatory work in reconciling the existence of God and evil. Furthermore, since U does not seem to have an especially high value among possible universes, on the averaging view it is only poised to improve worlds that contain even worse universes. Thus, the explanation that God included our world in the multiverse in order to improve the world is only available on the hypothesis that we live in the best of all actual universes within the multiverse— if anything, this exacerbates the problem of evil. Thus, the averaging view is of little use in defending the multiverse theodicy.

Second, on *compromise theories*, adding universes of positive value to worlds is subject to diminishing returns such that for small multiverses the world value is approximately the sum of its universe values and for large multiverses the world value is approximately that assigned by the averaging view.¹⁸ Compromise theories stop the march to repugnance by holding that returns diminish such that there is an upper limit on how good a world can be made through the addition of universes of a given value, with the upper limit for worlds consisting of universes only slightly better than ours falling below the value of the world consisting of unsurpassable universes.

The escape from repugnance afforded by compromise theories is one that proponents of the multiverse theodicy are poorly positioned to use. They must claim that adding U to the multiverse improved the world, and hence that the averaging view does not capture the world's value at that point. However, if at that point the world's value is instead the sum of its universe values, then the resulting view is subject to the argument in §4, and hence does not avoid repugnance. Strictly speaking, there is some wiggle room here since compromise theories only approximate the total sum and averaging views. But we see no plausible way for the proponent of the multiverse theodicy to exploit this wiggle room.

Third, there is the *critical level view* on which universes contribute positively to the world's value just when they exceed a certain positive value. This view promises to avoid repugnance by holding that some universes that putatively lead to repugnance lie below that value, and hence that the argument errs in assuming that their addition to the world improves it. On this view, it is plausible to suppose that God would create a world containing a proper subset of

18. See Hurka (1983) and Ng (1989). N.B. while it is possible to construct a compromise theory that respects Universe Mere Addition (Sider 1991), only compromise theories that uphold Universe Mere Addition Failure are relevant here.

the universes in *M*—those above the critical level—rather than *M*. Provided that the critical level is not so high as to rule out universes containing evil, the theist will then have a way to reconcile God and evil: God created universes containing evil because he created all the universes that would make the world better and universes containing evil were among them.

However, a dilemma arises if we try to run a multiverse theodicy using the critical level view: is *U* above the critical level or not? (Cf. Grover 1999: 178.) If it is not, then creating *U* did not improve the world and the suggested explanation of why God created universes containing evil cannot be extended to explain why God created *U* and its evils. On the other hand, if *U* is above the critical level, then the view does not provide a way to avoid repugnance: since all the universes that appeared in the march to repugnance in §5 were better than ours, they are all above the critical level if ours is. Thus, if *U* is above the critical level, the critical level view does not block the march to repugnance, as it only leads to violations of Universe Mere Addition outside the march.

9. Conclusion

We have seen that the multiverse theodicy is more promising than it initially seems, as it naturally extends beyond the problem of evil to a host of other problems for theism. It thus offers an array of theoretical fruits with much appeal for the theist. Yet the theist has reason to resist this temptation: reflection on population ethics has uncovered an explanatory challenge for the multiverse theodicy (§5) as well as an argument against it (§6). We sought ways to defend the multiverse theodicy and found them wanting (§7); the same went for an attempt to redeem the multiverse theodicy by revising it (§8). Whether this case against the multiverse theodicy can be answered remains to be seen.

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