

THE THEISTIC MULTIVERSE: PROBLEMS AND PROSPECTS

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In recent decades, there has been astonishing growth in scientific theorizing about multiverses. Once considered outré or absurd, multiple universe theories appear to be gaining considerable scientific respectability. There are, of course, many such theories, including (i) Everett's (1957) *many worlds interpretation* of quantum mechanics, defended by Deutsch (1997) and others; (ii) Linde's (1986) *eternal inflation* view, which suggests that universes form like bubbles in a chaotically inflating sea; (iii) Smolin's (1997) *fecund universe* theory, which proposes that universes are generated through black holes; (iv) the *cyclic model*, recently defended using string/M theory by Steinhardt and Turok (2007), which holds that distinct universes are formed in a never-ending sequence of Big Bangs and Big Crunches; and (v) Tegmark's (2007) "Level IV" multiverse, which contains many universes governed by distinct mathematical and scientific laws. While not all of these preclude each other, the details and implications of each one are hotly contested.¹

In one area within the philosophy of religion (the debate concerning the "fine-tuning" argument), scientific multiverse theories are widely held to be hostile to theism. This is because such theories appear to account for the relevant data – the biophilic parameters of the universe we inhabit – without appeal to an intelligent designer. Yet, in recent years, several philosophers² and one physicist³ have offered reasons for thinking that if theism is true, the actual world comprises (or probably comprises) many universes. I first set out some requirements – both scientific and otherwise – for such a theory. I then survey some problems such theories are held to face, and some prospects they are thought to have. Finally, I examine arguments both for and against the claim that multiverse theories can help theists respond to the problem of evil. I conclude that such theories advantage neither the theist or the atheist in the debate about evil: they merely require *reframing* arguments from evil.

1. SOME REQUIREMENTS FOR A THEISTIC MULTIVERSE THEORY

The claim that on theism, the actual world is (or probably is) a multiverse is not explicitly about God's activity with respect to the natural world. But of course theism holds that God is the ultimate causal explanation for the existence of contingent reality, including the natural realm we inhabit. Such a view must, then, be compatible with what contemporary science has to say about causation. Theists typically think of God's causal role as an initial act of creation *ex nihilo*, followed by the continued conservation in existence of all the things there are. This requires an account of causation consistent with the doctrine of an immaterial being bringing about physical effects, which can allow for such a being to bring about effects *ex nihilo*. There are related issues about God and time: for example, if God is thought to exist outside of time, an account is needed which can allow for a timeless being to have temporal effects. A model of causation is needed which can make sense of the traditional idea that God *sustains* things in existence. And famously, of course, there are vexing questions about how best to understand traditional claims about God's causal interventions in the course of nature. In what follows, however, I set all these issues aside, since they pertain to many theistic accounts of the existence of contingent reality, and are not peculiar to multiverse theories.

A complete theistic multiverse theory will offer an account, consistent with the best science, of what a *universe* is.⁴ But, of course, scientific research has not yet fully answered this question: apart from some very general points of consensus, different theories vary widely.⁵ Theistic multiverse theories will not, then, be complete until the science is settled.

But in the meantime, defenders of theistic multiverses can develop their views in accordance with one or more scientific theories, recognizing that these are controversial, or they can remain neutral between many or all such theories. Most theistic multiverse theories take for granted that universes are independent, non-interacting, spatiotemporally interrelated objects. Some, however, appear to assume that all universes are related, either temporally (Stewart 1993, p.61), or by being embedded in a higher spatial dimension (Hudson 2006). Some philosophers are officially neutral on this issue (Draper 2006, p.316; Forrest 1996, p.218). I take it that whether or not there are completely disconnected spacetimes is a question for science, not theology or philosophy, to settle. It's worth noting that if there are, this will falsify philosophical theories, like David Lewis' *modal realism*, which preclude this.⁶ And this matters in the current context because at least one *rival* to theistic multiverse theories depends upon Lewis' view that there cannot be independent spacetimes.⁷ So here is a clear case where science can help to adjudicate between competing philosophical theories.

Some defenders of a theistic multiverse maintain that universes come in different *kinds* or *types*, without giving a complete account of what they mean. Stewart appears to think that universes are to be distinguished with respect to the divine "values" and "purposes" that they express, but offers no details (1993, pp.61). O'Connor speaks of "organic kinds" and "value types", without definitions or examples (2008, p.120).⁸ Forrest (1996, p.116) suggests that God will create "universes of many types", without saying what a type is. In an earlier paper, he suggests that universes can be classified into "kinds", according to the laws of nature they exhibit (1981, p.50). For this suggestion to be defended, it must be shown compatible with scientific accounts of the laws of nature. More generally, any view that relies on such a classification scheme for universes must defend it, and this involves ensuring that it is consistent with the best contemporary science.

Some authors claim that there can be *duplicate* universes within a multiverse (Parfit 1992, p.423; Monton forthcoming); but others deny this, citing the Principle of Identity of Indiscernibles (McHarry 1978, p.133; Turner 2003, p.150). Still others are silent or neutral on this issue (Stewart 1993; Forrest 1981, 1996; Draper 2004; Hudson 2006; O'Connor 2008; Kraay 2010a). Of course this principle is controversial, so those who maintain that there cannot be duplicate universes should either offer plausible arguments for it, or else should offer some other reason for thinking that there cannot be duplicates. But it is also worth noting that, even if the Principle of Identity of Indiscernibles is false, in principle there could be scientific reasons which preclude there being duplicate universes. So physics and cosmology will be relevant here as well.

Some authors appear attracted to the view that, on theism, *every* universe will feature living creatures (Leslie 1989, p.102; Turner 2003, p. 147; O'Connor 2008, p. 112). For Turner and O'Connor, this is because a loving God would want to show love to creatures. While God may want to have creatures to love, there may of course be *other* reasons why God would create uninhabited universes. In any case, this is another point at which scientific research places a constraint on theological speculation: if science establishes that there are uninhabited universes, as all current scientific multiverse theories maintain, these claims will need to be abandoned.

Explicitly or implicitly, all theories of God's role as creator and sustainer involve God selecting, from an array of possible worlds, just one for actualization.⁹ And it is generally thought that these objects of God's choice are proper subjects of axiological evaluation. So all theistic multiverse theories are committed to claims about the *axiological status* of both possible worlds and universes. Regarding the former, I have argued elsewhere that a good framework for this involves taking the axiological status of worlds to depend upon which world-good-making properties (WGMPs) and the world-bad-making properties (WBMPs) it exhibits, and, for degreed properties, the degree to which they are instantiated.¹⁰ But of course this is just a schema: a complete theory would fill out the details of what these properties are, and just how they determine the axiological status of worlds. Ideally, such a completed theory will reveal whether there is a *best* or *unsurpassable* world (in various senses to be distinguished below), and whether or two or more worlds can be tied in axiological status.

Scientific research may constrain this axiological theorizing. Here are three examples of how this might happen. First, someone might hold that some or all axiological properties supervene on natural ones: if so, an account of the relevant natural properties is needed to ground axiological claims. Second, someone might hold with Leibniz that the best world features simple natural laws that generate great diversity: if so, an account of both laws and simplicity is needed. Third, someone might hold that worlds in which *everything* is spatiotemporally interconnected are, *ceteris paribus*, more valuable than those which feature disconnected spacetimes.¹¹ But if such interconnected worlds are precluded by science, then such claims about what is expectable on theism will have to be adjusted.

Suppose that axiological theorizing leads to a broad consensus about what sorts of properties are WGMPs and WBMPs. A further issue – which has received insufficient attention – is the *modal status* of these properties.¹² Most authors appear to assume *necessitarianism*: the view there is only one common set of WGMPs and WBMPs, with reference to which *all* possible worlds are to be evaluated. On the rival view, *contingentism*, there is no one common set of axiological properties relevant to all worlds: some worlds are properly evaluated with respect to one set of WGMPs and WBMPs, while other worlds are properly evaluated with respect to a distinct set of WGMPs and WBMPs. On necessitarianism, all possible worlds are *commensurable*: this is just what it means to say that they are all to be evaluated with respect to the common set of axiological properties. On contingentism, however, there are failures of commensurability between possible worlds. On contingentism, it is useful to define a *world-cluster* to be a set of worlds which are commensurable. (Necessitarianism, then, amounts to view that there is just one world-cluster.) A complete axiological theory will settle whether necessitarianism or contingentism is true.¹³

On either view, however, there is a further complication. Although all worlds within a given cluster are *commensurable*, they may not all be *comparable*: there may be a pair of world-cluster-mates w_1 and w_2 such that neither is better than the other, nor are they *equal* in axiological status. If so, it will be useful to reserve the term *world-hierarchy* to refer to a set of worlds (within a given cluster) which are both commensurable *and* comparable. No two worlds belonging to different world-hierarchies are comparable, although they are commensurable just in case they are cluster-mates. A complete axiological theory will settle whether there are genuine failures of comparability between commensurable worlds.

These distinctions are important because they bear on the question of whether or not there is a best possible world: they reveal the question to be too simplistic. On necessitarianism, perhaps there is exactly one world which is *best_a* in the strong sense of being better than *all* others, or perhaps there is one or more world which is *unsurpassable_a* in virtue of being surpassed by no other world. On contingentism, however, there can be no *best_a* world (simply because there are failures of commensurability between worlds in different clusters), although in principle there could be one or more *unsurpassable_a* worlds.¹⁴ A world is *best_c* when it is better than all of its other cluster-mates, and a world is *unsurpassable_c* when no world in its cluster surpasses it. These terms add nothing new on necessitarianism, since on that view, all worlds are cluster-mates. But on contingentism, perhaps some clusters feature such worlds, while others contain no such world.¹⁵ Finally, within a given hierarchy (on either necessitarianism or contingentism) all worlds are both commensurable and comparable, so in principle there could be a world which is *best_h* by surpassing all of its other hierarchy-mates, or *unsurpassable_h* in the sense of being unsurpassed by all hierarchy-mates. A complete axiological account will perhaps reveal whether there really are worlds answering to these definitions.

The foregoing can be applied *mutatis mutandis* to universes.¹⁶ Some authors think it obvious that there are unsurpassable universes (McHarry 1978); others think it obvious that there are not (O'Connor 2008).¹⁷ But it is important to be careful about what this means. If necessitarianism about universes is true, then in principle there could be a *best_a* universe, or *unsurpassable_a* universes. But if contingentism about universes is true, no universe can be *best_a*, although in principle there could be one or more *unsurpassable_a* universes. On contingentism, perhaps some clusters features a *best_c* universe, or one or more *unsurpassable_c* universes, and perhaps other clusters feature neither kind. Finally, within a

given universe-hierarchy (on either necessitarianism or contingentism), all universes are both commensurable and comparable, so in principle there could be a universe which is *best_h* in the sense of being better than all of its hierarchy-mates, or *unsurpassable_h* in the sense of being unsurpassed by all hierarchy-mates. Until a more complete axiological of universes is given, it cannot be determined whether there are *best* or *unsurpassable* universes in all these various senses.

The axiological evaluation of universes is particularly important for theistic multiverse theories, since they all posit that there is an objective axiological threshold above which all universes are worthy of inclusion in a multiverse created by God, and at or below which no universe is worthy. Some say little about where this threshold lies. Hudson (2006), for example, asserts that God will create every universe “worth having” (p.167): all those which “satisfy a certain minimal criterion of value” (p.170). O’Connor simply says that there is an objective threshold, and adds that it may be vague (2008, p.158). And I have said that God will include “all and only those universes worth creating and sustaining” (Kraay 2010a, p.363). Others offer more detail. Turner (2003) suggests “a favourable balance of good over evil” (p.149), and Monton (forthcoming) offers various construals of what this might mean. But such a threshold is too simplistic: a universe might meet this condition, while nevertheless containing some feature that makes it unworthy of inclusion in a divinely-furnished multiverse. Perhaps sensing this, some philosophers have proposed additional requirements. Parfit says there should be no injustice (1991, p.5), and that each individual’s life must be worth living (1992, p.423). Forrest first says that every individual must have a life in which good outweighs evil (1981, p.53), and later adds two further restrictions: each creature who suffers must at least virtually consent to it, and must receive ample recompense afterwards (1996, pp.225-7). Draper says that no individual’s life may be bad overall, and that God must be a benefactor to all creatures (pp.319-320). These criteria may well be plausible, but of course they are only partial specifications of a threshold, since they only pertain to universes inhabited by creatures like ourselves. A more complete account of the threshold is needed.

Most defenders of the theistic multiverse maintain that God will create *every* universe above the threshold.¹⁸ (Surprisingly, few explicitly add the plausible restriction that God will create *only* these.) O’Connor, however, *denies* that God will create every universe above the threshold (2008, p.119), and others are silent or neutral on this issue.¹⁹ O’Connor’s denial that God will create every universe above the threshold has been persuasively criticized (Almeida 2010, p.304 and Monton, forthcoming). At the very least, one who denies that God will create all universes above the threshold bears the burden of undermining or defeating the natural presumption that, all else equal, creating another good thing makes the ensemble better overall.²⁰

Finally, while most theistic multiverse accounts in the literature concentrate on God’s *creation* of universes, it is important also to incorporate to the traditional idea that God *sustains* universes in existence.²¹ In what follows, then, “TM” will refer to that theistic multiverse which includes all and only those universes worthy of being created and sustained by God. While a *complete* theory will develop this claim in the various ways identified in this section, some important philosophical issues concerning this theory can be discussed prior to these matters being settled. I turn to these now.

2. PROBLEMS AND PROSPECTS FOR TM

In this section, I briefly survey some important objections to TM, and some prospects it is thought to have. The first four threaten the coherence of TM.

- (1) As we have seen, all theistic multiverse accounts presuppose that there is an objective axiological threshold above which universes are worthy of inclusion, and at or below which they are unworthy. But here is an objection familiar from the literature on the Problem of No Best World: perhaps, for any such threshold one might posit, there is a

defensible superior threshold, in which case no putative threshold is *good enough* for an unsurpassable being.²² Theistic multiverse theories must respond to this objection.

- (2) Tom Talbott and Peter van Inwagen have both complained to me that TM cannot contain *all* universes worthy of being created and sustained, using the following thought experiment. Consider a person *S* who exists in some universe *U* in TM. Assuming trans-world (and trans-universe) identity, that person also exists in universes contained in other worlds, and it is not unreasonable to suppose that at least one of these is worthy of being created and sustained. But then the theistic multiverse cannot include *all* worthy universes.²³
- (3) Gale and Pruss (2003, p.xxvi) anticipate, and Monton (forthcoming) offers, a different argument for the claim that that no multiverse can include *all* universes worthy of creating and sustaining. Rejecting the Principle of Identity of Indiscernibles, Monton says that God could create *duplicates* of worthy universe. Since for any number of duplicates God could create, God could have created more, Monton says, it is impossible for God to create *all* worthy universes.²⁴
- (4) Pruss has suggested that whether a universe is worthy of creation and sustenance may depend upon which *other* universes are worthy.²⁵ Consider, for example, a pair of universes *U*₁ and *U*₂ which are both very close to the threshold. Suppose that thousands of philosophers and scientists in *U*₁ justifiably believe that *U*₂ does not exist, and that in *U*₂ thousands of philosophers and scientists justifiably believe that *U*₁ does not exist. Suppose, further, that if the relevant belief in *U*₁ is true, the value added to *U*₁ suffices to bring it above the threshold, in which case *U*₂ is below the threshold – and vice versa. On this view, it can seem an arbitrary matter which universe is included.²⁶

Apart from those arguments which claim that TM is *incoherent*, three other arguments against TM are worth briefly noting.

- (5) Appealing to Ockham's razor, someone might hold that multiverses objectionably inflate our ontology. While this charge might be a legitimate complaint against an *ad hoc* appeal to many independent universes, defenders of the *theistic* multiverse can reply that their model is not *ad hoc*: it is defended by arguments about what a perfectly good creative agent would do.²⁷ Moreover, the recent growth in scientific theorizing about multiverses should diminish, if not entirely remove, the initial appeal of this objection.
- (6) Theists have traditionally held that God's decision to create is a free one, but if one thinks that TM is the unique best of all possible worlds, it might seem that God cannot do otherwise than to select it, and that this in turn compromises God's freedom.²⁸ And if God's choice is unfree, one might further urge, God unworthy of thanks and praise for creating.²⁹
- (7) Relatedly, some have held that if TM is the only world that God can choose, it is in fact the only possible world *simpliciter* – a consequence held to be absurd.³⁰

These, then, are some of the problems that TM faces. But it is also thought to have some important prospects in the philosophy of religion:

- (1) As mentioned in the introduction, scientific multiverse theories are thought to undermine the fine-tuning argument. But if philosophers can show that *if theism is true, the actual world is (probably) a multiverse*, this objection will be more difficult to sustain.
- (2) If TM really is, as some of its proponents claim, the best of all possible worlds, then an important argument for atheism is evaded: the Problem of No Best World.³¹

- (3) While the problem of *actual* evil holds that evil in the actual world disconfirms theism, the problem of *possible* evil holds that the existence of bad possible worlds disconfirms theism. But if TM is both good and the *only* possible world, then there simply are no bad possible worlds to which the defender of this argument can appeal.³²

These three prospects have seen relatively little discussion in the literature. In contrast, rather more attention has been paid to a different putative prospect: the claim that theistic multiverse theories can help theists to respond to the problem of evil. In Section 3, I outline (and criticize) what defenders of this position have said. In Section 4, however, I take issue with some of their critics. In Section 5, I argue that multiverse theories do not advantage either side in this debate: they merely require *reframing* certain arguments from evil.

3. DEFENDERS OF MULTIVERSE-BASED RESPONSES TO ARGUMENTS FROM EVIL

Of course, there is no such thing as *the* problem of evil. Instead, there are many different arguments for atheism, having different logical forms, which involve one or more premises about evil. Authors who think that a multiverse will help theists typically have one or both of the following argument schemas in mind. (These come in both deductive and inductive variants, and the second premise can be supported in various ways.)

Argument I

- (1) If theism is true, the actual world is the best of all possible worlds
- (2) (Probably), the actual world is not the best of all possible worlds.
- ∴ (3) (Probably), theism is false.

Argument II

- (1) If theism is true, there is no gratuitous evil.
- (2) (Probably), evil *e* is gratuitous.
- ∴ (3) (Probably), theism is false.

McHarry asserts that his argument would, if sound, “dissolve” the problem of evil, which he takes to be Argument I (1978, p.134). He begins by identifying the best of all possible worlds with a multiverse comprised of *all* (and, we should add, *only*) the threshold-surpassing universes. McHarry grants premise (1), and so wants to deny premise (2). One might expect him to offer evidence for thinking that the actual world *is* such a multiverse, but he does no such thing.³³ More modestly, one might expect McHarry to argue that *our* universe is (probably) above the threshold – or, at least, to block reasons for thinking that it is *not* (probably) above the threshold. McHarry does neither. So McHarry does not “dissolve” even Argument I, and certainly not “the” problem of evil.³⁴

Turner (2003) advertises his multiverse theory as a “solution” (p.143) to the problem of evil, which he takes to be Argument I. But he later moderates this claim, calling it a “partial answer” and a “partial solution” (p.157). Like McHarry, Turner thinks that his multiverse is the best of all possible worlds, and he appears to concede premise (1) – so he presumably wants to block premise (2). Turner says that if God were to create all (and, we should add, *only*) those universes which have a favourable balance of good over evil, “...it should not be surprising if it seems to us that we are in a [universe] that could be better than it is” (p.157). But this move only blocks *one* reason for thinking that our universe should not be included in the multiverse. Perhaps there are others. Someone might defend premise (2), not by saying that our universe is *surpassable*, but by urging that it contains some feature which God would not permit. Turner continues: “[o]nly if this were a [universe] with a preponderance of evil over good should we conclude that it was a [universe] a benevolent God would not have created” (p.157). But this is not so. To see why, recall the additional restrictions proposed by Parfit, Forrest, and Draper on a universe being worthy of creation and sustenance. If any such condition is plausible, a universe with equal amounts of good and evil (or indeed with

more good than evil), and in which such a condition is *not* satisfied, would be *unworthy* of inclusion in a theistic multiverse. So, *contra* Turner, there being a preponderance of evil over good is not the *only* way for a universe to be deemed unworthy. At most, then, Turner has provided a theistic response to just one defence of one premise of one argument from evil.

Hudson (1996) thinks that his *plenitudinous hyperspace* can be deployed against both arguments for atheism displayed above.³⁵ Hudson thinks that his multiverse is the best possible world, but like McHarry and Turner, offers no reason for thinking that *our* universe is indeed above the threshold he posits: “worth creating”. So Hudson does not, in this sense, defeat the first argument for atheism. He does, however, suggest a way to use his hyperspace to block a certain defence of premise (2) in a deductive version of Argument II. That defence appeals to considerations about suffering experienced by non-human animals that is *not* caused by agents. Since these considerations can also be used to defend premise (2) of a deductive version of Argument I, Hudson’s move is best seen as a response to both.

Hudson takes himself to have an *undercutting defeater* for such a defence of premise (2) of both arguments. In the spirit of St. Augustine, he believes it is metaphysically possible that *no* such evil in our universe is gratuitous, since *every* instance is required to bring about some otherwise-unobtainable *aesthetic* good(s) which outweigh(s) the evil in question (2006, pp.172-181). This response has been criticized in some mistaken ways. Gilmore (2006) and Rea (2008) note that Hudson’s move does not require hyperspace: one might instead posit lower-dimensional aesthetic properties as possible justifications for natural evil. This is perhaps true, but of course Hudson did not devise his hyperspace simply to reply to arguments from evil. He takes himself to have independent *a priori* grounds for the claim that, on theism, God would create such a hyperspace. Rea offers another criticism. He points out that all of the allegedly gratuitous evils in 3-space are also contained in 4-space, so “... every reason we have for thinking that our 3-space isn’t the best possible will also be a reason for thinking that our 4-space isn’t the best possible” (p.450). But this misses the point of Hudson’s argument. Hudson wants to concede that our 3-space may be surpassable, while insisting that this fails to show that the *actual world* is surpassable.

A better criticism is anticipated by Hudson (2006, p.179), and explicitly levelled by Monton (forthcoming): “...an omnibenevolent being would not value aesthetic properties over preventing an innocent creature from pointlessly suffering”. Monton does not argue for this claim, thinking it obvious. My sympathies are with Monton here: it is difficult to see how a perfectly good being could permit creatures to suffer for the sake of aesthetic goods *which they cannot appreciate*. Now it’s true that Hudson merely wants to establish a *metaphysical possibility*, in response to deductive variants of these arguments. So even if one grants Hudson this much, *and* grants that this is sufficient to undermine this particular defence of premise (2) in both arguments, it should be stressed that this is only a very limited contribution to debate about evil.³⁶

4. CRITICS OF MULTIVERSE-BASED RESPONSES TO ARGUMENTS FROM EVIL

So far, we have seen that theistic multiverses should not be thought to “solve” “the” problem of evil. In this section, I turn to the critics of multiverse-based responses to arguments from evil.³⁷ The first two deny that a multiverse containing an infinity of universes above some threshold can be improved by adding another such universe.

Perkins (1980) follows McHarry (1978) in assuming that there are “optimal” universes as well as “non-optimal” ones. Perkins assumes that our universe is of the latter sort. But if there are infinitely many non-optimal universes worth creating, he says, “... it is difficult to understand in what sense of ‘better’ the [world] is better for including our [universe]” (p.170). He doubts that it would be meaningful to say that a world featuring our universe has *more value* than a world without it (pp.170-1). In his response to O’Connor (2008), Almeida (2010) considers whether God would actualize a super-universe SU_{∞} containing infinitely-many universes above threshold τ . Almeida points out that if such a world has infinite value, then removing some or even many universes from it will not

diminish its value: “...even if there were infinitely many universes in SU_∞ that included the immense suffering and disvalue found in the actual world, we could remove all of those universes without diminishing the overall infinitely positive value of SU_∞ ” (p.306). So, although he appears to grant that our universe has “on-balance positive value” (p.306), he thinks that God, on O’Connor’s model, would not create it.³⁸

Perkins and Almeida thus both believe that God can create an infinitely-valuable universe without including our universe, *and that accordingly*, God should not include it. But there are reasons for resisting this inference, even if the premise is accepted. First, theists sometimes maintain that God is infinitely valuable, in which case the world in which God creates *nothing* might well be thought infinitely valuable. This is the “bare world”: it consists of God, whatever other necessary existents there are, and whatever uncreated contingent beings there are. Since most theists maintain that at least some worlds in which God creates and sustains contingent entities are better than the bare world, there is some motivation for thinking that infinitely valuable states of affairs can be bettered.³⁹

Almeida himself offers a different reason for resisting this inference (2008, p.156). Following Vallentyne and Kagan (1997), he imagines a world w_1 which comprises infinitely-many temporal locations, each of which has axiological status 10. Surely, Almeida says, w_1 is on balance better than w_2 , a world which comprises infinitely many temporal locations having axiological status 1. Almeida doesn’t say what it is for a temporal location to have an axiological status, but this needn’t detain us. His point is presumably intended to apply to multiverses as follows: surely it is intuitive to think that multiverse m_1 is *far better* than multiverse m_2 when all the universes in the former are (say) ten times more valuable than all the universes in the latter – even though both multiverses have infinite value.

Both of these reasons motivate searching for a principled way to distinguish the relative value of infinitely good worlds. And, if such a way can be found, this can be used in a response to Perkins (1980) and Almeida (2010). Several such ways are available. First, as Almeida himself notes, “There are of course nonstandard mathematical representations of infinite value according to which addition and subtraction of infinite numbers is well defined” (2008, p.156). Here is a second approach. Monton, inspired by Almeida (2008) and Vallentyne and Kagan (1997), suggests the following principle:

If world w_1 has all the locations that w_2 has, but w_1 has more locations as well, and if the values of all the shared locations are the same, and the values of the non-shared locations in w_1 sum to a positive number, then w_1 is better than w_2 .

As Monton rightly observes, a defect of this principle is that it would – implausibly – license God to create some unworthy universes in w_1 . But this principle can easily be modified to prevent this unwanted outcome. Consider:

If multiverse m_1 includes infinitely-many threshold-surpassing universes, (and no other universes), and multiverse m_2 includes all the universes that m_1 includes, and also includes threshold-surpassing universes that m_1 lacks, (and no other universes) then, ceteris paribus, m_2 is better than m_1 .

This captures the plausible intuition needed to defeat the objection expressed in Perkins (1980) and Almeida (2010).

But suppose that one rejects these moves, or even despairs of finding a principled way to distinguish the relative axiological status of such multiverses. A different approach might concede that (at least some) pairs of infinitely-membered multiverses are *equal in value*, while denying that the value of the two relevant world-actualizing *actions* is equivalent. For example, one might hold that, in such cases, world-actualizing action A1 is better than world-actualizing action A2 just in case the world that results from A1 contains one or more threshold-surpassing universes that the world resulting from action A2 lacks, and no other universes.

While Perkins (1980) and Almeida (2010) deny that a multiverse containing an infinity of universes above some threshold can be improved by adding another such universe, Monton (forthcoming) takes the opposite tack: he holds that God *can* improve such a universe. Monton posits that our universe contains gratuitous evil, but nevertheless is above his axiological threshold: it has a favourable balance of good over evil.⁴⁰ One might expect Monton to say that since our universe is above this threshold, it is worthy of inclusion in the multiverse, and that since including it would add to the goodness of reality, then God should include it. Surprisingly, however, this is not what Monton thinks. He says that God could add to the goodness of reality *even more* by creating *duplicates of better* threshold-surpassing universes: those lacking gratuitous evil. And so, Monton thinks, God would never “feel compelled” to create any universe like our own. But this is implausible. If, as he explicitly claims, *every* threshold-surpassing universe adds to the goodness of reality, God has sufficient reason to create *each* one.⁴¹

5. THE WAY FORWARD: REFRAMING ARGUMENTS FROM EVIL

In Sections 3 and 4, I objected to claims made by both defenders and critics of multiverse-based responses to the problem of evil. I now argue that multiverse theories are best thought of as requiring defenders of certain arguments from evil to *reframe* their arguments. I begin with an illustrative exchange between O'Connor and Oppy.

O'Connor is more modest than the authors considered in Section 3: he merely says that his multiverse “has some relevance to” the problem of evil (2008, p.122; 2010a, p.271). Specifically, he thinks that

God will in fact have compelling reasons to create a universe in which significant suffering is permitted to occur *even if the goods that require suffering are not the greatest goods, or if the universe in which they occur does not belong to a class of supremely valuable realms*. All that is required is that the suffering-risking universe satisfy a minimal threshold of goodness (2008, p.123, and see 2010b, p.316).

It's not clear what the point of O'Connor's first italicized suggestion is: I know of no arguments from evil which claim that God can permit suffering only for the sake of “the greatest” goods. That aside, O'Connor seems to be saying that those who offer arguments from evil against multiverse-theism bear the burden of showing that our universe fails to surpass the relevant threshold of goodness. Oppy (2008) expresses sympathy for O'Connor's project, but offers the following caution:

... it is perhaps worth pointing out that O'Connor's theory clearly doesn't help to overturn the thought that a morally perfect being would not permit a person to suffer *horrendously* unless it was in the interests of that very person to undergo the horrendous suffering in question. Appearances generated by O'Connor's discussion of the value of universes to the contrary, considerations about minimum thresholds of goodness in suffering-risking universes cannot float free of these kinds of deontological concerns (or so it seems to me).

Oppy is challenging O'Connor to say more about the threshold: in particular, he is asking O'Connor to add a restriction similar in spirit to those offered by Parfit, Forrest, and Draper. O'Connor could do so, and then, if he wished to develop his argument further, he could offer reasons for thinking that this restriction is (probably) satisfied in our universe, or at least could try to block reasons for thinking that it is (probably) not.

What this exchange illustrates is that defenders and critics of multiverse-theism can work together to find a mutually-agreeable threshold above which universes should be deemed worthy of inclusion in a theistic multiverse. They may well subsequently differ on the

a posteriori question of whether *our* universe surpasses the agreed-upon threshold. Considerations about the existence, variety, magnitude, duration, scope, distribution, types, or intensity of evil in our universe could be appealed to in defending the claim that our universe is (probably) *not* worthy of inclusion. And defenders of multiverse-theism could either try to show that our universe (probably) *is* worthy of inclusion, or – more modestly – they could try to defeat or undermine arguments to the contrary. In short, the typical moves in the debate concerning the problem of evil can easily be *reframed* to apply to multiverse-theism. But this, by itself, will not furnish an advantage to either side.

CONCLUSION

The remarkable recent development of scientific multiverse theories should be taken into account by philosophers. Those who wish to argue that *if theism is true, the actual world (probably) is a multiverse* should take care to ensure that their account is consistent with the best contemporary physics and cosmology. An adequate axiological theory for both worlds and universes is needed, and scientific considerations may constrain this in various ways. Theistic multiverse theories face several important problems, but also offer significant prospects for various issues in the philosophy of religion. Solving the problem of evil, however, is not among these prospects.

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NOTES

¹ For surveys of these and other theories, see: Leslie (1989); Rees (2001); Kaku (2005); Vilenkin (2006); Carr (2007); Gribbin (2009); and Greene (2011).

² McHarry (1978); Parfit (1991, 1992); Stewart (1993); Forrest (1981, 1996); Leslie (1989); Turner (2003); Draper (2004); Hudson (2006); Collins (2007); O'Connor (2008); and Kraay (2010a and 2011a).

³ Page (2010).

⁴ In some theistic multiverse theories, universes are insufficiently distinguished from possible worlds. See, for example, Vallicella's (1994) criticisms of Stewart (1993), and Almeida's (2008, pp.146-8) criticisms of Turner (2003).

⁵ See Leslie (1989, pp. 66-9).

⁶ Interestingly, Lewis concedes in two places that he would prefer not to deny that there can be disconnected spacetimes (1986, pp.71,74). Bricker (2001) seeks to adapt Lewisian modal realism to allow this.

⁷ Michael Almeida's *theistic modal realism* (2008, 2011).

⁸ He does define a *universe type* a few pages earlier, but this does not seem to be a *value type* (p.116).

⁹ For more on this, see Kraay (2008).

¹⁰ See Kraay (2010a and 2011b).

¹¹ Gale and Pruss mention this claim (2003, p.xxvii).

¹² I discuss this in Kraay (2011b).

¹³ In what follows, I assume that every world belongs to a cluster, and that no world can belong to more than one cluster: for every world, there is one unique set of WGMPs and WBMPs which constitutes the appropriate criteria for assessing that world. I make the same assumption concerning universes and their axiological properties.

¹⁴ If, on contingentism, there is a world which is commensurable with no other worlds, it must be deemed (trivially) *unsurpassable_a*. The same consequence applies, *mutatis mutandis*, to the other senses of *unsurpassable* distinguished below.

¹⁵ Even if there are failures of *comparability* within a given cluster, this by itself does not preclude there being a *best_c* world in that cluster. Conversations with Graham Oppy, Ed Wierenga, and Yujin Nagasawa helped me to see this.

¹⁶ Most theistic multiverse theories appear to assume that all universes are both commensurable and comparable. One exception is O'Connor (2008), who says that universes belonging to different kinds or types are "incommensurate" (p.120), or "likely not fully commensurate (p.117). It's not clear, however, whether O'Connor has in mind (using my terminology) failures of *commensurability* or of *comparability*.

¹⁷ O'Connor offers a brief argument for this claim (2008, pp.117-18), but does not defend key aspects of it, including his distinctions between *intensive*, *aggregative*, and *organic* values, and his claim that God alone can possess infinite intensive and organic value.

¹⁸ McHarry (1978, p.134); Parfit (1991, p.5; 1992, p.423); Turner (2003, p.149); Hudson (2006, p.167); Kraay (2010a, pp.361-3).

¹⁹ Stewart (1993); Forrest (1981, 1996); Draper (2004).

²⁰ I say more on this below in Section 4.

²¹ I discuss this in Kraay (2010a).

²² I discuss this issue in the context of *worlds* in Kraay (2010b).

²³ It's worth noting that this objection could be expressed in counterpart-theoretic terms. My tentative reply is developed in Kraay (2011a): there is reason to think that on theism, TM is the *only* possible world, in which case *a fortiori* no individual can inhabit multiple worlds, and no individual has an other-worldly counterpart.

²⁴ Monton's view is puzzling: since many proponents of theistic multiverses already concede that there may be infinitely many universes worthy of being created and sustained, it's not clear what his appeal to *duplicates* adds to the discussion. Perhaps, then, his real worry is that there can be no actual concrete infinities.

²⁵ http://alexanderpruss.blogspot.com/2008/02/complication-for-multiverse-theories_04.html

²⁶ One might dispute the coherence of the objection in two ways, both of which require defence. First, one might deny that there could be no *other* reason for including (or failing to include) such universes. Second, one might deny that many peoples' justified belief being *true* can raise the overall axiological status of a world in the stipulated way.

²⁷ O'Connor (2008, p. 122) also makes this point.

²⁸ Almeida (2008, p.162) levels this charge against Hudson (2006). Those who maintain that God

needn't create *every* world above the threshold may preserve some scope for divine freedom here, but at a cost: God's choices on this view have been alleged to be *arbitrary* (Mawson 2009).

²⁹ I discuss both issues in Kraay (2008).

³⁰ Almeida (2008) levels this charge against Turner (2003) and Hudson (2006); Monton (forthcoming) responds. I concede the charge in Kraay (2011a), while tentatively arguing that it may be less serious than it appears.

³¹ I survey the literature on this argument in Kraay (2010b).

³² I attempt such an argument, and survey the costs, in Kraay (2011a).

³³ In fact, he says that to demand such evidence is to assume that his proposal is not meaningful unless it can be verified (p.134). But this is a mistake; one can easily grant that a multiverse model is meaningful, and still ask whether there are good reasons to believe that it corresponds to reality.

³⁴ Similar issues arise for Parfit, who says that that his multiverse model is "a partial answer" to "the problem of evil" (1991, p.5, and see 1992, p.423).

³⁵ Almeida offers a succinct definition: "A plenitudinous hyperspace is a collection of many independent three-dimensional subregions in a connected four-dimensional manifold" (2008, p.158).

³⁶ Megill (2011) offers a unique and interesting meta-argument: he claims that the bare epistemic possibility of there being multiple universes can be shown to defeat *all* arguments from evil. Space does not permit addressing it here; I criticize it in a manuscript under development.

³⁷ Due to space constraints, I do not discuss Draper (2004).

³⁸ Walker (2009) defends what he calls "the anthropic argument for atheism", which is similar in structure to certain arguments from evil. He imagines a multiverse-based response to his argument, and replies in the same vein as Perkins and Almeida.

³⁹ Coughlan (1987, pp.17-18) mentions this move, and Turner (2003, p.149) appears to endorse it.

⁴⁰ It is worth noting that many philosophers would deny that a universe featuring gratuitous could be worthy of inclusion in a theistic multiverse, even if it featured a preponderance of good over evil.

⁴¹ Of course, as we saw in Section 2, Monton thinks it is not possible for God to create *all* threshold-surpassing universes.

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