God Meets Satan's Apple: The Paradox of Creation

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"[B]ut to put compulsion on the gods against their will - no man can do that."

— Sophocles, *Oedipus Rex*

Abstract

It is now the majority view amongst philosophers and theologians that any world could have been better. This places the choice of which world to create into an especially challenging class of decision problems: those that are discontinuous in the limit. I argue that combining some weak, plausible norms governing this type of problem with a creator who has the attributes of the god of classical theism results in a paradox: no world is possible. After exploring some ways out of the paradox, I conclude that the classical theist should accept Marilyn Adams's view that no norms (of morality or of rationality) apply to gods.

Keywords: Theism, Creation, Decision Theory, Satisficing, Infinity

1 Introduction

There is no best possible world.[1] This leaves a dilemma for any creator: for any world she could create, there is a better. We can model this as a decision problem in which every strategy is dominated, including the strategy of not creating at all. In fact, this problem belongs to a special class of difficult

problems identified by Bartha *et al* as *discontinuous in the limit.* Finding norms for action in such cases is challenging enough. But, if we accept certain plausible principles about the creator (namely that it is a Anselmian perfect being), matters get worse: from very weak assumptions about the norms of rationality and morality, we can prove that no world is possible. Classical theism hovers on the edge of paradox. I argue that there is only one viable escape route: Marilyn McCord Adams's view that there are no moral (or rational) limits on what God can create.

The paper proceeds thus: §2 lays out some preliminary assumptions. §3 introduces decision problems that are discontinuous in the limit and argues that without a best world the creation decision is one of them. In §4, I will discuss norms for acting in this kind of problem, and introduce some plausible princples. In §5, I will introduce some plausible modal consequences of Anselmian theism. Only then, in §6, do we reach the papers' central argument, showing how the principles of §4 and §5 result in a paradox: no world is possible. In §7, I argue that the theist has one viable escape: granting that no world would be irrational or immoral for God to create. Even arbitrarily bad ones.

2   Preliminaries

Before starting in on the problem, I will lay out a few assumptions that I don't have space to defend and then clarify the main target of the paper.

2.1   Axiological Assumptions

Much has been written on the topic of ranking things by their goodness. Reviewing that literature, let alone contributing to it, would take us too far afield. Instead, I shall simply flag controversial assumptions I am making, some of which are only for ease of exposition.

I will assume that the goodness of worlds can be compared qualitatively. The goodness relation $\leq$ mirrors divine preferences over worlds. Which is more fundamental I leave to the reader. I assume that $\leq$ is connected, so that no two worlds are incomparable. I assume that $\leq$ is transitive. I assume that $\leq$ provides nothing richer than an ordinal ranking; more formally, that the goodness order has a representation by ordinal numbers that preserves its structure. Notably, this means that it is not dense. Finally, I assume that the goodness order has neither top nor bottom; no best or worst world. However, not all of these assumptions are essential. The argument can be extended to dense orders and to partial orders so long as there is no chain with a maximal element.[2]

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[2]Thanks to David Black for showing me how this can be done.

The central argument of the paper is fairly flexible. It can find a home in any setting where acts can be ranked by betterness. For ease of exposition, I will implement it in a classical consequentialist setting: one where worlds can be ranked by intrinsic goodness, and in which better acts result in better worlds. But with a little creativity, it can be implemented in settings with non-consequentialist background assumptions.[3]

2.2   Decision-Theoretic Assumptions

We generally discuss decision problems by describing some partial state of a world and specifying the strategies or live options to be chosen between, and then applying some relevant rule(s). When we do the mathematical foundations of decision theory, we get much more strict in specifying the states, acts, outcomes, and propositions in play (and in specifying which of notions like probability, utility, and expected utility attach to which). Sometimes, this requires us to consider (and consider preferences over) non-sensical options.[4] As a result, when we apply decision theory, we must make important choices about what strategies count as 'available.' We can give a first pass at availability with a functional definition: the available strategies are the alternatives the agent is choosing between, the set of strategies which norms sort through and deem either 'permissible' or 'impermissible.' The need for a notion of availability is baked into more careful formulations of important rules, like the dominance norms. We are badly in need of a general theory of availability. I have no such thing to offer here, but we would not go too far astray by thinking of 'available options' as those options that are within the agent's power to bring about. For example, if I am choosing between buying apples and buying plums (but only have enough money for one or the other), the option 'buy both apples and plums' is unavailable to me, because I lack the power to bring it about. Since we are dealing with gods and assuming theological determinism, I will assume that every strategy that it is metaphysically possible for God to deploy is available to God.

For our purposes, we can think of a decision problem as the set of available options to be chosen among, and an ordering of those options. A choice function $\mathcal{C}$ is then a function that given a decision problem returns the set of permissible (choice-worthy) options among its elements.

This lets us conveniently encode norms as constraints on $\mathcal{C}$. Although they are not generally equivalent, in this paper I will only consider norms that generate obligations, and will therefore use the terms 'norm' and 'obligation' interchangably. Both should be thought of us shorthand for conditions on $\mathcal{C}$. To use one example: if the norm is 'do the best,' then $\mathcal{C}(\beta) = max(\beta)$. We can encode both structural and substantive

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[3]Even deontologists and virtue ethicists must make choices. Using the tools of revealed preference theory, we could by offering constant decisions recover their rankings. The rankings would not be determined by the normative properties their decisions are sensitive to, and not intrinsic goodness, of course, but they would provide the required formal structures.

[4]see Buchak [2014] for an illuminating discussion.

norms. If, for instance, we wish to say 'no lying,' then we can say: $\{s : s$ involves lying$\} \notin \mathcal{C}(\beta)$. Note that we can give our norms either as conditions for exclusion from or inclusion in $\mathcal{C}$. These correspond to necessary or sufficient conditions on choice-worthiness.

2.3   Target: the Standard Picture

Since Rowe's Improvability Argument entered the literature,[5] there has been a sort of standard model of the divine creation decision.[6]

1. Posterior to learning the necessary truths (and perhaps the truths of middle knowledge), God surveys ways for a world to be that are consistent with those truths.[7]

2. She then consults whatever truths of morality or rationality (perhaps grounded in her will or character), and 'eliminates' sufficiently bad worlds from consideration.

3. She then chooses a world to actualize and actualizes it.

It is my contention that, in the presence of some very weak, very plausible rational/moral rules for making decisions, this model leads to paradox: there are no creation-worthy (and therefore no possible) worlds.

I diagnose step 2 as the fatal flaw. No world is inconsistent with God's existence and status as creator as a result of being too bad to actualize. Even worlds with only very large amounts of evils are rational/moral for God to create. Stated in the language of choice functions, identifying Ω as the decision problem God faces when creating, $\Omega = \mathcal{C}(\Omega)$.

3   Discontinuity in the Limit

Transfinite decision problems are prone to headache production. Those with discontinuity in the limit stand out among their peers.

3.1   Satan's Apple

Consider an example from Arntzenius *et al*[8](as simplified by Bartha *et al.*[9]):

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[5]Rowe [1994].

[6]See Howard-Snyder and Howard-Snyder [1994], [1996].

[7]These can be thought of as consistent, maximal-modulo-God situtations.

[8]Arntzenius *et al* [2004]

[9]Bartha *et al* [2014]

> **Satan's Apple**: Satan confronts Eve in the garden of Eden, offering her the fateful apple. But
> with a twist: Satan has cut the apple into countably infinitely many pieces, and Eve may eat
> however many of them she likes. Eve knows that if she eats the whole apple, she will be cast
> out of paradise. But eating part of the apple is fine. She is faced with a choice: how many
> pieces of apple should she eat?

Depending on our purposes, we can think of Satan's Apple synchronically or diachronically. In its diachronic version, Eve is faced with a series of choices. For each piece of apple, she can choose: accept or reject. And at each choice, there is an argument that 'accept' is rationally required. For consider the following principle:

NODOM: If there exists a strategy A that dominates some strategy B, then it is rationally impermissible to choose B.

This seems quite plausible. Dominated choices are guaranteed to do worse than the ones that dominate them.

But if Eve reasons according to NODOM, she falls into Satan's trap. At every stop in the series, 'accept' dominates 'reject.' But in the limit case, a series of choices to accept ends in her taking the whole apple and being kicked out of Eden. In fact, a weaker principle also leads to disaster. Bartha *et al* note that even the rule:

IMPERM BELONGS DOMINATED: It is rationally impermissible to choose act a at a choice point if there is some act act b available at that choice point which is part of a better strategy than any of the strategies containing a.[10]

is enough to spring the trap.

Thinking about the case synchronically reveals the trap more easily. Instead of a series of choices to accept or reject, we can think of Eve as choosing amongst a set of strategies: 'take no apple,' 'take one slice,' 'take two slices'...'take n slices'... the limit of which is 'take all slices.' Thus, she is considering a series of strategies, each of which dominates the previous, and all of which dominate the limit case.

As astute readers will note, Eve does have a diachronic pseudo-solution. She can continue eating apple slices eternally, and as long as she doesn't go too fast, she'll neither run out of apple nor consume infinitely

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[10]Roughly, this says: if a is a choice such that some course of action excluding it dominates every course of action including it, don't choose a.

many pieces. But not all decision puzzles that are discontinuous in the limit can be solved in this way. The pseudo-solution is a chimera. To see why, consider another example from Barker, Bartha, and Hajek:

> **St. Peter's Offer**: Upon death, you reach the gates of heaven. There, St Peter greets you: "I have good news and I have bad news. The good news: you can spend some time in heaven, and you get to choose how much. The bad news: you will choose your number of days in heaven by marking tick marks in an infinitely long notebook; one day per mark. But you will do this in hell."

As with Satan's Apple, we can give both diachronic and synchronic versions fo the case, there is no optimal strategy in the synchronic case. However many days in heaven you choose, you could have had more. But if you attempt the diachronic "solution" analogous to Eve's, you end up in hell for eternity.[11]

Discontinuity in the limit is not only a problem for theories of rationality. It is also a problem for moral theories. It is relatively straightforward to create a moral Satan's Apple scenario: simply let Satan issue the additional decree that, for each piece of apple Eve takes, he will release one person from unjust eternal damnation. But no one if she eats every piece. Likewise, we can gather a betterness ranking of states (or worlds) from each of the various moral theories. Consequentialists will use the goodness ranking. Other theorists will value different things, but using the tools of revealed preference theory we can elicit their rankings. With a betterness ranking, we can encode moral norms into a choice function in the same way we have done rational norms. Because the minimal norms defended in §5 are plausible both as rational and as moral norms, this allows us to give an argument that applies not only to rational obligations but also to moral obligations.

3.2   Creation

Because there is no best world, God is in a situation very much like Eve's. God is faced by a set of worlds, W, with an ordinal ranking by goodness that has no top or bottom. Worlds from among these contain no logical or metaphysical incoherences, but may be impossible if God is not permitted to create

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[11]Barker et al. characterize these general puzzles more precisely. Letting the $\{A_i\}$ be a series of strategies, we are in the following sort of situation (where $\rightarrow$ takes us to the limit):

$A_0 < A_1 < A_2 < A_3 < ... \rightarrow A$; but
$\lim_{i \to \infty} U(A_i) > U(A)$

Which is to say: the utility of the limit of the series of strategies is lower than the limit of the series of the utilities of the strategies. Consequently, there is no non-dominated strategy (and *a fortiori* no optimal strategy) available to Eve or to the recipient of St. Peter's Offer.

them. From there, we can generate a set of creation strategies, S, where s_i is 'create a world equivalent in value to one ranked ith,' and $s_\emptyset$ is the zero point: the world containing God and nothing else.

Just like in the Satan's Apple problem, there is a synchronic and a diachronic version of the puzzle. In the synchronic version, God surveys the set of strategies S. As God surveys the set of strategies, God sees that every strategy is dominated. Whichever $s_i \in S$ God adopts, God adopts a dominated a strategy. And by doing nothing, God adopts $s_\emptyset$.[12]

In the diachronic version, as God considers each world, God faces a choice: create this one, or consider a better one? And inevitably, 'consider a better one' is the dominant strategy. Indeed, choosing 'create this one' always violates IMPERM BELONGS DOMINATED. Thus, God will keep contemplating worlds endlessly (unless God performs a supertask. In that case, we are back to the synchronic version). And this just means choosing to maintain the status quo. We can illustrate the problem via table 1

Ordinal	Strategy	Worlds
$\uparrow$	$\uparrow$	$\uparrow$
$\emptyset + \omega$	s_{Ω_ω}	ωth above 0
$\emptyset + n$	s_{Ω_n}	nth above 0
$\emptyset$	$s_{\Omega_\emptyset}$	equal to 0
$\emptyset - n$	$s_{\Omega_{-n}}$	nth below 0
$\emptyset - \omega$	$s_{\Omega_{-\omega}}$	ωth below 0
$\downarrow$	$\downarrow$	$\downarrow$

Table 1: Ω, the Divine Creation Problem

A small aside. Decision theorists speak of 'small world' and 'grand world' decisions. The grand world decision determines what an agent does at every choicepoint in his or her life. Small world decisions focus on some subset of those decisions. Good decision theories are partition-invariant, so that good small world decisions agree with good grand world decisions. As I have framed things, the creation decision for God is a grand world decision. Since making a grand world decision just is to settle every decision in one act, if no grand world strategy is ruled out by norms of rationality or morality, neither is any small world strategy.

4   What To Do?

With even very weak dominance norms off the table, what's a rational (moral) agent to do? Detailed discussion of the best options can be found in Arntzenius *et al* and Bartha *et al*, and we have nothing to add to them. Instead, we will review some plausibly true things, which are sufficient to start the paradox.

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[12]Because all we have is a comparative ordinal ranking, choice of 0 is arbitrary. I've chosen the lonely world because it's a 'baseline' from which God's creation either adds or subtracts value.

4.1   Non Imperm Dominated

First norm: being dominated by an impermissible strategy is bad. This is a special case of a more general rule: being worse than an impermissible strategy is bad. Being dominated is a special and especially poignant way of being worse. But that is all we need for the paradox, so I will not assert the stronger rule.

NON IMPERM DOMINATED: if a is impermissible and a dominates b, then b is impermissible.

In the language of choice functions:[13] $\forall y((\exists x(x \notin \mathcal{C}(\beta)) \wedge x >_D y) \rightarrow y \notin \mathcal{C}(\beta))$

Unlike standard dominance norms (which it trivially follows from), or even Bartha $et.al.$'s IMPERM BELONGS DOMINATED, NON IMPERM DOM does not lead to disaster. On its own, it does not rule out any strategy; it simply ensures that no permissible strategy is dominated by an impermissible strategy. This, too, should be uncontroversial. It flies in the face of every intuition we have about good choices to permit a strategy that will be worse than an impermissible one come what may.

4.2   No Worst

The second norm: it's never okay to take the worst option. Once again, we will only need the version of this principle where 'worst' means 'dominated.' And once again, the intuition in favor of this rule is strong.

NO WORST: unless it is the only strategy available, if a is dominated by every other available strategy, then a is impermissible.

This is the MIN-exclusion function: $\forall x((x \in min(\beta) \wedge |\beta| \geq 2) \rightarrow (x \notin \mathcal{C}(\beta)))$. Note that this says nothing about which other strategies are or are not in $\mathcal{C}(\beta)$. Note also that the quantifiers in the norm range over available options. Once the worst available option has been removed from $\mathcal{C}$, NO WORST as done its work. Except when availability and permissibility interact in interesting ways, which (as we shall see) they do in the case of interest.

4.3   Sen's α

A final norm: removing options does not change which of the remaining is choice-worthy. Sen's α, also known as the independence of irrelevant alternatives (IIA), is a generally-accepted principle of rational

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[13]where $>_D$ means dominates

choice.[14]

IIA: $\forall x((x \in \gamma \subseteq \beta \land x \in \mathcal{C}(\beta)) \rightarrow x \in \mathcal{C}(\gamma))$

Roughly, IIA says: if an option in a problem is choice-worthy, then in every problem which includes that option that differs from the first problem only by the removal of some options, it remains choice-worthy. An option cannot go from choice-worthy to non-choiceworthy simply because some other options are no longer available. An example: if Lebron is one of the best basketball players in the world, then he is one of the best basketball players in the United States.

5   Possible Worlds and Classical Theism

Classical theists are committed to strong theses regarding the essence and existence of God. Namely:

DIVINE NECESSITY: God exists iff God necessarily exists.

ESSENTIAL DIVINE GREATNESS: God has all of God's important properties wherever God exists

DIVINE CREATION: God selects the actual world in a single act of creation.

Since God's important properties include the standard omni-properties and rationality, these combine for a theistic constraint on the plenitude of logical space.

CLASSICAL THEISTIC PLENITUDE: a world w is possible iff God could have created w.[15]

Our constraint is stronger than it looks. For instance, if we accept that a perfect God would countenance no unjustified evil, then we are committed to the view that unjustified evil is impossible. Likewise, if we are committed to the view that God is morally obligated to create an on-balance good world, then

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[14]See Sen [1970], Arrow [1963].

[15]A referee suggested an alternative formulation: a world w is possible iff w could be actualized supposing God wanted to. I suspect that my argument would go through using this formulation as well. The main contribution of CLASSICAL THEISTIC PLENITUDE is to rule impermissible worlds impossible, and therefore the strategies which involve creating them unavailable. This depends primarily on the doctrine of divine impeccability, and so long as that doctrine is in place, both formulations of the principle do the needed work.

we are committed to the view that no on-balance bad world is possible. CLASSICAL THEISTIC PLENITUDE is a strong restriction of our typical notion of modal space.

Strong, but warranted. The goal of CLASSICAL THEISTIC PLENITUDE is to take seriously on the one hand claims about divine necessity and the essentiality of key divine attributes, and on the other hand the standard Kripkean notion of a possibility as a maximal specification of how the world could be.

It is also a commonly held view amongst theists that there are some worlds God wouldn't create. Perhaps because doing so would be immoral, or would run afoul of some principle of rationality. For example, it's common to say that God is obligated to only create worlds in which all evils are either necessary for some greater good or to avoid some worse evil. While these worlds contain no logical or metaphysical incoherences, they are in deep conflict with God's normative nature and role as creator. Under the assumption that no world is best, it is this view, combined with CLASSICAL THEISTIC PLENITUDE, NO WORST, IIA and NON IMPERM DOMINATED that leads to paradox.[16]

6   The Paradox of Creation

With CLASSICAL THEISTIC PLENITUDE, NO WORST, IIA and NON IMPERM DOMINATED along with our assumptions about the goodness ordering, we can proceed to the paradox. First, I will give a version of the argument that makes all of the assumptions about the goodness ranking made in §2, including those that are not necessary but do make for an easier to follow presentation. Then I will give a version of the argument that relies only on the indispensable assumptions.

6.1   First Pass

Recall that we have mapped the creation strategies onto a set of ordinals. Assume for *reductio* that there is a creation strategy - which we shall call s_α - which is rationally impermissible for God to employ. Then by NON IMPERM DOMINATED, any strategy it dominates is also rationally impermissible for God to employ. Since, by the structure of the problem, strategy s_1 is worse than strategy s_2 iff s_2 dominates s_1, any strategy worse than s_α is thereby impermissible.

But by CLASSICAL THEISTIC PLENITUDE, the worlds included in s_α and any strategy that it dominates are impossible. For it would be irrational/immoral for God to create them, and God is essentially rational/moral.

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[16] As section 7.1 notes, an argument similar to mine could be run using only the essentiality of divine goodness and rationality as a premise. Thus, certain denials of CLASSICAL THEISTIC PLENITUDE will not completely solve the problems raised. I will stick with the full version in this presentation for simplicity and because it is the more common commitment.

Now consider $s_{\alpha+}$, the strategy mapped to the successor of α. Every strategy that it dominates has been found to be impossible, and therefore unavailable. But chopping the lower strategies off of a Satan's Apple problem yields another Satan's Apple problem. Consider a slight modification to the original Arntzenius *et al*, whereby God makes it impossible for Eve to choose fewer than 10 apple pieces. Nothing interesting changes.

And so the norms we defended apply to the new creation problem as much as to the old one. Furthermore, after the elimination of s_α and everything it dominates, we now have a worst strategy: $s_{\alpha+}$. By NO WORST, it would be rationally impermissible for God to employ $s_{\alpha+}$. We must deem any of the worlds in $s_{\alpha+}$ impossible, for God's creating one of them would be an act of irrationality.

What we have said about $s_{\alpha+}$ applies *mutatis mutandis* to $s_{\alpha++}$, $s_{\alpha+++}$, and so on. In fact, it applies to every member of the s_i. Formally, the argument is a transfinite induction, with s_α as the base case and an inductive hypothesis of: if s_i is impossible, then so is s_{i+}.[17] The induction completes the paradox. We have ruled every world impossible, using only CLASSICAL THEISTIC PLENITUDE, NO WORST, NON IMPERM DOMINATED, and the assumption that some strategy is rationally/morally impermissible for God to employ.

Tables 2-6 illustrate roughly how the argument works. First, we set up the initial decision problem with our assumption that some strategy is impermissible. We will mark impermissible strategies by striking them through.

Ordinal	Strategy	Worlds
↑	↑	↑
α^{++}	$s_{\Omega_{\alpha++}}$	equal to $\alpha^{++}th$
α^{+}	$s_{\Omega_{\alpha+}}$	equal to $\alpha^{+}th$
~~α~~	~~$s_{\Omega_{\alpha}}$~~	~~equal to αth~~
α^{-}	$s_{\Omega_{\alpha-}}$	equal to $\alpha^{-}th$
α^{--}	$s_{\Omega_{\alpha--}}$	equal to $\alpha^{--}th$
↓	↓	↓

Table 2: Ω, the Divine Creation Problem; impermissible stricken through

Next, we apply NON IMPERM DOMINATED to rule lower worlds impermissible and therefore by CLASSICAL THEISTIC PLENITUDE impossible:

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[17]Readers interested in working out the details can find the mathematical background in Jech [2006].

Ordinal	Strategy	Worlds
↑	↑	↑
α^{++}	$s_{\Omega_{\alpha^{++}}}$	equal to $\alpha^{++}th$
α^{+}	$s_{\Omega_{\alpha^{+}}}$	equal to $\alpha^{+}th$
~~α~~	~~$s_{\Omega_{\alpha}}$~~	~~equal to αth~~
~~α^{-}~~	~~$s_{\Omega_{\alpha^{-}}}$~~	~~equal to $\alpha^{-}th$~~
~~α^{--}~~	~~$s_{\Omega_{\alpha^{--}}}$~~	~~equal to $\alpha^{--}th$~~
↓	↓	↓

Table 3: Ω, the Divine Creation Problem; impermissible stricken through

Next, we eliminate the impossible worlds and strategies.

Ordinal	Strategy	Worlds
↑	↑	↑
α^{++}	$s_{\Omega_{\alpha^{++}}}$	equal to $\alpha^{++}th$
α^{+}	$s_{\Omega_{\alpha^{+}}}$	equal to $\alpha^{+}th$

Table 4: Ω', the new Divine Creation Problem

Next, we apply NO WORST to rule the worst world impermissible and sc classical theistic plentitude to rule it impossible:

Ordinal	Strategy	Worlds
↑	↑	↑
α^{++}	$s_{\Omega_{\alpha^{++}}}$	equal to $\alpha^{++}th$
~~$\alpha^{\pm}$~~	~~$s_{\Omega_{\alpha^{+}}}$~~	~~equal to $\alpha^{+}th$~~

Table 5: Ω', the new Divine Creation Problem

Once again, we eliminate the impossible worlds:

Ordinal	Strategy	Worlds
↑	↑	↑
α^{++}	$s_{\Omega_{\alpha^{++}}}$	equal to $\alpha^{++}th$

Table 6: Ω'', the new new Divine Creation Problem

And we apply NO WORST AGAIN, eliminate the impermissible worlds with CLASSICAL THEISTIC PLENITUDE, and repeat. After infinitely many steps, we run out of worlds.[18]

6.2 Goodness Assumptions Revisited

In §2, I set out some assumptions I was making about the goodness ordering over worlds. I labeled some of these dispensable, most notably the assumption that the ordering was nowhere dense and the assumption that the ordering was total. Here, I give a version of the argument of the previous section that does without those assumptions.

Let γ be an arbitrary strategy. Now consider the choice problem δ where God must choose from the set $\{\beta : \beta \geq \gamma\}$. That is: God is choosing from among γ and all strategies better than it. By NO WORST, as long as β has more than one member (which it must if there is no best world), $\gamma \notin \mathcal{C}(\delta)$. Next, Consider the full decision problem Ω. $\delta \subset \Omega$. By SEN'S α, $\gamma \notin \mathcal{C}(\Omega)$. That is, γ is not choice-worthy in the creation decision problem. Since γ was arbitrary, no world is possible.[19]

In this version of the argument, SEN'S α does the heavy lifting, since it allows us to make inferences about what is choice-worthy in the full decision problem by considering what is choice-worthy in problems dealing only with subsets of the strategies contained in it. Furthermore, in making this argument, we did not need to rely on the assumption of ordinal structure that enabled the presentation in tables 2-6. We also did not require the ranking to be connected. There could be incomparable chains of strategies, and this argument would still go through, so long as none of them have a best option. The only crucial assumptions are that the goodness ranking is a weak partial order and is converse non-wellfounded (this is the formal property associated with not having any chain with a maximal element).

6.3 Without Determinism

We have seen the argument with the superfluous ordering assumptions relaxed. Now, we can see it with other superfluous assumptions relaxed; namely: the assumption of theological determinism. Lots of

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[18]We did not use IIA in this presentation, but it is required for the version of the argument applied to non-total orders, dense orders, or in dealing with limit ordinals.

[19]I owe this extension of the argument to David Black.

theists have thought that perhaps God doesn't get to chose exactly what goes on in the world; God may allow indeterministic processes to run their course, with plans laid for the various possible outcomes. It will be helpful here to introduce a bit more jargon. We must distinguish between a possible world, and a possible world-seed. A possible world is a complete specification of reality. A possible world-seed is a partial specification of reality, laying down at least the laws of nature, the initial microstate, and the truth of any proposition that does not depend on the outcome of an indeterministic process. These will be more or less specific, depending on how many indeterministic processes will be allowed to operate. They must also include a plan of divine action for each 'path' through the various combinations of possible outcomes of indeterministic processes. In effect, possible world-seeds are what God ordains when theological determinism is false.

In order to drop the deterministic assumption from our argument, we must exchange possible worlds for possible world-seeds as our bearers of value. Just as I have remained silent on how possible worlds are to be valued, I will remain silent on how possible world-seeds are to be valued.[20] I assume that they have values, and that the goodness ranking on possible worlds-seeds is a converse non-wellfounded weak partial order (the same formal structure as the one on possible worlds). So in the final version of the argument, our creation strategies are no longer equivalence classes of equally valuable possible worlds, but equivalence classes of equally valuable possible world-seeds. This is the only change required; once we have adjusted what we think of as strategies, we can proceed as above. We will be forced to modify our conclusion a bit; in addition to saying that God could create even very bad worlds, we must also say that God can create very bad world-seeds - in effect, that no gamble is too risky for God.

7   Ways Out

When faced with paradox, we escape by denying one of the premises that got us into it. That leave us with the following options: we can deny classical theism, we can replace the norms in §4 with new norms, or we can abandon the idea that some worlds are impermissible for God to create. I will argue for this third option by arguing against the first two.

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[20]It is likely that possible world-seeds will receive their values in the same way that lotteries do. This can get mathematically strenuous when dealing with infinite sets of worlds or worlds of infinite value. See Colyvan and Hajek [2016].

7.1   Denying Classical Theism

One option is to deny classical theism. This option comes in various flavors. The most extreme is atheism. Discussing atheism's advantages and disadvantages would take us beyond the scope of this paper, so I will set it aside for now to explore the options open to those committed to remaining theists.

Less extreme flavors lead to various versions of non-classical theism. Richard Swinburne's theism is among the most conservative of these, and as a result problems for it will infect more liberal ones.[21]

Denying classical theism only helps if it falsifies CLASSICAL THEISTIC PLENITUDE, without which the crucial step from a world being impermissible to create to it being impossible fails. Because Swinburne thinks that God only exists contingently, he can safely deny CLASSICAL THEISTIC PLENITUDE. But that's not enough. Swinburne still accepts the essentiality of key divine attributes.[22]

Most significantly, he accepts the essentiality of divine rationality and of divine morality. Since these were the attributes that caused the problem, we can recreate a modified version of the paradox using them. Instead of using entire worlds as creation strategies, we use partial worlds that don't say whether God exists but fix everything else. Since the formal apparatus that generated the paradox doesn't care whether the strategies are complete worlds or partial worlds, the argument will proceed exactly as before. Deniers of Classical Theism can only remain theists by accepting the possibility of divine irrationality or divine immorality.

7.2   New Norms?

Weak though they are, we have used some norms in deriving our paradox. Advocates of satisficing will deny them.[23] If IIA or NO WORST fails, then there is room for other, more content oriented norms. Defending IIA would take us too far afield, so here I will only consider replacements for NO WORST.[24] Suppose the replacement norm is: ensure that every creature lives a good life. If that is the only norm, then when God is faced with the creation decision, God's only choiceworthy options will be those in which every rational creature lives a good life.

That's all well and good for agents creating worlds. But what of Eve? This norm provides no guidance whatsoever for her. Yet it seems patently irrational for Eve to take infinitely many pieces of apple. So we must add a norm for her, perhaps: don't do anything that ejects you from paradise. Of course, examples

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[21]Swinburne [1977], [1979].

[22]Swinburne [1994].

[23]For further discussion, see Howard-Snyder and Howard-Snyder [1995], [1996], van Inwagem [2006], Langtry [2008] Sullivan [2013], and Kraay [2013].

[24]For defenses of IIA, see Sen [1970] and Arrow [1963]

of discontinuity in the limit abound. The sort of piecemeal approach to which we would be driven by adopting only content-centric norms quickly takes on an unwieldy, disunified flavor.

In pressing this objection, it's important to distinguish between a theory of obligation and a theory of betterness. In the formal framework we've been working with, the theory of betterness is coded in the ranking of options, while the theory of obligation is coded in the choice function. We have given some formal constraints on each. But our constraints on the theory of betterness allow us to be neutral over a broad range of possible theories, including those that countenance a plurality of fundamental values and therefore involve content-specific principles governing tradeoffs. Thus, in the theory of betterness, a wide range of content-specific norms can happily co-exist with out structural constraints. By contrast, adding content-specific norms that apply to a creator god to our constraints on the theory of obligation results in paradox. Unless there is a viable set of replacement constraints that do not entail ours, we must choose between having something systematic to say about obligation and having content-sensitive norms that apply to a creator god.

Moreover, each of the piecemeal norms will be motivated by intuitions from cases. If it is to succeed, it must not entail NO WORST. By its very nature, the piecemeal strategy cannot rely on structural or unificatory principles that entail that it's sometimes okay to do your worst. Which means that there must be cases where it is, intuitively, permissible to take the worst option. I know of none. Even when the result seems very good in some absolute sense, I am left feeling critical of the agent who has done her worst.

However, for those who feel the intuitive pull of NO WORST less strongly than I do, I do have an argument on its behalf. Recall that NO WORST eliminates the worst available option (if there are more than two options, and there is a worst one). There is an asymmetry between the worst option and other options which are merely not best. We can see this when we think about reasons for acting. Reasons to choose an act fall into two broad categories: those stemming from the intrinsic quality of the act, and those stemming from its place in the array of acts an agent is choosing between. By definition, a worst option has the fewest reasons in support of it. It has the least intrinsic goodness, and it is better than nothing else. So from the standpoint of intrinsic quality, there is less to be said for it than any other option, and from the standpoint of comparative reasons, there is nothing to be said for it at all. Even the second-worst option has something to be said for it comparatively; it's better than something. Not so for the worst. So there is a unique kind of badness that worst options exhibit, even intrinsically very good ones.

But in some cases it may be tempting to think that the intrinsic quality of the worst option is enough to justify choosing it. There is a class of rival norms that behave this way, which the Howard-Snyders

employ in their response to Rowe's improvability argument.[25] Satisficing norms.

Satisficers make do with good enough. Extreme satisficers do so even when a best option is available. Moderate satisficers only do so when there is no best. God only needs to be a moderate satisficer for this way out to work. Satisficing itself comes in several varieties.[26] *Absolute satisficers* say: "good enough is value greater than n utility," for some n. *Relative satisficers* define good enough in relation to the options available, and say: "good enough is better than some," for some filled-out notion of 'some.'

Relative satisficing is inconsistent with IIA, and is monumentally tricky to define in infinite cases. So we shall dismiss it. Absolute satisficing is inconsistent with NO WORST. But this is the option where we ditch NO WORST, and so an absolute satisficing norm seems like a decent substitute. Unfortunately, spelling out 'good enough' in a way that does not yield unhappy results is difficult.

As Hurka explains it: "[absolute] satisficing selects its threshold of satisfactory goodness without reference to the alternatives an agent has. It selects some absolute level of goodness in outcomes as satisfactory and requires agents to aim at that. When a situation is and will remain below that absolute threshold, an agent's duty is the same as under maximizing: she must do everything to move it toward satisfactory goodness.[27]" One natural way to try and spell out 'good enough' is to select an amount of utility, say 77, and allow any decision that produces at least that much. If no such option exists, then a maximizing rule kicks in.

Unfortunately, we can create problems where this rule offers no guidance even though we think it ought to. Suppose that the threshold of 'good enough' is 77, and that we have an agent whose utility is linear in dollars. Then we can offer her a variant of the blank check problem for which absolute satisficing has nothing to say.

The original blank check problem is one of the simplest examples of discontinuity in the limit. You are offered a blank check by someone with an infinite bank account. You can fill in any real number. The absolute satisficing norm we are considering says: write a number greater than 77, and you're good to go. But we can modify the blank check problem to make the norm go silent.

Modified Blank Check: Suppose, instead of an infinite bank account, I have $77 exactly in my account. Furthermore, my account is at the Real Bank. The Real Bank has extremely

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[25]Howard-Snyder and Howard-Snyder [1994], [1996] and Rowe [1996]. In brief, Rowe argues: if there is no best world, then God must create one that is less than best. So God must have a standard for what counts as minimally creatable. Whatever standard God adopts is improvable: it might have excluded more worlds. Better Gods have better standards. But since there is no best God, there is no best standard. So God can't be perfect, and therefore does not exist. My own response to this argument should be clear: God neither has nor needs a standard of creatability. Everything is fair game.

[26]Hurka [1990]

[27]Hurka [1990].

fine-grained accounting software; it can say what precise real number my balance is at. It has

one other rule: any check that would drop an account to 0 or below is null and void. I then

offer you a blank check. You can fill in any number in the interval [0, 77).

Thus, you have no available option that fulfills the criteria for satisficing. And there is no maximizing option, because whatever you pick, you could have had a bit more. And yet, if we are to expect satisficing to help in blank check cases at all, it ought to help in this one. Moreover, since 77 was an arbitrary choice, whatever number we use as the threshold is susceptible to this sort of case.

The modified blank check case reveals a structural weakness of absolute satisficing norms. When there is no 'good enough' option available, they offer no guidance in cases with infinitely ascending options. Even when that infinite ascent is relatively well-behaved. But satisficers ought to be able to handle these cases.[28] The failure of satisficing norms completes the defense of NO WORST and pushes us back to the disunified, piecemeal approach. We can do better.

7.3   Exempting God from Normative Constraints

There remains one last way out: deny the premise for reductio, that some world is impermissible to create. It has been defended by Marilyn McCord Adams. Adams denies that God has any obligations to (or concerning) creatures. This is equivalent to my claim that no norms govern the choice of world to create. But Adams comes to her conclusion by markedly different reasoning from my own. With Anselm, she notes a 'size gap' between god and creatures; compared to the limitless greatness of a god, created beings 'barely exist at all.' God is therefore not a part of the network of rights and duties that bind creatures together.[29]

Adams has done much to integrate this view into a larger philosophical-theological picture. Thus, her work gives answers to the many questions that naturally follow. One example: Adams's position - and by extension my own - does not rule out divine action for reasons. Not all reasons compel, and norms/obligations are the stuff of compelling reason. Thus, there is no threat to the conception of God

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[28]We could, as the Howard-Snyders do, try more sophisticated definitions of the threshold. Perhaps we simply choose a world as 'good enough,' and allow any action that leaves the world as good as or better than that world. Coupled with the ordinal structure of the goodness of worlds, this will make finding infinitely-ascending chains of worlds below this one to construct something like a modified blank check case difficult. But it will have other unhappy results. Suppose my world is very good, so good that nothing I can do could push it below the threshold. Perhaps I inhabit a large multiverse, an infinity of individual universes within which surpass the threshhold, but in which there are only a few people in my own spacetime. The rest of the multiverse is so good that even if I kill everyone I can - producing a large net negative of evil - enough wonderful disconnected universes should be able to balance it off. So I am free to behave as badly as I please. But living in a good world is no excuse for poor behavior. Hurka [2004] presses a line similar to this one in arguing that satisficing only seems desirable when 'subjective' values are concerned. And clearly, in the case we care about, objective values (if any there be) are involved.

[29]McCord Adams [1999], [2006].

as an agent. But there is reason to rethink our notion of divine agency and its relationship to our normal notions of morality and rationality.

8   Conclusion

I have offered a novel argument for an old conclusion. Given plausible assumptions, God is not constrained by moral or rational norms in God's choice of world to create. Reflection upon creation as a grand world decision problem with no best strategy shows that it is discontinuous in the limit. Reflection upon problems of that type leads us to some very plausible general norms: NON IMPERM DOMINATED, IIA, and NO WORST. Combining these norms with Anselmian theism and the thesis that there is a world that God is morally or rationally obligated not to create yields a paradox: no world is possible. This is the paradox of creation.

As with any paradox, there's a way out for each premise we can deny. I have raised problems for all but one. Denying classical theism without embracing atheism ends in accepting the possibility of divine irrationality and/or immorality. Replacing the plausible norms implicated in the paradox ends in an ad hoc, piecemeal approach to discontinuity in the limit. This leaves one alternative for those who wish to remain theists: deny that God has obligations altogether.

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