

The Metaphysics of Perfect Beings

Michael J. Almeida



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The Metaphysics of Perfect Beings

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For Sam, Zoe, and Yvette

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Introduction

The exalted concept of God inherited from St. Anselm describes a being in possession of every divine perfection. The Anselmian perfect being has unlimited factual information, unlimited power, unlimited moral goodness, unlimited prudential information, unlimited rationality, and unlimited freedom. These limitless resources seem to guarantee a priori that the moral and rational choices of perfect beings are enviably simple and effortless.

But this a priori guarantee is misleading. Analytic philosophy has seen major advances in recent years in theories of vagueness, the metaphysics of modality, theories of dynamic choice, the metaphysics of multiverses and hyperspace, the logic of moral and rational dilemmas, and metaethical theory. These advances have generated a series of new and fascinating challenges to the Anselmian conception of God. Thomas Morris observed early in his classic work *Anselmian Explorations*:

The concerns of the medievals have been rediscovered and have been connected up with recent developments in logic, metaphysics and epistemology in surprisingly fruitful ways.¹

Indeed, the advances in metaphysics, metaethics, epistemology, and theories of vagueness provide the resources to formulate the new challenges to the Anselmian conception of God with an unusual degree of precision.

As a matter of philosophical method, I approach these challenges as opportunities to illuminate the Anselmian position. The investigation aims to make precise the basic Anselmian view that a perfect being is essentially omnipotent, essentially omniscient, essentially morally perfect, and necessarily existing.

It is central to the method advanced that the deliverances of careful reflection might be radically mistaken. Careful reflection does not make it obvious, for instance, that an essentially *morally perfect* being must fulfill every moral requirement. We simply do not know a priori that no essentially perfectly good being could be in an *unavoidable moral dilemma*. Again, careful reflection does not make it obvious that an essentially omniscient being must know every true proposition. We simply do not know a priori that essentially omniscient beings know every *indefinitely true* proposition.

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Further, careful reflection does not make it obvious that an essentially perfectly good being could not permit a single instance of preventable evil. We simply do not know a priori that no essentially perfectly good being could be in a *Lifeguard Situation*. In *Lifeguard Situations* a perfect being can prevent each instance of undeserved and preventable suffering but cannot prevent every instance of undeserved and preventable suffering. And similarly for a priori conclusions regarding any other divine attribute.

Roy Sorensen has argued that situations of this sort illustrate the phenomenon of *conflict vagueness*. Unfamiliar contexts can expose otherwise hidden dualities in otherwise familiar concepts.

. . . many words have *surprising* borderline cases. The surprise is that our usage can be explained by assigning distinct meanings to the word. This multiplicity is revealed by the fact that the rival interpretations disagree on whether the term applies to the borderline case . . . Imagine that Jupiter's moon Titan acquires a moon. Would Titan's moon also be a moon of Jupiter? This question pits a transitive conception of "moon" against a non-transitive conception. Such borderline cases reveal that there are two rules we could be following.²

Sorensen urges that this unusual situation reveals an epistemological conflict between the rival conceptions of "being a moon." The concept of being a moon is vague between a transitive and nontransitive interpretation. And the moon of Titan is a *borderline moon* of Jupiter. These rival conceptions generate no logical inconsistency since only one of the conceptions can be correct. But the rival conceptions do generate an epistemological conflict since, Sorensen urges, it is impossible to know which interpretation is correct.

The method that Sorensen advances nicely shows that unfamiliar contexts sometimes produce semantic surprise. The surprise is the revelation of an occluded conceptual duality. I am advancing the view that these unfamiliar contexts also produce *metaphysical surprise*. The surprise is the revelation of an occluded metaphysical fact. It is an otherwise occluded metaphysical fact that moral perfection is consistent with not fulfilling every moral requirement. The metaphysical fact is revealed in the unfamiliar context of an essentially morally perfect being facing a necessary moral dilemma. It is an otherwise occluded metaphysical fact that omniscience is consistent with not knowing every true proposition. The metaphysical fact is revealed in the unfamiliar context of an omniscient being facing indefinite propositions. It is a surprising fact revealed in *Lifeguard Situations* that morally perfect beings might permit some instances of undeserved and preventable suffering. These are among the metaphysical surprises that are revealed in unfamiliar contexts.

There are important contrasts in the rival a priori approaches of J. Howard Sobel and John Mackie. Sobel considers the concept of omnipotence to be fully determinable a priori.

Rather than practice the doctrine of Humpty Dumpty on “omnipotence” and ordinary synonyms of it such as “almightiness,” I have tried to call a spade a spade, and having done that to defend the possibility of “omnipotence” *naturally understood*. Questions concerning omnipotence—what it comes to and whether it is possible—are *properly prior* to questions of God and omnipotence.³

The natural concept of omnipotence is just the concept untried in unfamiliar contexts. It is the concept understood prior to its application in less familiar contexts. Sobel is critical of Plantinga’s departure from this method.

Plantinga suggests that we may, without answers to the first general question about omnipotence, shift in reasonable hope of doing better to the second particular question of “God’s omnipotence.” After finding difficulties with two definitions of omnipotence, he says: “But perhaps . . . even if we cannot give a *general* explanation of omnipotence, we may be able to say what *God is omnipotent* comes to.” This methodology complicates matters and is strange.⁴

It is implicit in Sobel’s method that unfamiliar contexts do not produce metaphysical surprise. It could not be an occluded metaphysical fact, on Sobel’s method, that essential shortsightedness is consistent with omnipotence.⁵ But this a priori method seems mistaken on this score. For all anyone knows a priori, it is a necessary truth that every sighted being is shortsighted. For all we know a priori, there is no farthest-sighted being just as there is no greatest positive integer.

John Mackie famously offers a very brief version of the logical problem of evil. Mackie approaches the problem with a similar degree of confidence in our a priori knowledge of the traditional attributes of God: “In its simplest form the problem is this: God is omnipotent; God is wholly good; and yet evil exists. There seems to be some contradiction between these propositions, so that if any two of them were true the third would be false.”⁶ Mackie thereafter asserts that any adequate solution to the logical problem of evil must simply abandon the proposition that God is omnipotent, or simply abandon the proposition that God is wholly good, or simply abandon the proposition that there exists evil. It’s out of the question that, on the contrary, some unfamiliar context might reveal that our a priori intuitions about the concept of omnipotence or perfect goodness are not especially well-informed.

Besides these half-hearted solutions, which explicitly reject but implicitly assert one of the constituent propositions, there are definitely fallacious solutions which explicitly maintain all the constituent propositions, but implicitly reject at least one of them in the course of the argument that explains away the problem of evil.⁷

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But what is the nature of the fallacy that is committed in these solutions? Mackie once again.

I suggest that in all cases the fallacy has the general form suggested above: in order to solve the problem one (or perhaps more) of the constituent propositions is given up, but in such a way that it appears to have been retained, and can therefore be asserted without qualification in other contexts . . . These fallacious solutions often turn upon some equivocation with the worlds “good” and “evil” . . . or about how much is meant by “omnipotence.”⁸

Any suggested revisions to the limits of omnipotence Mackie regards as either linguistic abuse of the term *omnipotence* or misunderstanding of the concept of omnipotence.

In contrast to Mackie and Sobel, it’s perfectly possible that our a priori intuitions about the concept of omnipotence or omniscience or perfect goodness are just poorly informed. Our intuitions about the concept of omniscience, for instance, are generally not informed at all about perfect knowledge in contexts of vagueness, and our intuitions about the concept of perfect goodness are generally not informed about perfect goodness in contexts of moral or rational dilemmas.

Unfamiliar contexts can allay reasonable doubts about the accuracy of untutored intuitions and the influence of partisan intuitions. Thomas Morris adverts to his a priori intuition that a necessarily good being could not actualize worlds with certain amounts of disvalue and draws some important metaphysical conclusions. “. . . If there is a being who exists necessarily and is necessarily omnipotent, omniscient, and good then many states of affairs which otherwise would represent genuine possibilities . . . are strictly impossible in the strongest sense.”⁹ According to Morris, it could not be an occluded metaphysical fact that essential perfect goodness is consistent with the actualization of a disvaluable world. We could not learn, for instance, that a perfect being might find itself in a *Lifeguard Situation*. These are situations in which a perfect being can prevent each instance of undeserved suffering but cannot prevent *every* instance of undeserved suffering. The intuition that an essentially perfectly good being could not actualize a bad world might not be especially well-informed. We might well discover that a perfect being could find itself in a *Lifeguard Situation*.

We also might discover that some credible divine command theory permits variation in moral standards across possible worlds. Suppose, for instance, that *part* of what makes an action right is the fact that God commands that action. God’s commands might supervene on many nonmoral facts, including God’s purposes, intentions, and plans; and God’s purposes, intentions, and plans might vary from world to world. In some worlds God’s plans for Smith might include a calling to the moral ideals of a monastic life. In

other worlds God's plans for Smith might include a calling to less extraordinary moral ideals. Certainly, it seems, there might have been variation in God's plan for salvation history. And as those divine plans vary, the moral requirements on individual agents will vary as well. Sufficient variation in moral standards would allow a necessarily good agent to actualize a world that is disvaluable on moral standards prevailing in some worlds and not disvaluable on moral standards prevailing in other worlds.

Let me turn to a brief description of forthcoming chapters. In Chapter One I examine *Atheistic Arguments from Improvability*. Every atheistic argument from improvability assumes some version of the *Improvability Thesis* and some version of the *No Best World* hypothesis. The strongest *Improvability Thesis* is inherited from Gottfried Leibniz and requires that an essentially morally perfect being must actualize the best possible world. The *No Best World* hypothesis, in its simplest form, states that for any possible world that a perfect being might actualize there is a better possible world that a perfect being might actualize. The hypothesis entails that there is no best actualizable world. And the *Atheistic Argument from Improvability* concludes that a perfect being could actualize no world at all.

Bruce Reichenbach and George Schlesinger argued early that the strong *Improvability Thesis* demands the impossible. It cannot be a moral requirement on essentially morally perfect beings that they actualize the best possible world in contexts where there is no best possible world.

Given . . . an infinite hierarchy of possible beings and hence the limitlessness of possible increase in [the degree of desirable states, DDS] how does the . . . universal ethical rule apply to God “. . . increase the DDS as much as possible?” But no matter to what degree the desirability of a state of a given being is increased it is always logically possible to increase it further. . . . [T]hus it is logically impossible for God to fulfill what is required by the universal ethical principle and therefore he cannot fulfill it, and is therefore not obliged to fulfill it. . . . Thus the problem of evil vanishes.¹⁰

As it turns out, it is much more difficult to undermine *Atheistic Arguments from Improvability*. According to more recent versions of the argument, perfect beings choosing from an infinite sequence of improving worlds are governed by moral principles weaker than the Leibnizian *Improvability Thesis*. There is no moral requirement to actualize the best possible world when choosing from an infinite sequence of improving worlds. I examine in detail *Rowe's Argument from Improvability*. It is the most powerful and well-articulated version of the argument. But the a priori argument Rowe offers for his *No Best World* hypothesis and *Principle B* are no better than the a priori arguments against those principles. I conclude that we have no reason to believe the argument is sound.

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In Chapter Two, *Rational Choice and No Best World*, I examine infinite dynamic choice situations. In dynamic choice situations a rational agent is offered a sequence of options, and in infinite dynamic choice situations the sequence of options is limitless. Let Thor be an omniscient, omnipotent, and perfectly rational agent. The infinite sequential choice problem Thor is facing might begin at any possible world w_n in the sequence from w_0 to w_∞ . It does not matter where the problem begins. Once some world w_n in the sequence has been selected, Thor has the option to *actualize* w_n or to *exchange* w_n for the next better world in the sequence w_{n+1} . Choosing to actualize any world in the sequence w_n terminates the game. If Thor decides to exchange w_n for w_{n+1} , then he again faces the decision whether to actualize w_{n+1} or to exchange w_{n+1} for the better world w_{n+2} , and so on. Since Thor is omniscient, he knows that the sequence is infinite and has no upper bound.

Among the a priori principles purportedly governing perfectly rational agents is the *Rational Perfection Principle* and the *Consistency Principle*. According to the *Rational Perfection Principle* it is necessary that an essentially rationally perfect agent has a rational requirement to perform A only if the agent performs A. According to the *Consistency Principle* it is possible for a perfectly rational agent to satisfy each of his rational requirements. The set of rationality assumptions together generate a contradiction. But if we accept rationality conditions R0–R3, then the *Consistency Principle* and the *Rational Perfection Principle* are surprisingly *invalid* and so cannot govern the choices of essentially perfectly rational agents. I argue that we should probably retain the *Consistency Principle* and the *Rational Perfection Principle* and abandon the position that an essentially perfectly rational being cannot actualize a world that is less good than another he would otherwise have actualized. The unfamiliar infinite dynamic choice situations display the surprising metaphysical fact that essentially perfectly rational agents are not in general required always to select the better option.

In Chapter Three, entitled *On Evil's Vague Necessity*, I examine Peter van Inwagen's challenge to the *standard position on evil*. According to the standard position on evil, an essentially omnipotent, essentially omniscient, essentially perfectly good agent cannot permit a single instance of unjustified evil. Here is William Rowe on the standard position:

An omniscient, wholly good being would prevent the occurrence of *any intense evil it could*, unless it could not do so without thereby losing some greater good or permitting some evil equally bad or worse.¹¹

According to Peter van Inwagen, the standard position on the existence of evil is false. A perfect being would prevent every instance of unjustified evil only if there exists some minimum amount of evil that is necessary to the purposes of a perfect being. The minimum evil necessary for divine

purposes is the least amount of evil such that any greater evil is unnecessary for divine purposes. Van Inwagen advances the *No Minimum* argument to show there is no amount of evil that is the minimum necessary for divine purposes. The argument concludes that for any amount of evil such that any greater evil is unnecessary for God's purposes, there is some lesser amount of evil such that any greater evil is unnecessary for God's purposes. Call that van Inwagen's *No Minimum Thesis*.

Supervaluationist analyses show that the *No Minimum Thesis* is false. Instead, it is the *Vague Minimum Thesis* that is true in the situation van Inwagen describes: "There is no amount of evil k_n , ($k \geq k_n > 0$) in sequence S such that for every increment i ($i > 0$) and every admissible precisification, k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes." The *Vague Minimum Thesis* presents no problem for the standard position on evil. In van Inwagen's unfamiliar context, a perfect being acting in compliance with the standard position on evil might permit an amount of evil k_n that is *indefinitely unnecessary* for divine purposes. Any amount of evil that is indefinitely unnecessary for divine purposes is on the borderline (or on a borderline of a borderline in the higher-order case) of amounts of evil that are unnecessary for divine purposes. But a perfect being would not permit any amount of evil that is *definitely unnecessary*. An amount of evil k_n is definitely unnecessary for divine purposes just in case it is unnecessary on every admissible precisification of the predicate "unnecessary for divine purposes."

The *No Minimum Thesis* is also falsified on degree theoretic and epistemicist analyses. And there are precise formulations of the standard position on evil forthcoming for degree theorists and epistemicists. In general the unfamiliar context provides the opportunity for a much more accurate formulation of the standard position on evil.

In Chapter Four, *The Problem of No Maximum Evil*, I consider a much-neglected challenge to the standard position on evil presented in Warren Quinn's well-known *puzzle of the self-torturer*. Quinn's puzzle of the self-torturer presents a serious problem for the standard position on evil. If there is a possible sequence S from k_0 to k , such that for some increment i , it is rational to exchange k_0 for k_p , . . . , k_{2i} for k_{3p} , and k_m for k , then the standard position on evil is badly mistaken.

According to the puzzle of the self-torturer, an essentially omniscient, essentially omnipotent, and essentially perfectly good being would have *no reason* to prevent any upward exchange in the sequence from k_0 to k despite the fact that the excruciating amount of pain in k could have been prevented without losing of a greater good or permitting some evil equally bad or worse. And self-torturers can, of course, be multiplied indefinitely. In general the problem illustrated in the puzzle of the self-torturer is that there is no maximum amount of evil k_n in S such that an essentially omniscient, essentially omnipotent, essentially perfectly good being would prevent any amount of evil greater than k_n . Call that the *Problem of No Maximum Evil*.

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The *Problem of No Maximum Evil* differs importantly from the problem of *No Minimum Evil*. According to van Inwagen, since there is no least amount of evil necessary for divine purposes, a perfect being may allow some amount of evil greater than the minimum necessary for divine purposes. The *Problem of No Maximum Evil* entails that a perfect being may allow *any amount* of evil greater than the minimum necessary for divine purposes. There is no maximum amount of pointless evil that a perfect being can permit.

In response to Quinn's paradox, Frank Arntzenius and David McCarthy propose the *Maximum Thesis* that there is for each rational agent a unique solution to Quinn's paradox. Their solution to Quinn's paradox entails that there is no *Problem of No Maximum Evil*. For any increment i there is guaranteed to be some pairwise exchange such that k_{ni} is painless and $k_{(n+1)i}$ is painful, and rational agents cannot exchange the painless setting k_{ni} for the painful setting $k_{(n+1)i}$.

Contrary to Arntzenius and McCarthy, there is a model in supervaluation semantics for the paradox of the self-torturer. The situation described in Quinn's paradox is in fact possible. Indeed, supervaluation semantics falsifies Arntzenius and McCarthy's *Maximum Thesis*. The thesis is based on assumptions regarding penumbral connections between the predicates "is painful" and "is more painful than" that are simply mistaken.

There are several alternative solutions to the *Problem of No Maximum Evil*. In Quinn's unfamiliar context, a perfect being acting in compliance with the standard position on evil might permit agents to experience any setting k_{ni} in S such that k_{ni} is *indefinitely painful*. Any setting that is indefinitely painful is on the borderline of painful experiences. But a perfect being cannot permit any agent to experience any setting k_{ni} in S such that k_{ni} is *definitely painful*.

The *Problem of No Maximum Evil* provides another opportunity for a more accurate formulation of the standard position on evil. The standard position does not prohibit essentially perfectly good beings from permitting widespread painful experiences. The standard position prohibits essentially perfectly good beings from permitting any *definitely painful* experiences.

In Chapter Five, entitled *On the Logic of Imperfection*, I introduce a *Logic of Imperfection* and argue that Anselmian perfect beings might not be governed by *Moral Perfection Principles*. There are several interesting theses in the *Logic of Imperfection* that together provide a consistent explanation of how an Anselmian perfect being could fail to fulfill some moral requirement or other. I discuss various theorems (and nontheorems) in the logic, including moral *Principle A*, the *No Best World* hypothesis, the *Moral Perfection Principle*, the *Ought-Can Principle*, the *No Conflicts Thesis*, and *Necessary Moral Dilemmas*. According to the *Logic of Imperfection*, it is possible that Anselmian perfect beings fail to fulfill some moral requirement, because it is *necessary* that Anselmian perfect beings fail to fulfill some moral requirement.

I argue that the *Logic of Imperfection* explains well how an Anselmian perfect being might fail to fulfill a moral requirement. But the logic also allows Anselmian perfect beings to fulfill fewer moral requirements rather than more moral requirements. And there is no explanation at all for how a perfect being is allowed to fulfill fewer moral requirements.

In Chapter Six, *Supervenience, Divine Freedom, and Absolute Orderings*, I examine property-identical divine command theory (PDCT), the *Free Command Thesis*, and the *Supervenience Thesis*. PDCT maintains that the property *being obligatory* is identical to the property *being commanded by God*. PDCT rejects the proposal that being obligatory is conceptually identical to being commanded by God. Competent users of moral language provide compelling evidence that these terms do not have the same meaning. But PDCT claims that this is just what we should expect. Conceptual relations in moral language do not in general reveal important metaphysical relations.

Further, PDCT does not maintain that being commanded by God is a *right-making characteristic*. PDCT does not maintain that what makes an action morally obligatory is the fact that it is commanded by God. It is perfectly consistent with PDCT, for instance, that an action is morally obligatory if and only if the action maximizes overall value or the action is universalizable. It would of course follow immediately that an action is commanded by God if and only if the action maximizes overall value or the action is universalizable. But PDCT is also consistent with the claim in traditional divine command theory that God's commanding an action is a right-making characteristic.

Mark C. Murphy contends the *Free Command Thesis* and the *Supervenience Thesis* together pose a serious threat to property-identical divine command theory.¹² The *Free Command Thesis* states that God's commands are free only if those commands are not entirely fixed by nonmoral facts in the world. And the *Supervenience Thesis* expresses the well-known metaethical view that all moral properties supervene on nonmoral properties. The thesis is widely regarded among moral theorists as an a priori or platitudinous moral truth.¹³

But the metaphysical identity of being obligatory and being commanded by God does not preclude the possibility that being obligatory *supervenes* on being commanded by God. Defenders of property-identical divine command theory can hold that being obligatory is entirely fixed by nonmoral facts that include facts about God's commands. The *Supervenience Thesis* is therefore satisfied. Defenders can also hold that God's commands are included in the set of nonmoral facts and not entirely fixed by them. The *Free Command Thesis* is therefore satisfied.

The *Supervenience Thesis* and the *Free Command Thesis* together provide good reason for denying that there is any absolute moral ordering of possible worlds. The ordering of possible worlds is instead relative to the moral standard *S* obtaining in each world *w*, moral standards

vary from world to world, and God's free commands determine (in part) the moral standard obtaining in each world. But if the ordering of possible worlds is not absolute, then it is possible that both there is no best possible world and God might have actualized a best possible world. This consequence is particularly important since there is no argument that choosing a moral standard relative to which there is no best world displays any moral imperfection at all. Another important consequence of the relative ordering of possible worlds is that divine perfection can be straightforwardly reconciled with divine freedom. There is no incoherence in the view that perfect beings might *freely* actualize a best possible world.

In Chapter Seven, on *Vague Eschatology*, the focus is on the *Degree of Goodness Argument*. Theodore Sider has proposed that no principle of justice that respects *degrees of goodness* among moral agents could distribute rewards and punishments in such a way that some people go determinately and eternally to heaven and other people go determinately and eternally to hell. There is therefore no moral justification for sending some people determinately and eternally to heaven and other people determinately and eternally to hell.

But the *Degree of Goodness Argument* advances a proportionality condition J' on principles of justice that is importantly mistaken.

J' For any moral agents S and S', if S is not definitely morally worse than S' then S and S' should not be treated in very unequal ways.

There are situations in which moral agent S is not definitely morally worse than S', and S is among the irredeemably evil while S' is on the *borderline* of the irredeemably evil. There is an important and nonarbitrary moral difference between S and S' in those situations, and those moral agents *should be* treated in very unequal ways.

The view that there is an important and nonarbitrary moral difference between moral agents S and S' commits us to the *Vague Depravity Thesis* and the *Moral Difference Thesis*. The *Vague Depravity Thesis* ensures that there is a vague transition between moral states that are not irredeemably evil and moral states that are irredeemably evil. And the *Moral Difference Thesis* asserts that there is an important moral difference between moral agents that are irredeemably evil and those moral agents that are borderline irredeemably evil.

The view that there is an important and nonarbitrary moral difference between S and S' also commits us to rejecting the view that moral agents that instantiate moral states that are both irredeemably evil on *some* precisification of "irredeemably evil" ought to be treated in the same way.

In Chapter Eight, entitled *Theistic Modal Realism, Multiverses, and Hyperspace*, I examine some recent solutions to the *Less-than-Best Problem*. The *Less-than-Best Problem* is the proposition that our world, with all of its evil, is not (or is certainly not likely to be) among the best possible worlds.

One theistic response to the *Less-than-Best Problem* is to maintain that every possible world is a *real, concrete universe* out there. *Theistic Modal Realism* takes the position that our world is simply one among an infinite plurality of concrete universes actualized in logical space. If there is a best possible universe, theistic modal realists argue, there is no moral reason why it should be *our* universe. There is no moral reason why the individual inhabitants of our world should enjoy the best possible experiences rather than the individual inhabitants of other real concrete universes. And of course if there is no best possible world, then there is reason to expect that the inhabitants of no possible world enjoy the best possible experiences. I argue that in general, theistic modal realism has the resources to resolve a series of problems derived from the *Principle of Plenitude*, including the modal problem of evil and the *Less-than-Best Problem*.

I also consider *Turner's Multiverse Solution* to the *Less-than-Best Problem*. Donald Turner proposes that some possible worlds are "complex worlds" and the instantiation of a complex world Turner calls a "multiverse" or "cosmoi." According to Turner, a perfect being ought to actualize the complex world that includes every cosmos containing more good than evil. I show that Turner's multiverse solution entails the implausible necessitarian thesis that actual world is the only possible world. And since every action and event that occurs in the actual world necessarily occurs in the actual world, the complex world we inhabit is fatalistic.

I review Derek Parfit's hypothesis that every possible world is actual. Parfit calls that the *All-Worlds Hypothesis*. The *All-Worlds Hypothesis* does offer a solution to the *Less-than-Best Problem*. But there is simply no reason to believe that every possible world is actual.

In later sections I focus on approaches to representing the infinite value of complex worlds. I argue against the common usage of Cantorian infinities in representing infinite amounts of value. Cantorian infinities improperly represent the aggregation of value among infinitely valuable worlds. There are much better approaches to representing the infinite value to be found in John Conway's surreal numbers or, alternatively, in Kagan and Vallentyne's aggregation metaprinciples.

Finally, I consider *Hudson's Hyperspace Solution* to the *Less-than-Best Problem*. Hudson proposes that there actually exists a collection of many independent, three-dimensional subregions in a connected four-dimensional space. According to Hudson, these regions stand at a determinate distance from each other but do not stand at determinate direction from each other. Each region is completely independent from the others. According to Hudson, a perfect being would actualize or instantiate a world containing every subregion worth actualizing.

I show that Hudson's hyperspace solution also entails the incredible conclusion that the actual world instantiated in plenitudinous hyperspace is a necessitarian world. Every action and event that does occur necessarily occurs. Among the unacceptable consequences of Hudson's hyperspace

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solution is that there is no divine freedom at all. There is no divine freedom in actualizing a world and no divine freedom in interacting with the denizens of the actual world. An additional consequence of Hudson's hyper-space solution is that every possible world is on balance good.

The discussion in this book focuses on problems arising for Anselmian perfect beings in various unfamiliar contexts. Certainly the discussion does not exhaust the problems arising in these contexts. There are many others. The discussion is Anselmian in the sense that Anselm's exalted conception of a perfect being is examined in these unusual contexts. But the discussion is not about Anselm, and it is not a systematic treatise in Anselmian theology. It is rather a study in Anselmian philosophy of religion that investigates a new set of problems for Anselmian perfect beings derived from the most recent work in contemporary analytic philosophy.

It is characteristic of metaphysical conclusions on important issues to be controversial. The conclusions in this book are no exception. But it would be good to conclude the investigation having achieved more precision and clarity on the Anselmian position. It would be good to conclude the investigation having discovered in unfamiliar contexts some unexpected features of essential omnipotence, essential omniscience, essential morally perfection, and necessary existence.

1 Atheistic Arguments From Improvability

1.1 INTRODUCTION

Gottfried Leibniz famously defended the theses that there is a best possible world and that a perfect being cannot fail to choose the best.¹ These two theses led Leibniz to the conclusion that God actualized the best possible world. Many theists have since found that conclusion difficult to defend. The conclusion entails the incredible claim that the actual world, with all of its evil, is as good as any other logically possible world.

Suppose instead that there are infinitely many possible worlds arranged from w_0 to w_∞ in an increasing order of value. The infinite sequence, let's suppose, is countable and has no upper bound.² For each world w_n in the sequence there is another world w_{n+1} that surpasses w_n in moral value or in overall value. Assume that for any world w_n in the sequence, it is morally better to actualize w_n than to actualize the default world. The default world contains no contingent beings at all.³ So if it would be better to actualize the default world rather than to actualize a world containing lots of gratuitous suffering or a world containing no rational beings or a world containing no sentient beings, and so on, then such worlds are not in the sequence.

For any arbitrarily selected world w_n , w_n is a best possible world only if w_n is at least as good as any world in the sequence. But since every world is less good than some world in the sequence, we find that there are no best worlds. So if there is an infinite sequence of ever-improving worlds, then theists are clearly not committed to the Leibnizian conclusion that the actual world is as good as any other logically possible world.⁴ And that, of course, is welcome news for theism.

But could a perfect being actualize a *less-than-best* world in the infinite sequence of worlds? According to William Rowe, Phil Quinn, and several others, it is necessarily true that a perfect being could actualize a world in the sequence of improving worlds only if there is no better world that it could actualize instead. Call that the *Improvability Thesis*. According to the *Improvability Thesis*, it is impossible that a perfect being should actualize a world that is improvable. But we know that every world in the

sequence is improvable. It seems to follow that a perfect being could actualize no world at all. And that of course is unwelcome news for theism.

There are several versions of the argument from improvability. Certainly the best version of argument from improvability is due to William Rowe. I consider *Rowe's Argument from Improvability* in (1.2).

1.2 WILLIAM ROWE'S ARGUMENT FROM IMPROVABILITY

William Rowe has argued that a perfectly good being is *maximally excellent* in every action. A perfectly good being fulfills every moral obligation and never does an action that is less good than another he could do instead. And so, according to Rowe, it is necessarily true that a perfectly good creator does not actualize a world that is less good than another world he could actualize. Rowe's *Principle B* expresses this moral restriction on perfectly good creators.

B. Necessarily if an omniscient and omnipotent being actualizes a world when there is a better world that it could have actualized, then that omniscient and omnipotent being is *not* essentially perfectly good.⁵

Rowe observes that, if there is some best possible world, then *Principle B* will commit theists to the position that ours is the best.⁶ But few theists are prepared to defend the Leibnizian position that our world is as good as any world God might have actualized. The more common and defensible conclusion is that there is no best possible world.

Suppose then that there is no best possible world. Suppose instead that there are infinitely many possible worlds arranged from w_0 to w_∞ in an increasing order of value.⁷ Assume further that, for any world in the sequence, it is morally better to actualize that world than to actualize no world at all.⁸ Since there is no best world in the sequence, theists are not committed to the conclusion that the actual world is better than any other logically possible world. But it also follows that necessarily any world that a perfect being does actualize is improvable. And according to William Rowe it is *impossible* that a perfect being should actualize an improvable world.

. . . If Principle B is true, as I think it is . . . then if it is true that for any creatable world there is another creatable world better than it, then it is also true that *no* omnipotent, omniscient being who creates a world is essentially perfectly good. Moreover, if we add to this Kretzmann's first conclusion that a perfectly good, omnipotent, omniscient being must create, it will follow that there is no omnipotent, omniscient, perfectly good being.⁹

Call that argument *Rowe's Argument from Improvability*. In (1.3) I provide a version of *Rowe's Argument from Improvability* that avoids several

problems plaguing all other arguments from improbability. I develop the argument in the quasi-formal language of possible world semantics and show that it is valid.

1.3 ROWE'S ARGUMENT FORMALIZED

For each English premise in *Rowe's Argument from Improvability* I include a formal counterpart. I quantify unrestrictedly over the possible worlds *in the infinite sequence* and the omnipotent and omniscient beings therein. The variables x and y have as a domain the set of possible worlds in the infinite sequence of worlds. The variable O has as a domain the (possibly empty) set of omniscient and omnipotent beings. The quasi-formal language includes \Box and \Diamond representing, respectively, broad logical necessity and possibility, and a predicate for actualization A . The propositions $\text{God}Ay$ and $\text{O}Ay$ are the quasi-formal counterparts of the English propositions God actualizes y and an omniscient and omnipotent being actualizes y . The initial premise in *Rowe's Argument from Improvability* is *Principle B*.

1. Necessarily if an omniscient and omnipotent being actualizes a world when there is a better world that it could have actualized, then that omniscient and omnipotent being is *not* essentially perfectly good.

$$\Box(\forall O)(\forall x)((OA_x) \ \& \ (\exists y)((x < y) \ \& \ \Diamond(OAy)) \supset \sim(O \text{ is essentially perfectly good}))$$

There is a more convenient and intuitive expression of *Principle B* in (2). Premise (1a) follows from exportation and contraposition on (1).

- 1a. Necessarily, if an omniscient, omnipotent and essentially perfectly good being actualizes a world, then there is no better world that it could have actualized instead.

$$\Box(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ OA_x) \supset \sim(\exists y)((x < y) \ \& \ \Diamond(OAy))$$

Since Rowe maintains that all perfectly good beings are maximally excellent, the moral restriction in *Principle B* requires that no essentially perfectly good being actualizes a world that is less good than another world it could actualize instead.¹⁰

The second assumption in Rowe's argument is the *No Best World* hypothesis. It is especially difficult to formulate the hypothesis in a precise and plausible way. The basic claim is that for each world in the sequence there is some better creatable world. The *No Best World* hypothesis entails that there is no world in the sequence that an omnipotent and omniscient

being cannot (at least) weakly actualize. So if there are worlds that are not even weakly actualizable—perhaps worlds containing libertarian-free agents that never go wrong—then such worlds are not in the sequence. But even the strong assumption that every possible creature is transworld depraved does not preclude the possibility of an infinite sequence of (at least) weakly actualizable worlds.

No plausible version of the *No Best World* hypothesis can require that for every world in the sequence there is a better world that some perfectly good being might create. Erik Wielenberg, for instance, proposed the hypothesis in NBW.

What we need is a principle that implies that there is no best world *among the worlds that God can actualize*. This principle does the trick:

NBW. For each possible world that God has the power to actualize, there is a better possible world that God has the power to actualize.¹¹

According to Wielenberg, NBW should be restricted to those possible worlds that *God can actualize*, and (presumably) the principle is true at every possible world. Wielenberg's suggested principle is in premise 2.

2. Necessarily every world in the infinite sequence is less good than another world in the sequence that an omniscient, omnipotent, essentially perfectly good being could actualize.

$$\Box (\forall x)(\exists O)((O \text{ is essentially perfectly good}) \ \& \ (\exists y)((x < y) \ \& \ \diamond(OAy)))$$

It is evident that Wielenberg does not intend his principle to be in conditional form and (2) is obviously not a conditional. According to Wielenberg, the *No Best World* hypothesis directly entails that the actual world is surpassable for God. But a possible world w is surpassable for God if and only if there is some possible world w' such that God can actualize w' and w' is better than w .¹² But then the *No Best World* hypothesis entails that there exists some essentially perfectly good being that can actualize a world that is better than the actual world. That, of course, is inconsistent with the central conclusion of *Rowe's Argument from Improbability* that there is no essentially perfectly good being that can actualize any world. So (2) is not an especially good or useful version of that hypothesis.

Phil Quinn has suggested that we define an actualizable world as one that some omnipotent being could actualize. More formally, Quinn suggests that an actualizable world w is such that it is possible that there is an O such that O is omnipotent and O actualizes w .¹³ Since we have restricted quantification to omnipotent and omniscient beings, the *No Best World* hypothesis should state that for every world in the infinite

sequence there is a better world that some omnipotent and omniscient being could actualize.

- 2a. Necessarily every world in the infinite sequence is less good than another world in the sequence that some omnipotent and omniscient being could actualize.

$$\Box (\forall x)(\exists y)((x < y) \ \& \ \diamond(\exists O)(OAy))$$

It is consistent with (2a) that no omnipotent and omniscient being is essentially perfectly good. So the premise happily does not entail that an essentially perfectly good being can actualize some world. But the *No Best World* hypothesis in (2a) fails to quantify over all omnipotent and omniscient beings. This is a fairly serious problem for (2a). The strongest conclusion we can derive from (2a), together with *Principle B*, is that *some* omnipotent and omniscient beings are either not essentially perfectly good or they do not actualize a world. And that conclusion is too weak for *Rowe's Argument from Improvability*. It is consistent with that conclusion that there is another omnipotent, omniscient, essentially perfectly good being that *does* actualize a world. Suppose, for instance, that some omnipotent and omniscient being can actualize no world better than *w*. Since there are no assumptions at all in *Rowe's Argument from Improvability* concerning the limits of omnipotence, we cannot know that there is no such omnipotent being. But then it follows from *Principle B* that some omnipotent, omniscient, and essentially perfectly good being might actualize a world. And again that is not consistent with Rowe's conclusion that no essentially perfectly good being can actualize any world.

It is consistent with the moral requirement in *Principle B* that an essentially perfectly good being actualizes a world that is less good than other worlds that *other* omnipotent and omniscient beings can actualize. Indeed, there might be infinitely many better worlds that other omnipotent and omniscient beings could actualize. So it is reasonable to suggest that the problem in *Rowe's Argument from Improvability* is *Principle B* rather than the *No Best World* hypothesis in (2a). The principle might be too weak to capture the moral requirements on perfect beings.¹⁴

Stephen Grover has proposed the alternative principle that no morally perfect being can actualize any world that is less good than another world that some omnipotent being could actualize.¹⁵ And Grover's principle, together with (2a), does entail that no omnipotent, omniscient, and essentially perfectly good being actualizes any world. But even assuming Grover's strong principle of moral perfection, (2a) is an unacceptable version of *No Best World*.

Premise (2a) also commits us to there being omnipotent and omniscient beings in nearly every world in the sequence. But certainly an argument against the existence of an omnipotent, omniscient and essentially perfectly

good being should not commit us to the existence of other sorts of omnipotent and omniscient beings. It's not much more obvious that there are omnipotent and omniscient not-so-good beings than that there are omnipotent, omniscient, perfectly good beings.

There is a formulation of the *No Best World* hypothesis that does not commit us to the position that there exist omniscient and omnipotent beings in any world. Bruce Langtry has suggested that there might be no possible worlds that are *prime*. A possible world is prime if and only if God (if he exists) can actualize it and cannot actualize a better world than it.¹⁶ According to Langtry, the supposition that there are no prime worlds entails that for any world which God can actualize there is a better world which God can actualize. More recently, Klaas Kraay has proposed the same formulation of *No Best World*: "The hypothesis of no prime worlds . . . holds that for any possible world x that an omnipotent being has the power to actualize, there is a better world, y , that the omnipotent being could have actualized instead of x ."¹⁷

Premise (2b) states, as Kraay and Langtry suggest, that necessarily for every world in the sequence that an omniscient and omnipotent being can actualize, there is some better world he can actualize.

- 2b. Necessarily an omnipotent and omniscient being can actualize a world in the sequence only if there is some better world he could actualize instead.

$$\Box(\forall O)(\forall x)(\Diamond(OAx) \supset (\exists y)((x < y) \ \& \ \Diamond(OAy)))$$

The more literal reading of (2b) states that necessarily *every* omniscient and omnipotent being is such that either he can actualize no world at all or he can actualize a world that is less good than another world he could actualize. Premise (2b) does not entail that there are omnipotent and omniscient beings in any world at all. But (2b) has the particularly unintuitive consequence in (2b').¹⁸

- 2b'. Necessarily, there is a best actualizable world in the sequence *only if* no omnipotent and omniscient being can actualize it

$$\Box(\forall O)(\forall x)(\sim(\exists y)((x < y) \ \& \ \Diamond(OAy)) \supset \sim\Diamond(OAx))$$

It is not clear how we might know this about every omniscient and omnipotent being. Indeed, it seems nearly trivial that, if there is a best *actualizable* world in the sequence, then some omnipotent and omniscient being can bring it about. It might be true, for instance, that an omnipotent, omniscient, and essentially perfectly good being could actualize such a world. Or perhaps an omnipotent, omniscient, and morally decent being could do so. We are simply in no position to know. So the *No Best World* hypothesis in (2b) is not especially good either.

The *No Best World* hypotheses in (2)-(2b) have obviously unacceptable implications. But there is a better version of the hypothesis that avoids these difficulties. Consider the *No Best World* hypothesis in premise (2c).

- 2c. Necessarily, for every possible world in the sequence, every omnipotent and omniscient being could actualize some better world.

$$\Box(\forall O)(\forall x)(\exists y)((x < y) \ \& \ \Diamond(OAy))$$

(2c) does not entail that any omnipotent being actualizes any world at all. Further, it does not entail that omnipotent beings exist in any possible world. Premise (2c) does not entail the unintuitive consequence except in a trivial way.¹⁹ So (2c) avoids the all of problems noted above.

But there is an additional objection to (2c). It might be true that some omnipotent and omniscient beings exist in no more than one or two worlds. We are again in no position to know. But if some omnipotent and omniscient beings exist in just a few worlds, then we cannot reasonably claim that for every world in the sequence *every* omnipotent and omniscient being can actualize some better world. Certainly no omnipotent and omniscient being can actualize any world in which it does not exist.

The solution to this problem is to restrict quantification to the domain of essentially omnipotent, essentially omniscient, and necessarily existing beings. Certainly the restriction only makes premise (2c) more credible. Further, the restriction does not commit us to the existence of such beings in any world. The solution does make it more difficult to direct *Rowe's Argument from Improvability* against beings that are not maximally great. But then, as Plantinga has suggested, most theists do not think of God as a being that just happens to be of surpassing excellence in this world. So the restricted version of the *No Best World* hypothesis in (2c) seems the best version of that principle.

From premise (1a) and premise (2c) we arrive at Rowe's first conclusion in (3).

3. Necessarily no omniscient, omnipotent, essentially perfectly good being actualizes a world in the sequence.

$$\Box(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \supset \sim OAx)$$

Of course the conclusion in (3) is consistent with there being an essentially omnipotent, essentially omniscient, essentially good, and (perhaps even) necessarily existing being.²⁰ The conclusion entails only that such a being could not have actualized any world in the sequence and so could not have actualized our world.

The final assumption in Rowe's argument is attributed to Norman Kretzmann. Kretzmann argues, in contrast to Aquinas, that God was not free to choose *whether* to create a world.

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The question I raise . . . is why God, the absolutely perfect being, would create anything at all . . . I summarize my own position by saying that God's goodness requires things other than itself as a manifestation of itself, and that God therefore necessarily (though freely) wills the creation of something or other, and that the free choice involved in creation is confined to the selection of which possibilities to actualize for the purpose of manifesting goodness . . . So, although I disagree with Aquinas's claim that God is free to choose *whether* to create, I'm inclined to agree with him about God's being free to choose *what* to create."²¹

And according to Kretzmann, Aquinas is further committed to the view that there is no best possible world.

. . . According to my attempted explanation here of Aquinas's claim that God could create a better world than this one, it is also *impossible* that God create something than which he could not create something better. My conclusion in the preceding essay and my explanation in this one taken together entail that a perfectly good (omniscient, omnipotent) God *must* create a world less good . . . than one he could create.²²

The more cautious expression of Kretzmann's conclusion does not entail that God exists or that God creates anything at all. The conclusion is rather that a perfectly good (omniscient, omnipotent) God, *if He exists*, must create some world in the sequence. So the final assumption of Rowe's argument is in premise (4).

4. Necessarily an omniscient, omnipotent, essentially perfectly good being must actualize some world in the sequence.

$$\Box (\forall O)(\exists x)((O \text{ is essentially perfectly good}) \supset OAx)$$

And from premises (3) and (4) we arrive at Rowe's final conclusion that necessarily there exists no essentially perfectly good being.

5. Necessarily there is no omnipotent, omniscient, essentially perfectly good being.

$$\Box \sim (\exists O)(O \text{ is essentially perfectly good})$$

It is of course consistent with *Rowe's Argument from Improvability* that some nontraditional God exists. The argument does not obviously show that some *nearly* perfect being does not exist. Nearly perfect beings, for instance, might not be governed by *Principle B*. It is also consistent with the argument that an essentially omnipotent, essentially omniscient, essentially perfectly good being exists in the actual world but does not

exist in every other world. The actual world might have been the best of those worlds that are actualizable. But Rowe's argument does provide powerful reason to conclude that a maximally great being exists in no world at all.

1.4 THOMAS MORRIS AND WILLIAM HASKER ON PRINCIPLE B

William Hasker and Thomas V. Morris have argued that the moral standard expressed in *Principle B* is too high. *Principle B* prohibits an essentially perfectly good being from actualizing a world when there is a better world it could actualize instead. But according to Hasker, it is *necessary* that an essentially perfectly good being actualizes a world only if there is a better world it could actualize instead. Here's Hasker.

. . . So let us ask what if God had created a better world? Would it then be true that God "failed to do better than he did," when doing better was possible for him to do? The answer, of course, is yes . . . It's clear then that the only way God could be freed from the charge of "failing to do better than he did" is if there were a *maximally excellent* world, one than which even God could not create a better. But that is by hypothesis impossible; the *No Best World* hypothesis precludes it. This, however, means that whatever world God should create, it is a *necessary truth* that he could have created a better one; in this sense, it is a necessary truth that God "failed to do better than he did."²³

Since there is no maximally excellent world, Hasker concludes that an essentially perfectly good being *must* actualize some world in the sequence when there is a better world it could have actualized. *Principle B* therefore demands the impossible and the principle ought to be rejected.

Hasker is mistaken here, but his argument is instructive. Rowe can reject the conclusion that *Principle B* demands the impossible of God. Suppose it is true that for every world in the infinite sequence there is some better world that God could actualize instead. Hasker formalizes his *No Best World* hypothesis in (6).²⁴

6. Necessarily God fails to actualize the best world he can.

$$\Box (\forall x)((\text{GodAx}) \supset (\exists y)(\sim(\text{GodAy}) \ \& \ \diamond(\text{GodAy}) \ \& \ y > x))$$

It's true, according to *Principle B*, that an essentially perfectly good being is prohibited from actualizing a world when there is a better world it could actualize instead. But, contrary to Hasker, *Principle B* does not necessarily demand the impossible.

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- B. Necessarily, if an omniscient, omnipotent, and essentially perfectly good being actualizes a world, then there is no better world that it could have actualized instead.

$$\Box (\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset \sim(\exists y)((x < y) \ \& \ \diamond(OAy))$$

Indeed, premise (6) and *Principle B* together entail that an essentially perfectly good being *might not* actualize a world in the sequence when there is a better world it could actualize instead.

Suppose, for *reductio ad absurdum*, that God actualizes some world or other in the sequence.

7. God actualizes some world in the sequence.

$$(\exists x)(\text{God}Ax)$$

Premise (7), of course, entails that God actualizes some arbitrarily selected world w . So, for some arbitrary world w , we derive (8).

8. God actualizes w .

$$\text{God}Aw$$

Since God is an omniscient, omnipotent, and essentially perfectly good being, it follows from *Principle B* and (8) that there is no world y better than w that God could actualize instead.

9. There is no world y better than w that God can actualize.

$$\sim(\exists y)((w < y) \ \& \ \diamond(\text{God}Ay))$$

But of course it follows from (6) and (8) that there is some world y better than w that God could actualize instead.

10. There is some world y better than w that God can actualize.

$$(\exists y)((w < y) \ \& \ \diamond(\text{God}Ay))$$

Premises (9) and (10) are plainly inconsistent. So our assumption in premise (7) must be false and we arrive at (11).

11. God does not actualize a world in the sequence.

$$\sim(\exists x)(\text{God}Ax)$$

Of course, according to Kretzmann's conclusion in (4), God must actualize some world in the sequence *or God does not exist*. Suppose we assume that

Kretzmann's conclusion is true. It follows from (11) and (4) that God does not exist. And Rowe is no doubt committed to this conclusion.

According to Hasker, the central problem for *Principle B* is that it demands the impossible. Contrary to the prescription in *Principle B*, Hasker contends that God *must* actualize a world in the sequence when there is a better world he could actualize instead. He provides this formal version of his claim.

12. Necessarily, God fails to actualize a better world than he did.

$$\Box(\exists x)((\text{GodAx}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ \diamond(\text{GodAy}) \ \& \ y > x))$$

It should be evident that Rowe is not committed to (12), since (12) entails directly that God exists! Apart from that it also follows directly from our conclusion in (11) that Hasker's claim in (12) is false. We therefore reach the conclusion from *Principle B* and Hasker's *No Best World* hypothesis that (13) *possibly God does not fail to actualize a better world than he did!*

13. Possibly God does not fail to actualize a better world than he did.

$$\sim \Box(\exists x)((\text{GodAx}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ \diamond(\text{GodAy}) \ \& \ (y > x)))$$

Hasker's assertion here includes an instructive mistake: “. . . *the only way* God could be freed from the charge of ‘failing to do better than he did’ is if there were a *maximally excellent* world, one than which even God could not create a better.”

There is obviously another way that God is freed from the charge of failing to do better than he did. God is freed from the charge if *he does not exist*. In that case, *Principle B*, *Kretzmann's Conclusion*, and Hasker's *No Best World* hypothesis are trivially true, and Hasker's claim in (12) is false. So, contrary to Hasker's conclusion, the propositions in (a), (b), (c), and (d) are perfectly consistent.

- a. *Principle B*

$$\Box(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset \sim(\exists y)((x < y) \ \& \ \diamond(OAy))$$

- b. *Hasker's No Best World Principle*

$$\Box(\forall x)((\text{GodAx}) \supset (\exists y)(\sim(\text{GodAy}) \ \& \ \diamond(\text{GodAy}) \ \& \ y > x))$$

- c. *Kretzmann's Conclusion*

$$\Box(\forall O)(\exists x)((O \text{ is essentially perfectly good}) \supset (OAx))$$

- d. *Hasker's Conclusion Negated*

$$\sim \Box(\exists x)((\text{GodAx}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ \diamond(\text{GodAy}) \ \& \ y > x))$$

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Given (a) through (d) it is true that there is no maximally excellent world, *Principle B* is true, every perfect being must actualize some world, and it is *not necessary* that God fails to actualize a better world than he did. Hasker's objection to *Rowe's Argument from Improvability* therefore fails.

Thomas V. Morris has concluded similarly that the moral requirement in *Principle B* is not consistent with the *No Best World* hypothesis. Here is Morris.

But failing to do the best you can is a flaw or manifests and incompleteness in moral character . . . only if doing the best you can is at least a logical possibility. If doing the best he can in creating a world is for God an impossibility, given the range of omnipotence and the nature of those considerations making the notion of a best of all possible worlds an incoherence, then not doing his best in creating cannot be seen as a flaw or as manifesting an incompleteness in the character of God.²⁵

But nothing Morris says here presents any problem for *Principle B*. According to *Principle B*, failing to do better than you did is indeed a moral flaw, and, according to the *No Best World* hypothesis, it is not possible to do the best you can. Morris's objection might present a problem for *Principle B* if the *No Best World* hypothesis entailed that necessarily God fails to do better than he did.²⁶ But as we saw, the *No Best World* hypothesis entails no such thing. So Morris's objection to *Principle B* fails as well.

1.5 A LESSON FROM MORRIS AND HASKER

The assumptions in *Rowe's Argument from Improvability* include *Principle B* and the *No Best World* hypothesis. The arguments that Hasker and Morris advance are designed to show that *Principle B* incorporates an excessive moral requirement given the *No Best World* hypothesis. Indeed, Hasker and Morris urge that we have a compelling argument from the premise of *No Best World* to the conclusion that *Principle B* is false. If there is no best possible world, then the moral requirement in *Principle B* is impossible to fulfill. And since no moral requirement can be impossible to fulfill, we should conclude that *Principle B* is false.

But as we have seen, there is no compelling argument from the premise of *No Best World* to the conclusion that *Principle B* is false. Instead, we have a compelling argument from the premise of *No Best World* and the premise that *it is possible that an essentially perfectly good being exists* to the conclusion that *Principle B* is false.

Reconsider the four propositions that Hasker believes are inconsistent.

a. *Principle B*

$$\Box (\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset \sim(\exists y)((x < y) \ \& \ \diamond(OAy))$$

b. *Hasker's No Best World Principle*

$$\Box (\forall x)((GodAx) \supset (\exists y)(\sim(GodAy) \ \& \ \diamond(GodAy) \ \& \ y > x))$$

c. *Kretzmann's Conclusion*

$$\Box (\forall O)(\exists x)((O \text{ is essentially perfectly good}) \supset (OAx))$$

d. *Hasker's Conclusion Negated*

$$\sim \Box (\exists x)((GodAx) \ \& \ (\exists y)(\sim(GodAy) \ \& \ \diamond(GodAy) \ \& \ y > x))$$

To reach Hasker's conclusion that *Principle B* incorporates a moral requirement that is impossible to fulfill, we must assume (a), (b), (c), and (e).

e. *Coherence of Perfect Beings*

$$\diamond(\exists O)(O \text{ is essentially perfectly good})$$

Recall that we have restricted quantification to the domain of essentially omnipotent, essentially omniscient, and necessarily existing beings. If (e) is true, then there exists an essentially omnipotent, essentially omniscient, essentially perfectly good being in every world. Call that being "God." But then, from *Kretzmann's Conclusion*, it follows that necessarily God actualizes some world or other *w*. *Hasker's No Best World* hypothesis then entails that, necessarily, there is some world *y* better than *w* that God could have actualized instead. And these entail Hasker's conclusion.

So there is a powerful argument from the *No Best World* hypothesis to the conclusion that *Principle B* is false given the assumption that an essentially perfectly good being possibly exists. But of course Rowe will not and should not grant that assumption to Hasker and Morris. Indeed, the very conclusion Rowe aims to establish in the *Argument from Improvability* is that an essentially perfectly good being cannot exist. So from Rowe's point of view, the assumption that an essentially perfectly good being possibly exists begs the central question at issue.

1.6 IS ROWE'S ARGUMENT SOUND?

According to Rowe, it follows from the concept of moral perfection that an essentially perfectly good being cannot actualize a world when there is a better world he could actualize instead. Indeed, essential perfect goodness

even limits what an essentially omnipotent, essentially omniscient, and necessarily existing being *can* do.

Of course it was my aim . . . to show that even if it is better to create a world than not to create at all, in the case of an infinite number of increasingly better worlds, no omnipotent, omniscient being that creates a world could be *supremely perfect*.²⁷

An essentially omnipotent being that is supremely perfect cannot actualize any improvable world. Of course other philosophers have reached similar conclusions on the moral limitations of omnipotent beings. Theodore Guleserian, for instance, concludes that essential perfect goodness limits the kinds of worlds that an essentially omnipotent, essentially omniscient, essentially perfectly good and necessarily existing being can actualize. “. . . Surely it is plausible to suppose that we can conceive of some possible worlds that are so full of misery and so lacking in redeeming value that, necessarily, no [morally perfect] being ought to—or would—allow them to become actual.”²⁸

Principle B is supposed to express this necessary truth concerning all essentially perfectly good, essentially omniscient, essentially omnipotent, and necessarily existing beings.

- B. Necessarily, if an omniscient, omnipotent, and essentially perfectly good being actualizes a world, then there is no better world that it could have actualized instead.

$$\Box (\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset \sim (\exists y)((x < y) \ \& \ \diamond(OAy))$$

Principle B informs us that in addition to the more familiar limitations that an essentially perfectly good being cannot lie, cannot break a promise, and cannot deceive, we should include the limitation that an essentially perfectly good being actualizes only those worlds that are unimprovable.

But compare the *No Best World* hypothesis. The hypothesis entails that every essentially perfectly good, essentially omnipotent, essentially omniscient, and necessarily existing being actualizes only those worlds that are *not* unimprovable. According to the *No Best World* hypothesis, essentially perfectly good beings are *not limited* by their moral perfection. *Principle B** follows directly from the *No Best World* hypothesis in (3).²⁹

- B*. Necessarily, if an omniscient, omnipotent, and essentially perfectly good being actualizes a world, then there is some better world that it could have actualized instead.

$$\Box (\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset (\exists y)((x < y) \ \& \ \diamond(OAy))$$

According *Principle B**, every essentially perfectly good being that actualizes a world *must do worse* than it could. The principle informs us that an essentially perfectly good being can actualize a world only if there is better world he could actualize instead.

So, according to *Principle B*, maximally great beings actualize a world only if there is *no* better world they could actualize instead. And according to *Principle B**, maximally great beings actualize a world only if there is a better world they could actualize instead. It should be evident that *Principle B* and *Principle B** together entail that the concept of a maximally great being is logically incoherent. But do we have good reason to believe both *Principle B* and *Principle B**?

1.7 LESSONS FROM ROWE ON PRINCIPLE B

The moral requirement in *Principle B* demands that, necessarily, no essentially perfectly good being actualizes an improvable world. Rowe offers the a priori argument for *Principle B* that the principle follows from the concept of moral perfection. Here is Rowe.

My own view is that the principle in question will appear to many to be plausible, if not self-evident. For if an omniscient being creates a world when it could have created a better world, then that being has done something less good than it could do (create a better world). *But any being that knowingly does something (all things considered) less good than it could do falls short of being the best possible being.* So unless we find some reason to reject [*Principle B*] or a reason to reject the line of argument supporting it, we are at the very least within our rights to accept it and use it as a principle in our reasoning. But the result of using this principle in our reasoning about God and the world is just this: if the actual world is not the best possible world that an omnipotent, omniscient being could create, God does not exist.³⁰

Rowe is urging that we know a priori that any being that knowingly does something, all things considered, less good than it could do falls short of being the best possible being. But, on the contrary, we simply do not know a priori that any being that knowingly does something less good than it could do falls short of being the best possible being.

It's a well-known restriction on any proposed moral principle, including *Principle B*, that no moral principle can require moral agents to do the logically impossible. So we know that *Principle B* is a tenable moral principle only if we know that *Principle B* does not require the logically impossible. But in order to know a priori that *Principle B* does not demand the impossible, we must know a priori that essentially perfectly beings are impossible.

Recall that Hasker and Morris objected to *Principle B* that the principle requires that essentially perfectly good beings do the impossible. Since Rowe agrees that *Hasker's NBW* and *Kretzmann's Conclusion* are necessarily true, these propositions are nonnegotiable. Hasker and Morris assumed the controversial premise in (3) that essentially perfectly good beings are possible. Here's the proof.³¹

Anti-Principle B Proof

1. $\Box (\forall x)((\text{GodAx}) \supset (\exists y)(\sim(\text{GodAy}) \ \& \ (\text{GodAy}) \ \& \ y > x))$ *Hasker's NBW*
2. $\Box (\forall O)(\exists x)((O \text{ is essentially perfectly good}) \supset (OAx))$ *Kretzmann's Concl.*
3. $\Diamond(\exists O)((O \text{ is essentially perfectly good})$ *Coherence of Perfect Beings*
4. $\therefore \Box (\exists x)((\text{GodAx}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ \Diamond(\text{GodAy}) \ \& \ y > x))$
5. \therefore *Principle B* demands the impossible

The reply to the Hasker and Morris was that, from Rowe's point of view, the assumption in (3) that an essentially perfectly good being possibly exists begs the central question at issue. Therefore, Hasker and Morris cannot simply assume the *Coherence of Perfect Beings* in (3). And that is a perfectly reasonable objection.

But Hasker and Morris can rightly respond that, on the other hand, Rowe does not know a priori that essentially perfectly good beings are *not* possible. From the point of view of Hasker and Morris, the a priori rejection of (3) also begs the central question at issue. But if Rowe does not know a priori that (3) is false, then he does not know a priori that *Principle B* does not demand the impossible.

Let's review Rowe's a priori argument for *Principle B*. According to Rowe, we know a priori that *Principle B* is true since it follows from the concept of moral perfection. But of course no true moral principle can demand the logically impossible. So we know a priori that *Principle B* is true only if we know a priori that *Principle B* does not demand the impossible. But as we've seen, we know a priori that *Principle B* does not demand the impossible only if we know a priori that essentially perfectly good beings are impossible. But of course we do not know a priori that essentially perfectly good beings are impossible. So Rowe's a priori argument for *Principle B* fails.

1.8 ON ROWE'S A PRIORI ARGUMENT FOR PRINCIPLE B

As a perfectly general principle, the soundness of a priori inferences depends on the space of conceptual possibility. The soundness of an a priori inference to Goldbach's conjecture, for instance, depends on

the space of conceptual possibility. Should we discover that Goldbach's conjecture is not consistent with some known mathematical theorem, the space of conceptual possibility would exclude the conjecture. And any a priori inference to Goldbach's conjecture must be unsound. But since we do not know whether Goldbach's conjecture is true, we do not know whether the conjecture delimits in part the space of conceptual possibility.

William Rowe argues that *Principle B* follows a priori from the concept of moral perfection. So of course the soundness of Rowe's a priori inference also depends on the space of conceptual possibility. Rowe urges that ". . . any being that knowingly does something (all things considered) less good than it could do falls short of being the best possible being."³² He obviously believes that conceptual space is delimited in part by moral principles as strong as *Principle B*. But, in fact, we could discover *Principle B* is not consistent with some conceptual truth or other—we could discover, for instance, that the *Coherence of Perfect Beings* is true. In that case the space of conceptual possibility would exclude *Principle B*. And any a priori inference to *Principle B* must then be unsound.

Of course, since we are uncertain about the limits of conceptual space, we are uncertain about the soundness of many a priori inferences. After careful reflection, we simply do not know a priori whether conceptual space is delimited by the *Coherence of Perfect Beings*. So after careful reflection we simply do not know a priori whether conceptual space includes or excludes *Principle B*. It is evident, then, that we cannot conclude that Rowe's a priori argument is sound.

1.9 A PRIORI ARGUMENTS FOR WEAKER MORAL PRINCIPLES

There are important epistemological problems with Rowe's a priori argument for *Principle B*. But the same epistemological problems afflict a priori arguments for more basic principles of moral perfection. Nelson Pike has urged that it follows from the concept of moral perfection that there are *some* consistently describable states of affairs that a morally perfect being cannot actualize.³³ There are, for instance, some consistently describable states of affairs that are sufficiently bad that no morally perfect being could actualize them. So, according to Pike, we know a priori from the concept of moral perfection that necessarily, if a being is essentially perfectly good, then there are some worlds that he cannot actualize.³⁴

- G. Necessarily, if a being is essentially perfectly good, then there are some possible worlds that he cannot actualize.

$$\Box(\forall z)(\exists x)((z \text{ is essentially perfectly good}) \supset \sim\Diamond(zAx))$$

According to Pike, *Principle G* governs every essentially perfectly good being, and the principle is considerably weaker than *Principle B*. It is consistent with *Principle G*, for instance, that an essentially perfectly good being can actualize some improvable worlds and perhaps most improvable worlds. The principle requires only that there are some worlds that an essentially perfectly good being cannot actualize.

Pike also urges that we know a priori from the basic concept of omnipotence that, necessarily, every essentially omnipotent being can actualize any consistently describable state of affairs.

- G* Necessarily, if a being is essentially omnipotent, then he can actualize any possible world.

$$\Box (\forall z)(\forall x)((z \text{ is essentially omnipotent}) \supset \Diamond(zAx))$$

According to Pike, *Principle G** governs every omnipotent being. But if *Principle G* follows from the concept of moral perfection and *Principle G** follows from the concept of omnipotence, then there is a credible argument that the concept of a maximally great being is incoherent. Here is Pike.

On the analysis of ‘omnipotent’ with which we are working, it follows that God (if He exists) can bring about any consistently describable state of affairs. However, God is perfectly good. . . . Hence some consistently describable states of affairs are such that God (being perfectly good) could not bring them about. The problem, then, is this: If God is both omnipotent and perfectly good, then there are at least some consistently describable states of affairs that He both can and cannot bring about. There would thus appear to be a logical conflict in the claim that God is both omnipotent and perfectly good.³⁵

The initial premise in the argument expresses Pike’s concept of omnipotence. It follows a priori from the concept of omnipotence that necessarily, if a being is essentially omnipotent, then he can actualize any possible world. And since strengthening antecedents is valid for strict conditionals, it follows immediately from *Principle G** that necessarily, if a being is essentially omnipotent and essentially good, then it is possible that he actualizes any possible world.

1. Necessarily if a being is essentially omnipotent and essentially perfectly good then he can actualize an improvable world.

$$\Box (\forall z)(\forall x)((z \text{ is essentially omnipotent} \ \& \ \text{essentially perfectly good}) \supset \Diamond((zAx)))$$

Pike’s second premise expresses his concept of moral perfection. It follows a priori from the concept of moral perfection that necessarily, if a being is

essentially perfectly good, then there are some worlds that he cannot actualize. But strengthening antecedents on *Principle G* entails that necessarily, if a being is essentially omnipotent and essentially good, then there are some worlds that he cannot actualize.

2. Necessarily, if a being is essentially omnipotent and essentially perfectly good, then he cannot actualize some worlds.

$$\Box (\forall z)(\exists x)((z \text{ is essentially omnipotent} \ \& \ \text{essentially perfectly good}) \supset \sim \Diamond (zAx))$$

And from (1) and (2) it follows that there is some world w such that any essentially omnipotent and essentially perfectly good being both can and cannot actualize w . But, of course, that is impossible. It is therefore impossible that any being is both essentially omnipotent and essentially perfectly good.

- C. It is impossible that any being should possess the attributes of essential omnipotence and essential perfect goodness.

$$\sim \Box (\exists z)(z \text{ is essentially omnipotent} \ \& \ \text{essentially perfectly good})$$

And, of course, it follows from Pike's conclusion in (C) that the concept of a maximally great being is incoherent.

But how credible is Pike's argument? The argument blithely assumes that we know a priori that each of the incompatible attributes is *separately* coherent. And that assumption is not warranted. Indeed, there is good reason to believe that assumption is false. There is an argument no weaker than Pike's argument that his concept of moral perfection is itself incoherent and that his incompatible-attribute argument is therefore unsound.

Consider the following argument. We know a priori that there might exist an essentially omnipotent, essentially omniscient, essentially morally perfect, and necessarily existing being. But then we do not know a priori that (3) is false.

3. It is possible that necessarily some being is omnipotent and essentially perfectly good.

$$\Diamond \Box (\exists z)(z \text{ is essentially omnipotent} \ \& \ \text{essentially perfectly good})$$

We may derive from (3) and (1) that it is impossible that a being is essentially omnipotent and essentially perfectly good only if he cannot actualize some world.

4. It is impossible that if a being is essentially omnipotent and essentially perfectly good then he cannot actualize some world.

$$\sim \Box (\forall z)(\forall x)((z \text{ is essentially omnipotent} \ \& \ \text{essentially perfectly good}) \supset \sim \Diamond (zAx))$$

It follows immediately that *Principle G* is necessarily false. And any concept of moral perfection that entails *Principle G* is incoherent.

5. It is impossible that if a being is essentially perfectly good, then he cannot actualize some world.

$$\sim \Box (\forall z)(\exists x)((z \text{ is essentially perfectly good}) \supset \sim \Diamond (zAx))$$

Pike might object that this counterargument assumes that we know a priori that the traditional God is possible. Indeed, this counterargument assumes that the traditional concept of God is what David Chalmers has called *ideally conceivable*.³⁶ The traditional concept of God is ideally conceivable only if the concept does not entail a contradiction. But, Pike might urge, this is not consistent with his conclusion that the traditional concept does entail a contradiction.

But in response to Pike we should note that his argument assumes that we know a priori that there is no incoherence in his concept of moral perfection and that there is no incoherence in his concept of omnipotence. Indeed, Pike's argument assumes that the concept of moral perfection and the concept of omnipotence are ideally conceivable. Again, Pike's concept of moral perfection is ideally conceivable only if the concept does not entail a contradiction. So we could just as reasonably object that this is not consistent with the conclusion of our counterargument that his concept of moral perfection does entail a contradiction. In fact, though, the only reasonable conclusion we can reach is that we do not know a priori that Pike's argument is sound, and we do not know a priori that the counterargument is sound.

The epistemological problem with Pike's argument and Rowe's argument is a familiar one. Compare the following argument that the property of *being in less than perfect company* is incoherent.

Consider the property of being in less than perfect company, where it is understood that a person has that property in a world w just in case every person in $w \dots$ has some degree of imperfection, however slight. It may be that we enjoy (or are burdened with) this property in the actual world. But even if we are not, surely, one would think, it is *possible* that this property is instantiated \dots But if so then Plantinga's extraordinary property [of being maximally great] is impossible; there is no possible world in which it is instantiated. If either of these properties is instantiated in some world, then the other is uninstantiated in \dots every possible world. Since only one can be instantiated, which, if either, might it be?³⁷

It is *prima facie* conceivable that something has the property of being in less than perfect company. The concept contains no apparent contradiction. Nonetheless, there is a plausible proof that it is *necessarily false* that something has the property of being in less than perfect company. So it

is not ideally conceivable that something has the property of being in less than perfect company.

It is also *prima facie* conceivable that something has the property of being maximally great. But there is a plausible proof that it is necessarily false that something has the property of being maximally great. So it is not ideally conceivable that something has the property of being maximally great.

It is plainly unreasonable to conclude that the concept of being in less than perfect company is incoherent. The argument that the concept is incoherent includes the unwarranted assumption that the concept of being maximally great is ideally conceivable. But after considerable reflection we simply do not know that the concept of being maximally great is ideally conceivable.

It is also plainly unreasonable to conclude that the concept of being maximally great is incoherent. The argument that the concept is incoherent includes the unwarranted assumption that the concept of being in less than perfect company is ideally conceivable. But after considerable reflection we simply do not know that the concept of being in less than perfect company is ideally conceivable.

Of course this pervasive problem afflicts Rowe's argument and Pike's argument. Pike and Rowe conclude that the concept of being maximally great is incoherent. But their arguments include the unwarranted assumptions that the concepts of moral perfection expressed in *Principle B* and *Principle G* are ideally conceivable. After considerable reflection we simply do not know that these concepts of moral perfection are ideally conceivable. And so again it is unreasonable to conclude that the concept of a maximally great being is incoherent.

1.10 CONCLUSIONS

The version of *Rowe's Argument from Improvability* developed in section (1) is valid and it does avoid difficulties plaguing other arguments from improvability. The premises in Rowe's argument, *Principle B*, and the *No Best World* hypothesis entail that there exists no maximally great being.

The central problem with Rowe's argument is that we do not know a priori that both *Principle B* and the *No Best World* hypothesis are true. We know a priori that *Principle B* is true only if we know a priori that the concept of a maximally great being is incoherent. But we plainly do not know a priori that the concept of a maximally great being is incoherent.

Nelson Pike offers an argument that the concept of a maximally great being is incoherent based on the weaker assumptions *Principle G* and *Principle G**. But, again, we know a priori that *Principle G* is true only if we know a priori that the concept of a maximally great being is incoherent. But we plainly do not know a priori that the concept of a maximally great being is incoherent.

There is a pervasive flaw in a priori arguments of this sort against the existence of maximally great beings. It is in general true that we cannot know a priori that the premises in these arguments are true unless we know a priori that the conclusion is true. But the conclusion in these arguments is that the concept of a maximally great being is incoherent. Of course we do not know a priori that the concept of a maximally great being is incoherent. Contrary to some common and blithe assumptions about the implications of moral perfection, omniscience, omnipotence, and other attributes, we can just as reasonably conclude that we are not certain what follows a priori from these concepts. We can just as reasonably conclude that we might be surprised about the a priori implications of the traditional attributes of perfection.

2 Rational Choice and No Best World

2.1 INTRODUCTION

We have been supposing that there are infinitely many possible worlds arranged in an increasing order of value from w_0 to w_∞ .¹ We have supposed further that each world in the infinite sequence is sufficiently good that actualizing any world is better than actualizing the default world w_d . The default world is actualized if and only if no other possible world is actualized. Actualizing w_d is sometimes described as actualizing no world at all since it is a world in which there exist no contingent beings. It is a world in which every existing being is a necessary being: for example, numbers, properties, God, propositions, sets, and the like. The default world does include contingent states of affairs. Since every possible world is a maximally consistent state of affairs, the default world contains infinitely many contingent states of affairs.²

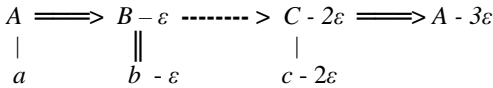
Now suppose there is a divine being *Thor* who is in a position to actualize some world or other in the sequence from 0 to ∞ . Let's suppose that Thor possesses the traditional set of divine attributes including essential omniscience, essential omnipotence, essential moral perfection, and *essential rational perfection*. In (2.2) I present a model of a decision problem that Thor faces at any arbitrarily selected world w_n . The model provides two options for Thor at each world w_n . The options include actualizing w_n or exchanging w_n for a better world w_{n+1} . I assume a standard of rationality familiar in contexts of dynamic choice. Since Thor is omniscient and omnipotent, we know that he has *perfect foresight* and *perfect information*.

In (2.3) I consider whether Thor—a rationally perfect agent—could actualize some less-than-best world in the infinite sequence.³ I show that, for any arbitrarily selected world w_n , Thor is rationally permitted to actualize w_n if and only if Thor is *not* rationally permitted to actualize w_n . Further, I show that Thor is permitted to exchange w_n for w_{n+1} if and only if Thor is not permitted to exchange w_n for w_{n+1} . Since these conclusions are logically inconsistent, some premise in the argument is false. Either there is no infinite sequence of ever-improving worlds or some rational requirement is false or the *Rational Perfection Principle* is false.

In (2.4) I consider whether perfect foresight about his future choices could lead Thor to the conclusion that it is not impermissible to actualize some world or other. I show that perfect foresight cannot resolve the problem. In (2.5) I offer a simpler version of the argument, and in (2.6) I offer reasons to abandon the *Rational Perfection Principle*. In closing sections I focus on alternative approaches to rational choice and infinite options in John Pollock, J. Howard Sobel, and Roy Sorensen.

2.2 A MODEL OF THE PROBLEM

Thor is an omnipotent, omniscient, and perfectly rational agent facing a problem in sequential choice. Among the well-known sequential choice problems that an omniscient and omnipotent agent can easily solve is the *money-pump* problem depicted below.



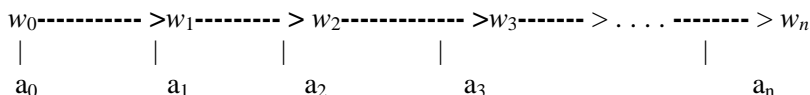
In the model an agent is offered the prize A and then has the option to keep the prize or to exchange it for another. The choice to keep A is displayed in the model as a solid line downward to a . The choice to exchange A for $B - \varepsilon$ is displayed in the model as an arrow pointing upward from A to $B - \varepsilon$. The double-lines indicate the decisions a rational chooser *would* make at various points in the sequence.

Let's suppose that agent G has cyclical preferences for prizes A , B , and C .⁴ He prefers B to A , C to B , and A to C . Since G prefers B to A , there is a small amount ε that G will be prepared to pay to exchange A for B . There is also a small amount ε that G will be prepared to pay to exchange B for C , and finally there is a small amount ε that G will be prepared to pay to exchange C for A . The reasonable exchanges of a shortsighted agent will cost him 3ε and place him back where he started. It should be obvious that we can continue to offer exchanges to shortsighted agents, and they will continue to pay out small sums for each exchange. And generally a shortsighted agent with infinite resources and time will engage in an infinite series of exchanges to his infinite cost.

But suppose G is an omniscient and omnipotent agent facing a money-pump problem. G knows that he prefers $A - 3\varepsilon$ to $C - 2\varepsilon$, and he foresees that he would exchange $C - 2\varepsilon$ for $A - 3\varepsilon$ should he reach that point in the series of exchanges. But G knows as well that he prefers $B - \varepsilon$ to A . The question is whether G would exchange $B - \varepsilon$ for $C - 2\varepsilon$ were he to exchange A for $B - \varepsilon$. But since G foresees that he would exchange $C - 2\varepsilon$ for $A - 3\varepsilon$ if he were to exchange $B - \varepsilon$ for $C - 2\varepsilon$, he knows that his options reduce to keeping A or keeping $B - \varepsilon$ or keeping $A - 3\varepsilon$. Therefore G chooses to keep

$B - \epsilon$. In general any agent with sufficient foresight and rationality would easily resolve the money-pump problem at $B - \epsilon$.

The infinite sequential choice problem Thor is facing might begin at any possible world w_n in the sequence from 0 to ∞ . It does not matter to the discussion where the problem begins.⁵ Once some world w_n in the sequence has been selected, Thor has the option to *actualize* w_n or to *exchange* w_n for the better world w_{n+1} . If Thor decides to exchange w_n for w_{n+1} , then he again faces the decision whether to actualize w_{n+1} or to exchange w_{n+1} for the better world w_{n+2} , and so on. Since Thor is omniscient, he knows that the sequence of ever-improving worlds has no upper bound and so he knows that there is no best possible world. We assume that for every world w in the sequence, w_n is better than w_j only if Thor prefers w_n to w_j . The problem facing Thor has the following structure.



Let's suppose we begin at the arbitrarily selected world w_0 in the model. Thor must now decide whether to actualize world w_0 or to move upward, exchanging w_0 for the better world w_1 .⁶ We have assumed that every world in the sequence is better than the default world. Thor actualizes the default world if and only if he chooses to actualize no world at all. The option to actualize each (nondefault) world w_n is displayed in the model as a solid line pointing downward to a_n . The option to exchange w_n for w_{n+1} is displayed in the model as an arrow pointing upward to the preferred world w_{n+1} .

The sequential choice problem begins with the fact that Thor has two options available to him at the world w_0 . Whether Thor is permitted to actualize w_0 or to exchange w_0 for w_1 depends entirely on what Thor *would* do were he to exchange w_0 for w_1 . Since Thor is omniscient, he knows what he would do were he to exchange w_0 for w_1 . Thor would either actualize w_1 or he would exchange w_1 for w_2 . And subsequently Thor would either actualize w_2 or exchange w_2 for w_3 , and so on.

The basic rationality assumptions determine the permissible options at each world. These include the following two assumptions.

- R0. For any world w_n , if it is true that Thor would actualize some world in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *not permitted* to actualize w_n .
- R1. For any world w_n , if it is true that Thor would actualize some world in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *permitted* to exchange w_n for w_{n+1} .

Consider whether Thor should meet the standard in R0. Suppose that if Thor exchanges w_n for w_{n+1} , then he *would* thereafter actualize some world or other in the sequence. We know that every world succeeding w_n in the sequence is better than w_n . If Thor knows that he would actualize a world better than w_n , were he to exchange upward, then Thor should not actualize the comparatively worse world w_n .

It is important that R0 does not prohibit Thor from actualizing w_n when it is true that, were he to exchange w_n for w_{n+1} , he *could* actualize a better world in the sequence. If there are better worlds that Thor could actualize—but that Thor *would not* actualize—then Thor is not rationally permitted to exchange w_n for w_{n+1} . It is sometimes urged that any being that has essential rational perfection would actualize the best world he could actualize. But that assumption is not a part of the argument to follow.

The rational assumption in R1 permits Thor to exchange w_n for w_{n+1} if there is a better world w_{n+1} in infinite sequence that he would actualize after the exchange. If Thor is not permitted to exchange upward, then he will actualize the default world or he will actualize some other world that is worse than w_{n+1} . It is therefore rational for Thor to exchange upward.

Now consider the two additional rationality assumptions in R2 and R3. These specify the rational choice given that Thor would not actualize some better world in the sequence.

- R2. For any world w_n , if it is true that Thor would not actualize some better world in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *not permitted* to exchange w_n for w_{n+1} .
- R3. For any world w_n , if it is true that Thor would not actualize some better world in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *permitted* to actualize w_n .

What is the rationale for R2? Suppose that Thor would not actualize some world or other in the sequence after exchanging w_n for w_{n+1} . What Thor would do, then, after exchanging w_n for w_{n+1} is actualize the default world. Given the options to actualize w_n or to actualize the default world, it is worse to actualize the default world. Indeed, we know that the default world is worse than any world in the sequence. According to R2, it is not relevant to Thor's deliberation whether he could actualize a world in the sequence that is better than w_n . If Thor simply would not actualize a better world in the sequence, then he is not permitted to exchange w_n for w_{n+1} .

Let's consider the rationality assumption in R3. If Thor would not actualize some better world in the sequence were he to exchange w_n for w_{n+1} , then Thor's options at w_n are to actualize w_n or actualize no world at all. Of the options available to Thor at w_n , it is better to actualize w_n . Thor is therefore permitted to do so.

The standard of rationality we have assumed does not require that if Thor *could* do better to exchange upward, then he must do so. But the standard does prohibit Thor from actualizing a world when he knows that he would do better to exchange upward. And the standard does prohibit Thor from exchanging one world for another when he knows that he would do worse to exchange upward. The final assumption is a principle governing perfectly rational agents.

- R4. Necessarily, an agent has a rational requirement to perform A only if the agent performs A.

The *Rational Perfection Principle* in R4 entails that perfectly rational agents fulfill every rational requirement. These comprise the rational demands on Thor. In section (3) I show that the rational demands in R0-R4 entail that each available option at each world is both permissible and not permissible. I conclude that some rational requirement is false.

2.3 IMPROVING WORLDS AND RATIONAL CHOICE

Let's consider whether it is permissible for Thor to actualize the world w_0 . We know from assumption R2 that Thor is not permitted to actualize w_0 if it is true that, were he to exchange w_0 for w_1 , he would actualize some world or other in the sequence. We also know that were Thor to exchange w_0 for w_1 , then there is something he would do. He would either actualize some better world in the sequence or he would actualize the default world. These are the exclusive options available to Thor. But Thor knows that actualizing some world or other in the sequence is rationally preferable to actualizing the default world. Since R4 ensures that Thor fulfills every rational requirement, we can conclude that Thor would not actualize the default world. So if Thor exchanges w_0 for w_1 , then he would actualize some world or other in the sequence. And so we can conclude from R0 that Thor is *not permitted* to actualize w_0 .

But now consider whether it is permissible for Thor to exchange world w_0 for the better world w_1 . We know that if Thor would not actualize some better world, then Thor is not permitted to exchange w_0 for w_1 . We have shown already that Thor is not permitted to actualize w_0 . But the argument that establishes that Thor is not permitted to actualize w_0 applies *mutatis mutandis* to *any* world in the sequence. Consider, then, any world in the sequence w_n . It is true at world w_n that, were Thor to exchange w_n for w_{n+1} , then either he would actualize the default world or he would actualize some better world in the sequence. We know that the default world is worse than any world in the sequence. Actualizing the default world is therefore dispreferred to actualizing some world in the sequence. But since Thor is governed by R4, it is true at *every* world w_n that Thor would actualize some

better world in the sequence, were he to exchange w_n for w_{n+1} . But then it follows from R0 that for each world in the sequence w_n Thor is not permitted to actualize w_n . So we reach the conclusion that were Thor to exchange w_0 for w_1 , then he would actualize no world in the sequence. But then it follows from R2 that Thor is not permitted to exchange w_0 for w_1 .

We have reached the conclusion that Thor is not permitted to actualize w_0 and also that Thor is not permitted to exchange w_0 for w_1 . And since we arbitrarily selected world w_0 , we can conclude generally that for any world in the sequence w_n , Thor is *not permitted* to actualize w_n and Thor is *not permitted* to exchange w_n for w_{n+1} .

But let's consider whether we can also show that Thor is *permitted* to exchange w_0 for w_1 . We have already shown that were Thor to exchange w_0 for w_1 , then Thor would actualize some better world in the sequence. Recall actualizing some world or other is rationally preferable to actualizing the default world, and those are Thor's exclusive options. We concluded that Thor is not permitted to actualize w_0 .

But we know from the rationality assumption in R1 that for any world w_n , if it is true that Thor would actualize some world or other in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *permitted* to exchange w_n for w_{n+1} . So now we reach the additional conclusion that Thor is *permitted* to exchange w_n for w_{n+1} .

Let's show finally that Thor is permitted to actualize w_0 . We established previously that were Thor to exchange w_0 for w_1 , then he would not actualize any world in the sequence. It followed that Thor is not permitted to exchange w_0 for w_1 . But we know from the rationality assumption in R3 that for any world w_n , if it is true that Thor would not actualize some world in the sequence, were he to exchange w_n for w_{n+1} , then Thor is *permitted* to actualize w_n . And so of course we reach the additional conclusion that Thor is *permitted* to actualize w_n .

We have reached a conclusion that is impossible. The infinite sequence of improving worlds together with our rationality assumptions entails that Thor is *permitted* to actualize w_0 and Thor is *not permitted* to actualize w_0 . These assumptions also entail that Thor is permitted to exchange w_0 for w_1 and Thor is not permitted to exchange w_0 for w_1 . Since the world w_0 was arbitrarily selected, these conclusions generalize to any world in the sequence. But that is impossible.

2.4 CAN PERFECT FORESIGHT SOLVE THE PROBLEM?

Since Thor is omniscient he would foresee—as we have just seen—that the reasoning that applies to w_0 also applies to every other world in the sequence. So Thor would *foresee* that he would not be permitted to actualize w_1 and he would not be permitted to actualize w_2 , and so on for every other world in the sequence. If he were to exchange w_0 for w_1 , then he knows that he would

actualize no world at all. Since Thor foresees that he would actualize no world at all, perhaps our initial conclusion was mistaken. Perhaps it was a mistake to conclude that Thor is not permitted to actualize w_0 .

We found above that there is no world in the sequence that Thor would actualize, were he to exchange w_0 for w_1 . And we concluded from R2 that Thor is not permitted to exchange w_0 for w_1 . Might it have been too hasty, then, to conclude that Thor is not permitted to actualize w_0 ? Unfortunately the conclusion was not too hasty. The very same reasoning that led us to conclude that Thor is not permitted to exchange w_0 for w_1 applies *mutatis mutandis* to every world in the sequence. Specifically, we find that, were Thor to exchange w_0 for w_1 , then he would not be permitted to exchange w_1 for w_2 , and were Thor to exchange w_1 for w_2 , then he would not be permitted to exchange w_2 for w_3 ; and, more generally, were Thor to exchange w_n for w_{n+1} , then he would not be permitted to exchange w_{n+1} for w_{n+2} . Since R4 ensures that Thor never does what is rationally impermissible, it follows that, were Thor to exchange w_0 for w_1 , then he *would not* exchange w_1 for w_2 . Since there is something that Thor would do, we can conclude that, were Thor to exchange w_0 for w_1 , he would actualize the better world w_1 . And so we arrive again at the conclusion that Thor is not permitted to actualize w_0 .

Perfect foresight cannot solve the problem Thor faces. We are again forced to the conclusion that every option at every world is permissible and not permissible. And once again that is impossible. Therefore there must be some false assumption in the argument. It is evident that there is no infinite sequence of improving worlds, or some rationality assumption is false.

2.5 A SIMPLER VERSION OF THE ARGUMENT?

There is a simpler version of the argument discussed in (2.1) and (2.2). We know that were Thor to exchange w_0 for w_1 , then there is something that Thor would do. Suppose that Thor would thereafter actualize no world in the sequence. By R2 Thor is not permitted to exchange w_0 for w_1 and by R3 Thor is permitted to actualize w_0 .

But if Thor would actualize no world after exchanging w_0 for w_1 , then he would actualize no world after exchanging w_1 for w_2 , and he would actualize no world after exchanging w_2 for w_3 , and so on. But then, by R2 Thor is not permitted to exchange w_1 for w_2 , and Thor is not permitted to exchange w_2 for w_3 , and Thor is not permitted to exchange w_3 for w_4 , and so on. But the *Rational Perfection Principle* in R4 ensures that Thor never does what he is not rationally permitted to do. Therefore, were Thor to exchange w_0 for w_1 he would actualize some world in the sequence, and were Thor to exchange w_1 for w_2 he would actualize some world in the sequence, and were Thor to exchange w_2 for w_3 he would actualize some world in the sequence, and so on. But then, by R0 Thor is permitted to exchange w_0 for w_1 and by R1 Thor is not permitted to actualize w_0 .

The argument is easily reversed. We concluded above that for every world in the sequence w_n , were Thor to exchange w_n for w_{n+1} , then Thor would actualize some better world in the sequence. And it followed by R0 that Thor is permitted to exchange w_0 for w_1 and by R1 that Thor is not permitted to actualize w_0 . Let's assume, then, that it is true at every world w_n that Thor would actualize some world in the sequence were he to exchange w_n for w_{n+1} . It then follows by R1 that Thor is not permitted to actualize w_0 , and Thor is not permitted to actualize w_1 , and so on for every world in the sequence. But R4 ensures that Thor never does what he is not rationally permitted to do. Therefore, were Thor to exchange w_0 for w_1 , he would not actualize some better world in the sequence. And so it follows by R2 that Thor is not permitted to exchange w_0 for w_1 , and it follows by R3 that Thor is permitted to actualize w_0 .

The reasoning in brief is that if Thor is permitted to actualize some world, it follows that he is permitted to actualize any world. But if he is permitted to actualize any world, then he is not permitted to actualize some world. The reasoning is similar for the option to exchange worlds. If Thor is permitted to exchange some world, then he is permitted to exchange every world. But if he is permitted to exchange every world, then he is not permitted to exchange some world.

We again reach the impossible conclusion. For any arbitrarily chosen world in the sequence w_n , Thor is permitted to actualize w_n and Thor is not permitted to do so. Further, Thor is permitted to exchange w_n for w_{n+1} and Thor is not permitted to do so. Therefore, there must be some false assumption in the argument.

2.6 PROBLEMS FOR THE RATIONAL PERFECTION PRINCIPLE

The rationality assumptions R0 through R4 together entail a logical contradiction. If there is an infinite sequence of improving worlds, then one or more of the rationality assumptions is false.

Suppose rationality assumption R2 is false. It follows that Thor is permitted to exchange a world w_n for w_{n+1} even if thereafter he would actualize no world at all. This is equivalent to concluding that Thor is permitted to actualize the default world w_d . But then suppose that R3 is false. It again follows that Thor is permitted to actualize w_d . Some might find these conclusions radical solutions to the problem.

Suppose instead that rationality assumption R0 is false. It follows that Thor is permitted to actualize world w_n even if he would actualize a better world were he to exchange w_n for w_{n+1} . The conclusion is equivalent to the proposition that a perfectly rational being is permitted to actualize a less-than-best world. If we suppose instead that R1 is false, then a perfectly rational being might be prohibited from exchanging upward even in cases where we know that were he to exchange w_n for w_{n+1} he would actualize a

better world. The rejection of any of these rationality assumption entails at least that a perfectly rational being is permitted to actualize a less-than-best world in the sequence. Again, that might seem like a radical conclusion.

But reconsider the *Rational Perfection Principle* in R4.

- R4. Necessarily, an agent has a rational requirement to perform A only if the agent performs A.

According to the principle in R4, agents fulfill every rational requirement in every world. R4 is a valid principle of rationality only if it is possible to fulfill the set of rational requirements at every world. But given R0-R3 in contexts of infinitely improving sequences, it is impossible to fulfill every rational requirement at every world. Recall that, for every world w_n in the sequence, Thor is not permitted to actualize w_n , Thor is not permitted to actualize the default world w_d , and Thor is not permitted to exchange w_n for w_{n+1} . So at each world in the sequence some rationally prohibited action must be performed. Since fulfilling every rational requirement at every world is impossible, it is clear that the *Rational Perfection Principle* is invalid in contexts of infinitely improving worlds.

For anyone who endorses R0-R3, the only reasonable conclusion is to reject the rationality assumption in R4. No contradiction is forthcoming from R0 through R3 alone. In contexts of infinitely improving sequences, it is false that perfectly rational agents fulfill all of their rational requirements at every world. Perfectly rational agents are not governed by the *Rational Perfection Principle* in contexts of infinitely improving worlds since the *Rational Perfection Principle* is invalid in contexts of infinitely improving worlds.

2.7 NECESSARY RATIONAL DILEMMAS AND OTHER PRINCIPLES

Perfectly rational beings can find themselves in a rational dilemma. Rational dilemmas are situations in which it is impossible for a rational agent to fulfill all of her rational requirements. But we have found that Thor faces a rational dilemma in every possible world. At every world w_n in the sequence Thor is not permitted to actualize w_n , not permitted to exchange w_n for w_{n+1} , and not permitted to actualize w_d . But it is necessary that Thor actualizes w_n or exchanges w_n for w_{n+1} or actualizes w_d . Thor therefore faces a *necessary rational dilemma*. Necessary rational dilemmas are unconditional dilemmas and therefore unavoidable even for omnipotent beings. Indeed, every omnipotent agent in a necessary rational dilemma necessarily fails to fulfill some rational requirement. So the failure to fulfill every rational requirement does not diminish their rationality.

The *Rational Perfection Principle* guarantees that every rationally perfect agent fulfills all of his rational requirements. If we let O represent rational obligation or rational requirement and \Box represent broad logical necessity, then the *Rational Perfection Principle* has the formal representation in $\Box(OA \supset A)$. In every world a perfectly rational agent fulfills all of his rational requirements. But in necessary rational dilemmas it is not possible for any agent to fulfill all of his rational requirements, since the consistency principle in (C) is falsified.

$$C. (OA_1 \ \& \ OA_2 \ \dots \ \& \ OA_n) \supset \Diamond(A_1 \ \& \ A_2 \ \& \ \dots \ \& \ A_n)$$

The falsification of (C) follows from the fact that there is no possible world in which every requirement is fulfilled, but the rational rules in R0-R3 generate the requirements in the antecedent of (C). Since the *Rational Perfection Principle* entails (C), the *Rational Perfection Principle* is also false. It is not true that a perfectly rational being must fulfill all of his rational requirements.

Of course we should be cautious in abandoning rational principles as basic as (C). If (C) is a basic rational principle, then our only alternative is to abandon R0, R1, R2, or R3. These proposed principles of rationality are themselves more controversial than the consistency principle in (C), and so we have an excellent case for rejecting one or more of these principles of rationality. We should be committed to the basic consistency requirement in (C). In that case it is not true at each world w_n in the sequence that a perfectly rational agent is not permitted to actualize w_n , not permitted to exchange w_n for w_{n+1} , and not permitted to actualize w_d .

2.8 POLLOCK ON INFINITE OPTIONS

John Pollock urges that decision problems be resolved by comparing the expectation values of alternative strategies. A strategy is simply a prescription of a series of actions at a time t in a world w . A maximal strategy is a prescription of a consistent set of actions from time t onward at a world w . In determining which strategy to adopt we should compare the expectation value of the best maximal strategies that include those smaller strategies.⁷ Pollock proposes the following two principles of rationality where A is either an action or a strategy and $E(S)$ is the expectation value of strategy S.

- P1. Action A is rationally obligatory iff A is prescribed by some maximal strategy which is rationally preferable to any maximal strategy that does not prescribe A.

Principle P1 prescribes those acts and strategies that are included in preferred maximal strategies. Suppose S_t is the nonmaximal strategy including all of the prescriptions of S up to time t . Principle P2 makes one maximal

strategy S preferable to another S' if and only if each nonmaximal strategy that S prescribes after some time t has a higher expectation value than each nonmaximal strategy that S' prescribes.

- P2. A maximal strategy S is rationally preferable to another S' iff there is a time t_0 such that for every time t later than t_0 , $E(S_t) > E(S'_t)$.

Principle P2 has the unusual consequence that a maximal strategy S might be rationally preferable to S' in cases where the expectation value of S is lower than the expectation value of S' . But expectation value alone does not make one maximal strategy preferable to another. There are situations in which two maximal strategies S and S' have the same total expectation values but where S is preferable to S' .

As a further confirmation of [principle P2] notice that it is only a contingent fact that human beings have a finite life expectancy. Suppose there were a race of Methuselahs who lived forever. It might then happen that any halfway reasonable maximal strategy would have an infinite expectation value—it would just keep picking up more and more utility as it unfolded. . . . We might have two such strategies S and S' such that for all times t , the expectation value for S_t was one million times that of S'_t . A Methuselah that followed S' would be irrational. It is [principle P2] that explains why that is the case.⁸

Of course the fact of the matter is that human beings have a finite life span. According to principle P2, a life spent in utter toil that finishes even slightly better than a life spent in utter joy is rationally preferable. It is difficult to make that plausible. But more serious theoretical problems for P1 and P2 emerge in circumstances that include an infinite set of options.

Suppose we have some type of act which can only be done once but the longer it is postponed the greater the expectation value for doing it. Then [my rationality principles] would counsel never doing it, because for each strategy prescribing doing it at a particular time, there is a strategy with a higher expectation value which prescribes doing it at a later time. For example, a bottle of fine wine normally improves with age for a while, but then goes bad. Consider however a bottle of *EverBetter* wine which continues to get better forever. When should we drink it? [My rationality principles] imply that for each time t we should not drink the wine at t because a preferable strategy would prescribe drinking it at $t + \Delta$ for some Δ . On the other hand for any time t a strategy prescribing that we drink the wine at t will be rationally preferable to one prescribing that we never drink the wine, so by [my principles] it is rationally obligatory that we drink the wine at some time but also rationally obligatory that we not drink it at each particular time. In other words [my principles]

issue inconsistent prescriptions and hence conflict with the principle of the consistency of rationality. It follows that they must be incorrect.⁹

The principle of the consistency of rationality is stronger than the rational ought-can principle. Let O symbolize rational obligation and let \diamond be the familiar logical possibility operator. The consistency principle and its semi-formal representation are in (C).

- C. If each member of a set of acts is rationally obligatory at t , then it must be possible at t to perform all of them.¹⁰

$$(OA_t \ \& \ OB_t \ \& \ OC_t) \supset \diamond(A \ \& \ B \ \& \ C)_t$$

(C) requires both that it is possible to perform *each* rational obligation that holds at t and that it is possible to perform *every* rational obligation that holds at t .

We should note that principle (C) is not in general necessary to guarantee rational consistency. Frank Jackson, for instance, offers a nice illustration of a rationally consistent violation of (C).

Professor Procrastinate receives an invitation to review a book. He is the best person to do the review, has the time, and so on. The best thing that can happen is that he says yes and then writes the review when the book arrives. However, suppose it is further the case that were Procrastinate to say yes he would not in fact get around to writing the review. Not because of incapacity or outside interference or anything like that but because he would keep on putting the task off. Thus although the best that can happen is for Procrastinate to say yes and then write, and he can do exactly this what would in fact happen were he to say yes is that he would not write the review. Moreover we may suppose that this latter is the worst that can happen.¹¹

Procrastinate has a rational obligation to decline the invitation to write the review since accepting the invitation would result in the worst possible outcome. But Procrastinate also has a rational obligation to accept the invitation and write the review since that would result in the best possible outcome. But then Procrastinate ought not to accept and ought to accept and write. Professor Procrastinate's obligations provide a clear violation of C.

- O. Procrastinate ought not to accept and Procrastinate ought to accept and write but it is impossible that Procrastinate accept and also not accept and write.

$$(O\sim A \ \& \ O(A \ \& \ W)) \ \& \ \sim\diamond(A \ \& \ (\sim A \ \& \ W))$$

Still, if Procrastinate were to accept the invitation and write the review, then he would fulfill *all* of his rational obligations. After all, it would then not be true that he ought not to have accepted the invitation to write. In general a violation of (C) is inconsistent if rational obligation is closed under implication.

- A. If it is rationally obligatory that A at t and rationally obligatory that B at t, then it is rationally obligatory that both A and B at t.

$$(OA_t \ \& \ OB_t) \supset O(A \ \& \ B)_t$$

Not everyone accepts the closure of rational obligation under implication. But let's set these considerations aside for the moment.

Reconsider Pollock's argument for the inconsistency of principles P1 and P2. The argument does not show that those principles issue inconsistent prescriptions since the principle of consistency in (C) is simply invalid in the circumstances Pollock describes. Premise (1) in the argument provides a slightly more formal version of P1.

1. It is rationally obligatory to drink the wine at t if and only if drinking the wine at t is prescribed by some maximal strategy S that is rationally preferable to any maximal strategy S' that does not prescribe drinking the wine at t.

$$OA_t \equiv (\exists S)(\forall S')(((A_t \in S) \ \& \ (\sim A_t \in S') \ \& \ (S > S'))$$

Pollock claims that the right side of the equivalence is false in the *EverBetter* wine example. Here is premise (2) in the argument.

2. There is some maximal strategy S such that for every maximal strategy S', S is better than S', S prescribes not drinking the wine at t and S' prescribes drinking the wine at t.

$$(\exists S)(\forall S')((S > S') \ \& \ (\sim A_t \in S) \ \& \ (A_t \in S'))$$

And premises (1) and (2) entail (3).

3. It is rationally obligatory not to drink the wine at t.

$$O\sim A_t$$

But of course the conclusion in premise (3) generalizes to every time t in the sequence. And so we can conclude that (4) is true.

4. For every time t, it is rationally obligatory not to drink the wine at t.

$$(\forall t)O\sim A_t$$

And (4) seems inconsistent with the proposition that it is rationally obligatory to drink the wine at some time or other.

5. It is rationally obligatory to drink the wine at some time or other.

$$O(\exists t)A_t$$

(4) in fact expresses a conjunction of obligations and (5) expresses a disjunctive obligation. Conjoining the obligations in (5) and (6) get (7).

$$7. (O\sim A_{t_0} \& \dots \& O\sim A_{t_n}) \& O(A_{t_0} \vee \dots \vee A_{t_n})$$

But the obligations in (7) do not generate a logical inconsistency since the consistency principle is not valid in *EverBetter Wine*. There is no question that we have the rational obligations in (7) in the *EverBetter Wine* example. But there is no time in the *EverBetter Wine* example where it is possible to fulfill all of our obligations. Contrary to Pollock's conclusion, the obligations in (7) do not violate (C). Rather, the consistency principle in (C) is invalid in the *EverBetter Wine* example. The proposition in (8) is true and clearly falsifies (C).

$$8. ((O\sim A_{t_0} \& \dots \& O\sim A_{t_n}) \& O(A_{t_0} \vee \dots \vee A_{t_n})) \& \sim \diamond((A_{t_0} \vee \dots \vee A_{t_n}) \& (\sim A_{t_0} \& \dots \& \sim A_{t_n}))$$

It follows from (8) that *necessarily* rational agents fail to fulfill some rational requirement at every temporal point in *EverBetter Wine*. But since (C) is invalid in the *EverBetter Wine* example, the obligations in (7) are perfectly consistent. There is no way to generate a contradiction.

In addition to the invalidity of the consistency principle, the *EverBetter Wine* example also invalidates the *Rational Perfection Principle*.

9. Necessarily, an agent has a rational requirement to perform A at t only if the agent performs A at t.

$$\Box(OA_t \supset A_t)$$

The *Rational Perfection Principle* in (9) entails the consistency principle, and since the consistency principle is invalid, so is the *Rational Perfection Principle*. Perfectly rational agents in situations such as *EverBetter Wine* are in a genuine and consistent rational dilemma. But since no rational agent is governed by the invalid *Rational Perfection Principle* in *EverBetter Wine*, it is possible that these agents fail to fulfill some rational requirement.

2.9 IN FAVOR OF THE CONSISTENCY PRINCIPLE

The consistency principle entails that the standard governing rational agents is consistent. An inconsistent rational standard or an inconsistent

principle of rationality generates prescriptions that are impossible to fulfill, and so naturally an inconsistent rational standard entails that any *Rational Perfection Principle* is false.

But does the invalidity of the consistency principle also entail that there cannot be an essentially rationally perfect agent? Essentially rational agents in necessary rational dilemmas are rationally required to actualize an *impossible* world. But then an essentially rationally perfect being cannot be understood as a being that fulfills every rational requirement. In impossible worlds every being that fulfills every rational requirement is a *rationally imperfect being*. Clearly, then, an essentially rationally perfect being does not fulfill every rational requirement.

Still, we have been given no reason to acquiesce in an inconsistent standard of rationality. Pollock's point is taken that in contexts such as *EverBetter Wine*, the consistency principle in (C) entails that P1 (and P2) is false.

It is not rationally obligatory to drink the wine at t if and only if drinking the wine at t is prescribed by some maximal strategy S that is rationally preferable to any maximal strategy S' that does not prescribe drinking the wine at t . We should urge instead that it is rationally *permissible* to drink the wine at t just in case doing so is prescribed by some preferred maximal strategy.¹² But the consistency principle entails that either it is rationally permissible to drink the wine at some time or it is rationally permissible not to drink the wine at some time.

2.10 INFINITE VALUE AND MIXED STRATEGIES

Suppose that the sequence of improving worlds is the smallest countable infinite sequence, and suppose that no world in the sequence has infinite value. It is obvious that an omnipotent, omniscient, and perfectly rational agent cannot actualize any world in the sequence that has anything more than finite value. But it might be true that a mixed strategy over the set of worlds has an infinite expected value.

Suppose the value of each world w_n in the infinite sequence is equal to n . So the value of world $w_{1000} = 1000$, the value of world $w_{1001} = 1001$, the value of world $w_{1002} = 1002$, and so on. Though each possible world in the sequence has a finite value, there is a probability function over the set of improving worlds that has an *infinite* expected value.

Suppose A_1 is the option to actualize the first world in the infinite sequence, A_2 is the option to actualize the second world in the sequence, A_3 is the option to actualize the third world, and so on. For each A_n , let UA_n be the value of option A_n . Suppose we let the infinite sequence of worlds include only the *even-valued* worlds beginning with world w_2 . Consider the following mixed strategy M over the infinite set of worlds.

$$M = (UA_1 \times \frac{1}{2}) = 1 + (UA_2 \times \frac{1}{4}) = 1 + \dots + (UA_n \times \frac{1}{n \times 2}) = 1 = \infty$$

Each world in the infinite sequence has a finite value, but the expected value of mixed strategy M is infinite. We should therefore expect that a perfectly rational being would prefer M to any pure strategy that puts the probability of actualizing a particular world w_n at one. Clearly the mixed strategy M has an infinite expected value and every pure strategy has finite expected value.

But this is not a good solution to the problem of choosing a world to actualize. There are after all other mixed strategies whose expected value is infinite. Suppose we let the infinite sequence of worlds include all and only *even-valued* worlds beginning with w_4 , and suppose again that UA_n is the value of option A_n . Now consider the following mixed strategy M' over the infinite set of worlds.

$$M' = (UA_1 \times 1/2) > 1 + (UA_2 \times 1/4) > 1 + \dots + (UA_n \times 1/n \times 2) > 1 = \infty$$

Now suppose we use the relevant randomizing device to select a world in M'. No matter what world is actualized in M', the value is greater than it would have been had you used M. In this sense, the strategy in M' dominates the strategy in M. But of course there is another mixed strategy M'' that selects more valuable worlds than those selected by M'. Simply shift the worlds from right to left, leaving off w_2 . Again, the strategy in M'' dominates the strategy in M'.

The problem of selecting the best mixed strategy in contexts of infinitely improving worlds is similar to the problem of selecting the best possible world.¹³ But each mixed strategy has an infinite expected value. So in selecting a mixed strategy we have to choose the best from a set of options all of which has an infinite expected value. It is not true that there is some unique mixed strategy that an essentially perfectly rational being would choose.

2.11 SOBEL ON IMPROVABLE WORLDS AND RATIONAL CHOICE

According to J. Howard Sobel, a perfectly rational agent *simply could not* actualize an improvable world.

A perfect being would not only be omnipotent, omniscient and perfectly good, but *perfectly rational* in choices and actions, and would have a hand in the creation of the world (either he would have chosen the actual world or made a bet on worlds of which it was a possible result). Certainly a perfect being could not create a world or place a bet on worlds for no reason. (“*That’s* for sure,” Leibniz might chime in). A perfect being would act only for the best reasons. And so there are problems posed by the evidence of evil *whether or not there is a best world*, or a best divinely creatable world, or a best divine bet world. . . .¹⁴

As we have found, there are situations in which there is no choice or action that is the best that a perfect being can do. According to Sobel, the fact that the actual world is improvable quickly entails that there exists no perfect being. Sobel's argument does not make explicit reference to the assumption that every world in the infinite sequence is less good than some world. But the assumption in (1) is nonetheless central to his argument.

1. Every world in the infinite sequence is less good than another world in the sequence.

$$(\forall x)(\exists y)(x < y)$$

It follows from premise (1) that there is some world that is better than the actual world.

2. There is some world that is better than the actual world.

$$(\exists y)((@ < y)$$

Sobel's argument is completed with the addition of premise (3).

3. Necessarily, there is some world that is better than the actual world only if there exists no perfect being.

$$\Box((\exists y)((@ < y) \supset (\text{God does not exist}))$$

Premises (2) and (3) together yield the conclusion that a perfect being does not exist and that concludes the argument.

4. God does not exist.

Certainly the most interesting claim in the argument is premise (3). Why believe that a perfect being does not exist if there is some world better than the actual world? Sobel offers the following demonstration that premise (3) is an analytic truth of perfect rationality: "The coming demonstration for the argument proceeds under the assumption that *a perfect being could create any possible world he pleased* (pace Plantinga) and of any world he could make sure that he created it (pace Adams)."¹⁵

Plantinga calls this assumption *Leibniz's Lapse*. So the demonstration assumes that there are no worlds in the sequence that a perfect being could not actualize. The demonstration continues.

The atheist needs therefore persuade only that $\sim \Diamond((\exists y)((@ < y) \ \& \ (\text{A perfect being exists}))$, in words, *it is not possible that both there is a better world w than @ [the actual world] and a perfect being*

exists. This should seem to presently targeted theists “analytic” of perfect practical rationality when that is joined with perfect goodness, omnipotence, and omniscience. For a perfectly good being would *prefer the better to the worse*; an omniscient being would know the relative value of worlds; and it certainly seems that no perfectly rational being chooses, or so much as allows, what it knows it disprefers to something it knows it can choose or allow instead: It seems *hardly* remarkable that “a rational agent never wittingly picks an inferior option.”¹⁶

Presumably we are to conclude that it’s impossible that a perfectly rational, perfectly good, omnipotent, and omniscient being actualizes an improvable world. Since our world is improvable, it is impossible that a perfect being actualized our world.

But reconsider the argument for premise (3). Sobel states explicitly that the argument assumes the principle of rationality in (5).

5. Necessarily, for any rational person z , if z can actualize x , then if z prefers x to y , then z does not actualize y .

$$\Box (\forall z)(\forall y)(\exists x)(\Diamond(zAx) \ \& \ (x < y)) \supset \sim(zAy)$$

And (5) is just equivalent to (6).

6. Necessarily, for any rational person z and world y , if z actualizes y , then there is no x such that x is preferable to y and it is possible that z actualizes x .

$$\Box (\forall z)(\forall y)((zAy) \supset \sim(\exists x)((x < y) \ \& \ \Diamond(zAx)))$$

Of course a perfectly rational agent is among those beings that are rational, and so the choices of a perfectly rational agent are governed by (6). Suppose we apply the principle of rationality to the decision to actualize some world in the sequence. An instantiation on (6) yields (7).

7. $\Box ((\text{God}Aw) \supset \sim(\exists x)((x < w) \ \& \ \Diamond(\text{God}Ax)))$

It follows next from Sobel’s assumption of *Leibniz’s Lapse* that a perfect being could actualize any world in the sequence.

8. $\Box (\forall y)(\exists x)((x < y) \ \& \ \Diamond(\text{God}Ax))$ (2), *Leibniz’s Lapse*.

But the assumptions in (6) and (8) are clearly inconsistent. Suppose we instantiate (8) with the actual world @ and arbitrary world w .

10. $\Box ((w < @) \ \& \ \Diamond(\text{God}Aw)).$

It follows from (10) that it's possible that God actualizes world w or $\diamond(\text{God}Aw)$. But that conclusion together with premise (7) entails (11).

$$11. \quad \sim \Box(\exists x)((x < w) \ \& \ \diamond(\text{God}Ax))$$

And generalizing on (11) we get (12).

$$12. \quad \sim \Box(\forall y)(\exists x)((x < y) \ \& \ \diamond(\text{God}Ax))$$

(8) and (12) are obviously inconsistent. So either Sobel's principle of rationality in (5) is false or *Leibniz's Lapse* in (8) is false. In either case we can consistently maintain that there are worlds better than the actual world and that a perfectly rational being might have actualized our world.

2.12 SOBEL AND SORENSEN ON INFINITE OPTIONS

Roy Sorensen has urged that the transition from a finite set of options to an infinite set of options does not “wash out” the differences we find in the finite set. It is irrational to choose a less preferred option from the finite set of options only if it is irrational to choose that less preferred option from the expanded infinite set.

If the transition to infinite choice really washed out differences, then one could rationalize finite decisions by adding infinitely many more. Given a choice between \$1 and \$2, it is irrational to take the \$1 option. But now suppose one adds infinitely many more options {\$3, \$4, \$5, . . .}. These extra alternatives do not make the choice of \$1 as rational as the choice of \$2.¹⁷

Sobel agrees and elaborates another argument against a perfectly rational being having infinitely many improving options.

Now consider a choice from the set {\$1,\$2,\$3} and see that choosing less than \$3 would be irrational for him and would remain so were the infinitely many options {\$4, \$5, \$6, . . . } added here. And so on for every finite set of options {\$1, . . . , \$n}. No matter how great the greatest option \$n, choosing even \$1 less would be irrational for him and would remain irrational after the expansion of his choice-set to infinity. Of course! Why bother to say such things? Because it follows that, for no number k , would his choosing \$ k from the infinite choice-set {\$1, \$2, \$3, . . . } be rational. [And that's because] it would not be rational to choose \$ k from the finite choice-set {\$1, . . . , \$ k , \$($k + 1$)}. That means that a rational person cannot be in a situation in which the choice-set is {\$1, \$2, \$3, . . . }, though someone like

him, except for being a touch irrational, could be in it . . . and walk away with a bundle.¹⁸

It is evident that this argument simply assumes that Sobel's principle of rationality in (1) is true.

1. Necessarily, for any rational person z and world y , if z actualizes y , then there is no x such that x is preferable to y and it is possible that z actualizes x .

$$\Box (\forall z)(\forall y)((zAy) \supset \sim(\exists x)((x < y) \ \& \ \Diamond(zAx))$$

Assume then that there are infinitely many increasingly valuable options in the set $S = \{\$1, \$2, \$3, \dots\}$. It is necessarily true that for every option in S there is a better option that a perfectly rational, omnipotent, and omniscient being could choose.

2. $\Box(\forall x)(\exists y)((x < y) \ \& \ \Diamond(\text{God}Ay))$

But from (1) and (2) we arrive at (3).

3. $\Box(\forall x)\sim(\text{God}Ax)$

We can now simplify and instantiate on (2).

4. $\Diamond(\text{God}Aw)$

But of course a contradictory premise follows from an instantiation on (3).

5. $\sim\Diamond(\text{God}Aw)$ 4,5 *Contradiction!*

Sobel's argument is clearly unsound. Premise (4) and premise (5) cannot both be true. Premise (1) expresses Sobel's principle of rationality. Premise (2) states that for every option in S there is a better option that a perfectly rational being could choose instead. If it is true that an omnipotent being could select any option in S —if it is true that a perfectly rational being could actualize a world in which he chooses the first option, a world in which he chooses the second option, and so on for every option in S —then the only reasonable conclusion is to reject Sobel's principle of rationality.

Of course the rejection of Sobel's principle of rationality does not entail that the differences among options is washed out and a perfect being might choose any option in the sequence. It entails rather that a perfectly rational being might fail to choose some option in S for which there is a better option in S he could have chosen. But that conclusion is consistent with the position, for instance, that a perfect being cannot fail to choose an

option that is less than some particular amount in the sequence. So rejecting Sobel's principle of rationality does not drive us to the conclusion that a perfectly rational being might randomly choose some option from the set S or that the differences among options in S are entirely washed out. The matter depends on the discovery of another plausible and principled basis for distinguishing among the options in S .

2.13 CONCLUSIONS

There are various choice situations in which perfectly rational beings must choose from an infinite set of improving options. In section (2.2) we consider situations in which rules R0–R3 expressed the standard of rationality and R4 expressed the *Rational Perfection Principle*. We showed that it is impossible that R4 and R0–R3 are all true in contexts whose options include infinitely many improving worlds. In section (2.7) we urged caution against abandoning principles as basic as the consistency principle in (C). If rational standards must meet the basic condition of consistency, then the only reasonable conclusion is to abandon R0, R1, R2, or R3.

In section (2.8) we considered John Pollock's well-known *EverBetter Wine* problem for perfectly rational agents. In section (2.9) we argued again in favor of the consistency principle. We argued similarly against arguments developed by Sobel and Sorensen. Rational standards meet the basic condition of consistency only if Pollock's principles of rationality in P1 (and P2) and Sobel's rationality principle are false.

Arguments against essentially perfectly rational agents are in general incompatible with basic principles of consistency. But basic consistency principles entail that rational standards do not in general require that essentially perfectly rational agents choose the best option in every world. In at least some worlds, essentially perfectly rational agents are rationally permitted to choose a less-than-best option.

3 On Evil's Vague Necessity

3.1 INTRODUCTION

It is the standard position on the existence of evil that a perfect being could not permit even one instance of evil that serves no purpose. Among those who have defended the standard position on evil is William Rowe:

An omniscient, wholly good being would prevent the occurrence of *any intense evil it could*, unless it could not do so without thereby losing some greater good or permitting some evil equally bad or worse.¹

According to Peter van Inwagen, the standard position on the existence of evil is false. A perfect being would prevent the occurrence of any intense suffering it could only if there exists some minimum amount of evil that is necessary to the purposes of a perfect being. The minimum evil necessary for divine purposes is the least amount of evil such that any greater evil is unnecessary for divine purposes.² But van Inwagen urges that it is implausible to suppose that there is some amount of evil that is the minimum necessary.

It is not very plausible to suppose that there is a way in which evil could be distributed such that (i) that distribution of evil would serve God's purposes as well as any distribution of evil could and (ii) God's purposes would be less well served by any distribution involving less evil.³

It is plausible to suppose instead that for any amount of evil such that any greater evil is unnecessary for God's purposes there is some lesser amount of evil such that any greater evil is unnecessary for God's purposes. Call that the *No Minimum Thesis*. There is therefore no least amount of evil such that any greater evil is unnecessary for divine purposes. According to van Inwagen, the *No Minimum Thesis* together with some uncontroversial assumptions entails that the standard position on evil is false. And we arrive at the conclusion that a perfect being might exist along with pointless and preventable evil.

I present next van Inwagen's *No Minimum* argument against the standard position on evil. I show in (3.2) that the premises in the argument

cannot all be true together and that therefore the argument offers no reason to believe that the standard position on evil is false. Contrary to the *No Minimum* argument, the standard position on evil does not entail that there is a discrete transition between evil that is unnecessary for divine purposes and evil that is necessary for divine purposes. In (3.3) I provide a reformulation of the *No Minimum* argument that assumes a greatest lower bound on evil that is unnecessary for divine purposes. The reformulated argument mistakenly entails that there is a discrete transition between an amount of evil that is necessary for divine purposes and the amount that is unnecessary for divine purposes. In section (3.4) I offer the *Vague Minimum Thesis*. The thesis guarantees that there is no discrete transition between amounts of evil that are necessary and amounts of evil that are unnecessary for divine purposes. The *Vague Minimum Thesis* poses no threat to the standard position on evil. In (3.5) I consider some alternative formulations of the *No Minimum Thesis*. I argue that the alternative formulations are consistent with the *Vague Minimum Thesis* and do not advance van Inwagen's argument. In (3.6) and (3.7) I show that degree-theoretic and epistemicist interpretations of the *No Minimum* argument do not advance van Inwagen's argument against the standard position on evil. In (3.8) I consider the higher-order vagueness of unnecessary evil and show that it too presents no problem for the standard position. In (3.9) I consider whether, for every amount of evil k that is unnecessary for divine purposes, an omniscient being would know that k is unnecessary for divine purposes. I argue that an omniscient being would know and conclude that the knowledge of omniscient beings poses no problem for the standard position on evil. I offer some closing comments in (3.10).

3.2 VAN INWAGEN'S NO MINIMUM ARGUMENT

Suppose there is a divine purpose to bringing about a world containing higher-level sentient beings. Perhaps the existence of higher-level sentient beings is necessary to some very important moral good—a moral good that outweighs all sentient suffering. It might be true that a series of miraculous interruptions in natural law could prevent every instance of sentient suffering. But suppose that preventing every instance of sentient suffering would produce a moral defect—the bad effects of a massive irregularity in natural law—that is at least as great as any pattern of suffering among sentient beings. It might then be true that a perfect being could permit an amount of evil that is not the minimum evil necessary for divine purposes. Here is the *No Minimum* argument.

But what of the hundreds of millions (at least) of instances [of intense suffering similar to Rowe's fawn] that have occurred during the long history of life? Well, I concede, God could have prevented any one of them,

or any two of them, or any three of them . . . without thwarting any significant good or permitting any significant evil. But could He have prevented all of them? No—not without causing the world to be massively irregular. And of course there is no sharp cutoff point between a world that is massively irregular and a world that is not. . . . There is, therefore, no minimum number of cases of intense suffering that God could allow without forfeiting the good of a world that is not massively irregular.⁴

But if there is no minimum amount of evil necessary for divine purposes, van Inwagen urges, we cannot conclude that God is unjust or cruel for permitting more than the least amount of evil necessary for those purposes.

But if there is no minimum of evil that would serve God's purposes, then one cannot argue that God is unjust or cruel for not "getting by with less"—any more than one can argue that a law that fines motorists \$25.00 for illegal parking is unjust or cruel owing to the fact that a fine of \$24.99 would have an identical deterrent effect.⁵

According to the standard position on evil, a perfect being cannot permit more than the minimum evil necessary for divine purposes. Every instance of evil that exceeds the minimum necessary is, of course, unnecessary or pointless. But according to the *No Minimum* argument, it is true both that some evil is necessary for divine purposes and that no evil is the minimum necessary for divine purposes. A perfect being can realize his divine purposes only if he permits more than the minimum evil necessary. But van Inwagen urges that certainly a perfect being is permitted to actualize the great goods in his divine purposes. Therefore the standard position on evil is mistaken.

According to the *No Minimum* argument, an omnipotent being might allow pointless and preventable evil and display no moral imperfection at all. And that is reason to suspect that the *No Minimum* argument has gone wrong. Suppose we reconsider the premises in the argument. Let k be the total amount of evil in the actual world including every instance of intense suffering among sentient beings. The *No Minimum* argument assumes that the amount of evil in k is such that any greater amount of evil is unnecessary for divine purposes. Indeed, van Inwagen proposes the stronger assumption that the amount of evil in k exceeds the amount necessary for divine purposes. He simply concedes that many actual instances of intense sentient suffering do not serve any divine purpose. The initial premise of the *No Minimum* argument states the following.

1. The actual amount of evil k is such that any greater amount of evil is unnecessary for divine purposes.

But according to the *No Minimum* argument, an amount of evil k_n is not the least amount of evil necessary for divine purposes only if , for some positive

increment in evil i , the amount of evil k_{n-i} is not the least amount of evil necessary for divine purposes. In fact, van Inwagen finds it a very plausible assumption that for any amount of evil that would have served God's purposes, slightly less evil would have served His purposes just as well.⁶ However bad we find the actual world, it seems unlikely that there is an infinite amount of actual evil. But let's suppose that the amount of evil between 0 and k is at least infinitely divisible.⁷ Let i be some increment in evil between 0 and k . There is then a sequence S in total amounts of evil that begins at the actual amount k and ends at 0 and is such that $k > k_{-i} > k_{-2i} > k_{-3i} > \dots > 0$. The second premise in the argument expresses the *No Minimum Thesis*.

2. There is some increment i ($i > 0$) such that for any amount of evil k_n ($k \geq k_n > 0$), if k_n is such that any greater amount of evil is unnecessary for divine purposes, then k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes.⁸

The *No Minimum Thesis* expresses the proposition that, for each amount of evil k_n ($k \geq k_n > 0$) in the sequence S , if k_n is such that any greater amount of evil is unnecessary for divine purposes, then, for some positive increment in evil i , the same is true of the lesser amount of evil k_{n-i} .

But from premise (1) together with the *No Minimum Thesis* we can derive premise (3).

3. There is no amount of evil k_n ($k \geq k_n > 0$) that is the *least* amount of evil such that any greater amount of evil is unnecessary for divine purposes. From (1) and (2).

Let's show that (3) follows from premise (1) and the *No Minimum Thesis*. Suppose premise (3) is false. It follows that there is some *least* amount of evil k_n ($k \geq k_n > 0$) such that any greater amount of evil is unnecessary for divine purposes. But it follows from the *No Minimum Thesis* and premise (1) that for every amount of evil k_n ($k \geq k_n > 0$) there is a *lesser* amount of evil k_{n-i} such that any greater amount is unnecessary for divine purposes. So our supposition is false. It follows that premise (3) is true.

The minimum evil necessary for divine purposes is just the least amount of evil such that any greater evil is unnecessary for divine purposes. But from premise (3) we know that there is no least amount of evil such that any greater is unnecessary for divine purposes. And so we arrive at premise (4).

4. There is no minimum amount of evil k_n ($k \geq k_n > 0$) necessary for divine purposes. From premise (3).

Now, according to the theodicy that van Inwagen offers—a story offered as a plausible elaboration on the data of Christian revelation—a certain amount of suffering and evil is *necessary* for divine purposes. It is impossible, for instance, for God to prevent every instance of intense suffering

among sentient beings without thereby causing a moral defect that is at least as bad. The *No Minimum* argument therefore assumes that at least some instances of evil are necessary for divine purposes.

5. There is some amount of evil k_n ($k \geq k_n > 0$) that is necessary for divine purposes.

Assumption.

We know from premise (4) that there is *no minimum* amount of evil necessary for divine purposes. And we know from (5) that some amount of evil is necessary for divine purposes. Now certainly a perfect being would permit enough evil and suffering to realize divine purposes. So we arrive at premise (6).

6. A perfect being would permit an amount of evil k_n ($k \geq k_n > 0$) that is sufficient to realize divine purposes. Assumption.

An amount of evil k_n ($k \geq k_n > 0$) is sufficient for divine purposes just in case there is no greater amount of evil necessary for divine purposes. But for every amount of evil k_n ($k \geq k_n > 0$), k_n is either *less than* the minimum necessary for divine purposes or k_n *more than* the minimum necessary for divine purposes. Any amount of evil that is less than the minimum necessary for divine purposes is an amount that is insufficient to realize those purposes. The *No Minimum* argument therefore concludes that a perfect being would permit an amount of evil that is greater than the minimum necessary for his purposes. From premises (4), (5), and (6) we arrive at premise (7).

7. A perfect being would permit some amount of evil k_n ($k \geq k_n > 0$) greater than the minimum amount of evil necessary for divine purposes. From (4), (5), and (6).

Of course, in defense of the standard position on evil it might be urged that a perfect being simply could not permit more than the minimum evil necessary for divine purposes. Premise (7) would then constitute an absurd consequence of the assumption that there are divine purposes for which there is no least amount of evil necessary. But suppose we set this objection aside. It follows directly from premise (7) that the standard position on evil is mistaken.

8. Therefore the standard position on evil is false. From (7).

The standard position on evil states that a perfect being would prevent the occurrence of any pointless evil it could. But according to (7) a perfect being would permit an amount of evil that is greater than the minimum necessary for divine purposes. But then a perfect being would not prevent the occurrence of all the pointless evil it could. The standard position on evil is therefore false.

3.3 WHY THE NO MINIMUM ARGUMENT FAILS

The *No Minimum* argument is designed to show that the standard position on evil is false. Premise (1) assumes that any amount of evil exceeding the actual amount is unnecessary for divine purposes.

1. The actual amount of evil k is such that any greater amount of evil is unnecessary for divine purposes.

And premise (2) expresses the *No Minimum Thesis*.

2. There is some increment i ($i > 0$) such that for any amount of evil k_n ($k \geq k_n > 0$), if k_n is such that any greater amount of evil is unnecessary for divine purposes, then k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes.

And since our theodicy assumes that some amount of evil is necessary for divine purposes, the *No Minimum* argument also includes premise (5).

5. There is some amount of evil k_n ($k \geq k_n > 0$) that is necessary for divine purposes.

But these premises cannot all be true together. Premises (1) and (2) entail that premise (5) is false. We know from premises (1) and (2) that every amount of evil in S is such that any greater amount of evil is unnecessary for divine purposes. Suppose for *reductio ad absurdum* that (5) is true and k_n is necessary for divine purposes. We know there is some amount of evil $k_j > k_n$ in S such that k_j is unnecessary for divine purposes. For any positive increment i and repeated applications of premise (2), it follows that k_n is unnecessary for divine purposes. That's impossible. Therefore our supposition is false. It follows from premises (1) and (2) that no amount of evil—not so much as the scratching of a finger—is necessary for divine purposes. So contrary to (5), no amount of evil k_n ($k \geq k_n > 0$) in S is such that k_n is necessary for divine purposes.

We know that premises (1), (2), and (5) in the *No Minimum* argument cannot all be true. The *No Minimum* argument must contain at least one false premise. The argument is therefore unsound. I consider in (3.3) an illuminating reformulation of the *No Minimum* argument.

3.4 NO MINIMUM REFORMULATED

According to the *No Minimum* argument, there is some amount of evil that is necessary for divine purposes. We can stipulate without loss of generality that some amount or other *greater than 50 turps* of evil is necessary for divine purposes. Let's suppose further that for any amount of evil k_n

greater than 50 turps there is some increment $i = \frac{1}{2}(k_n - 50)$ such that k_{n-i} serves divine purposes just as well. We arrive at the conclusion that *some amount or other* of evil greater than 50 turps is necessary for divine purposes, and each particular amount of evil greater than 50 turps exceeds the least amount necessary for divine purposes.

In the reformulated *No Minimum* argument, premise (1) is true just in case the actual amount of evil k_n exceeds 50 turps.

1. The actual amount of evil k_n is such that any greater amount of evil is unnecessary for divine purposes.

If we put k at 50 turps of evil, then the *No Minimum Thesis* states that for any amount of evil k_n greater than k there is some increment i ($i > 0$) such that k_{n-i} is unnecessary for divine purposes. The reformulated *No Minimum Thesis* in (2a) is weaker than the formulation in (2). The *No Minimum Thesis* in (2a) gives narrow scope to our quantification over increments of evil and so permits those increments to decrease in size as we move up the sequence S .

- 2a. For any amount of evil k_n ($k > k_n > 0$), if k_n is such that any greater amount of evil is unnecessary for divine purposes, then for some i ($i > 0$) k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes.

Since we have stipulated that $i = \frac{1}{2}(k_n - 50)$, it is evident that premise (2') is true. Premise (5) states that there is some amount of evil greater than k that is necessary for divine purposes.

5. There is some amount of evil k_n ($k > k_n > 0$) that is necessary for divine purposes.

But premise (5) is false under the current assumption that each particular amount of evil greater than k is unnecessary for divine purposes.⁹ Since the scope of the quantifier in premise (5) is wide, it asserts that there is some particular amount of evil greater than k that is necessary for divine purposes. The intuition is that at least some evil is necessary: at least the scratching of a finger is necessary or the death of a single fawn. Indeed, if van Inwagen is right, then quite a large amount of evil is necessary for divine purposes. The theodicy he offers is designed to show the *essential* contribution to God's plan of a good portion of actual evil.

What the theodist must do, given the facts of history, is to say what contribution—what essential contribution—to God's plan of Atonement is made by the facts about the types, magnitude, duration, and distribution of evil that are made known to us by historians and journalists, not to mention our own experience.¹⁰

But in this reformulation of the argument we cannot preserve the intuition that any particular amount of evil, however small, is necessary for divine purposes. Premise (5) is true only if we give the quantifier narrow scope and replace (5) with (5a).¹¹

- 5a. It is necessary to divine purposes that there is some amount (or other) of evil k_n , ($k > k_n > 0$).

Premise (5a) states that it is necessary to divine purposes that there is *some amount of evil or other* greater than k . Consider whether premises (1), (2a), and (5a) are consistent.

Suppose the actual amount of evil k_n equals 60 turps. Since, by hypothesis, any amount of evil greater than k is unnecessary for divine purposes, it follows that k_n is such that any greater amount of evil is unnecessary for divine purposes. According to premise (2a), for any amount of evil k_n , if k_n is such that any greater amount of evil is unnecessary for divine purposes, then for some i ($i > 0$), k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes. Since we have defined $i = \frac{1}{2}(k_n - 50)$, it follows that $k_{n-i} = (k_n/2 + 25)$ or $k_{n-i} = (60/2 + 25) = 55$. It is evident that any amount of evil greater than 50 turps satisfies premise (2a).

The reformulated *No Minimum* argument includes premise (1), (2a), and (5a). But these premises entail that there is some least amount of evil such that any greater amount of evil is unnecessary for divine purposes. At *precisely* k ($= 50$) turps, we arrive at an amount of evil that is less than the total amount of evil necessary for divine purposes, and *any* amount of evil greater than 50 turps is greater than the total amount necessary for divine purposes. Here is van Inwagen again. "But could He have prevented all [instances of evil similar to Rowe's fawn]? No—not without causing the world to be massively irregular. And of course there is no sharp cutoff point between a world that is massively irregular and a world that is not . . ." ¹²

But according to the reformulated *No Minimum* argument, there is a sharp cutoff point between a world that is massively irregular and a world that is not. At precisely 50 turps of evil the world is massively irregular and at any amount of evil—ever so small—greater than 50 turps the world is perfectly regular. So the reformulated *No Minimum* argument entails that there is a precise border between an amount of evil that is less than the total necessary for divine purposes and an amount of evil that is greater than the total amount necessary for divine purposes. Van Inwagen notes elsewhere: "One might as well suppose that if God's purposes require an impressively tall prophet to appear at a certain time and place, there is a minimum height that such a prophet could have." ¹³

But, given the reconstructed *No Minimum* argument, there is a precise height, say 6', such that any prophet that is exactly 6' or less will fail to serve God's purposes and any prophet that exceeds 6' by any amount—say

a prophet that is 6.00000000000001’—would serve God’s purposes perfectly well.

Suppose that a 6’ prophet would not serve God’s purposes and that a world containing 50 turps of evil is massively irregular. It is evident that the world would not suddenly become regular at 50.0000000000001 turps of evil, and a prophet would not suddenly serve God’s purposes perfectly well at 6.00000000000001 feet.

The reformulated *No Minimum* argument contains premises that are simply not credible. The argument entails that there is a precise border between an amount of evil that is less than the total necessary for divine purposes and an amount of evil that is more than the total amount necessary for divine purposes. So the reformulated *No Minimum* argument fares no better than the initial *No Minimum* argument.

3.5 VAGUE MINIMUMS: A SUPERVALUATION SOLUTION

Suppose it’s agreed that the predicate “is necessary for divine purposes” does not sharply divide its positive and negative extensions. There is an amount of evil k_{n-j} that is necessary for divine purposes and an amount of evil k_n that is unnecessary for divine purposes. But there are amounts of evil in the sequence S that are neither necessary for divine purposes nor unnecessary for divine purposes. Now suppose that the actual amount of evil k falls just outside the range of evil that is clearly unnecessary for divine purposes. Figure 3.1 displays the situation that we are considering.

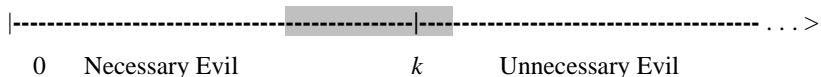


Figure 3.1

The amounts of evil in the shaded area in figure 3.1 are those amounts that are not definitely necessary for divine purposes and not definitely unnecessary for divine purposes. So k falls outside the range of evil that is definitely unnecessary for divine purposes. Supervaluation semantics urges that the truth-value of the proposition “the amount of evil in k is necessary for divine purposes” can be determined *only if* we sharpen or precisify the vague predicate “is necessary for divine purposes.”

But of course there is no unique and nonarbitrary way to make the predicate “is necessary for divine purposes” precise. Any semantic decision to sharpen the predicate will make some arbitrary distinction. Supervaluationism therefore makes it *true* that the amount of evil in k is necessary for divine purposes if and only if that proposition is true on every admissible precisification of “is necessary for divine purposes.” And supervaluationism makes it *false* that the amount of evil in k is necessary

for divine purposes if and only if that proposition is false on every admissible precisification of that predicate. Otherwise the proposition is neither true nor false.

Supervaluation semantics places some important restrictions on admissible precisifications. Propositions that are clearly true (false) prior to precisification must remain true (false) after precisification. The proposition expressed in premise (5) of the *No Minimum* argument, for instance, is assumed to be clearly true and so it must remain true on every precisification. But it is no doubt false that the amount of evil in k_n ($k \geq k_n > 0$) is necessary for divine purposes only if the lesser amount of evil in k_{n-i} ($k_n > k_{n-i} > 0$) is unnecessary for divine purposes. The proposition must therefore remain false on every precisification.

Reconsider the *No Minimum Thesis*. Supervaluation semantics makes the thesis true only if it is true on every admissible precisification of “is necessary for divine purposes.” But on every admissible precisification of that predicate, there will be some *least* amount of evil k_n ($k \geq k_n > 0$) such that any greater amount of evil is unnecessary for divine purposes. If k_n is the least amount of evil such that any greater evil is unnecessary for divine purposes, then of course k_{n-i} is *not* such that any greater amount of evil is unnecessary for divine purposes. We know there is one increment of evil greater than k_{n-i} (namely, k_n) that is necessary for divine purposes. Therefore no matter how we make the predicate precise there will be an exception to the generalization expressed in the *No Minimum Thesis*. It follows that the thesis is false.

But it does not follow that the transition from the amount of evil unnecessary for divine purposes to the amount necessary for divine purposes is discrete. We should replace the *No Minimum Thesis* in (2) with the thesis in (2b).

- 2b. There is no amount of evil k_n ($k \geq k_n > 0$) in S such that for every increment i ($i > 0$) and *every* admissible precisification, k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes.

It follows from (2b) that for every amount of evil k_n ($k \geq k_n > 0$) there is *some* admissible way of sharpening the predicate “is necessary for divine purposes” such that k_n is unnecessary for divine purposes only if k_{n-i} is unnecessary for divine purposes. The thesis in (2b) therefore asserts that there is no discrete transition from the evil unnecessary for divine purposes to the evil necessary for divine purposes. Call (2b) the *Vague Minimum Thesis*.

The *Vague Minimum Thesis* is true.¹⁴ But does it present a problem for the standard position on evil? Suppose that the actual amount of evil k is accurately represented in figure 3.1. According to (2b), there is *some* admissible precisification on which the amount of evil in k is unnecessary for divine purposes and the lesser amount of evil in k_{-i} is also unnecessary for divine purposes. But it does not follow that the standard position on evil prohibits

a perfect being from permitting the evil in k . This is because it is *not true* that the amount of evil in k is unnecessary for divine purposes. Certainly, on some admissible ways of sharpening the predicate “is necessary for divine purposes,” k is unnecessary for divine purposes. But on other admissible ways of sharpening the predicate, k is necessary for divine purposes. Supervaluationism makes it true that k is unnecessary for divine purposes only if k is unnecessary for divine purposes on *every* admissible precisification. The standard position therefore does not prohibit a perfect being from allowing k .

But suppose that the amount of evil in k is clearly unnecessary for divine purposes. Here is van Inwagen: “If there is a purpose that is served by allowing the ‘age of evil’ to have a certain duration, doubtless the same purpose would be served if the age of evil were cut short by a day, a year or even a century.”¹⁵

Let’s suppose that the actual amount of unnecessary evil is the amount contained in an additional day in the “age of evil.” Suppose the amount of evil in k is close to the amount depicted in figure 3.2.

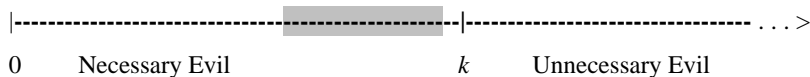


Figure 3.2

The amount of evil k is clearly unnecessary for divine purposes. But it is also obvious in figure 3.2 that k does not include a great deal of unnecessary evil. Still, it is true on every admissible precisification that the amount of evil in k is unnecessary for divine purposes. So even under the assumption that k does not contain a great deal of unnecessary evil, the standard position does not allow a perfect being to permit k .

Consider the interpretation of the standard position that is most favorable to theism. It is also the most plausible version of that principle. The standard position on evil holds that a perfect being would not permit any amount of evil k_n that is *definitely* unnecessary. The amount of evil k_n is definitely unnecessary for divine purposes just in case it is unnecessary on every admissible precisification.

SP1. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if and only if, on every admissible precisification, k_n is unnecessary for divine purposes.

We can therefore conclude that a perfect being would not permit the amount of evil we find in the actual world if—as van Inwagen proposes in the *No Minimum* argument—the actual amount of evil is definitely unnecessary for divine purposes.

The *Vague Minimum Thesis* in (2b) guarantees that there is no discrete transition between the amount of evil that is unnecessary for divine

purposes and the amount of evil that is necessary for divine purposes. But this presents no problem for the standard position on evil. The standard position in SP1 entails that a perfect being would not permit any amount of evil that is definitely unnecessary for divine purposes. And SP1 and (2b) are perfectly consistent.

3.6 ALTERNATIVE NO MINIMUM THESESES

Supervaluation semantics provides a simple countermodel to the *No Minimum Thesis*. No matter how we make the predicate “is necessary for divine purposes” precise, there will be an exception to the generalization expressed in that thesis. So it is reasonable to replace that thesis with the *Vague Minimum Thesis*.

Jeff Jordan has proposed yet another version of the no minimum thesis.¹⁶ “For any amount of evil k_n ($k \geq k_n > 0$) that is sufficient for divine purposes, there is some increment i such that k_{n-i} is also sufficient for divine purposes.”

Consider whether the proposed thesis advances van Inwagen’s *No Minimum* argument. Suppose that the new thesis asserts (2c).

- 2c. For any amount of evil k_n ($k \geq k_n > 0$) if k_n is such that any greater amount of evil is *definitely* unnecessary for divine purposes then, for some increment i ($i > 0$) k_{n-i} is such that any greater amount of evil is definitely unnecessary for divine purposes.

(2c) entails that every amount of evil greater than some k_n ($k_n \geq 0$) is definitely unnecessary for divine purposes and the amount k_n not definitely unnecessary for divine purposes. This of course assumes a discrete transition between evil that is definitely unnecessary for divine purposes and evil that is not definitely unnecessary for divine purposes. But there is no discrete transition in the sequence. So (2c) does not advance the *No Minimum* argument. But suppose instead the thesis asserts (2d).

- 2d. For any k_n ($k \geq k_n > 0$) if k_n is such that any greater amount of evil is (at least) indefinitely unnecessary for divine purposes, then for some increment i ($i > 0$), k_{n-i} is such that any greater amount of evil is (at least) indefinitely unnecessary for divine purposes.

(2d) entails that every amount of evil greater than some k_n ($k_n \geq 0$) is indefinitely unnecessary for divine purposes and the amount k_n not indefinitely unnecessary for divine purposes. This of course assumes a discrete transition between evil that is indefinitely unnecessary for divine purposes and evil that is not indefinitely unnecessary for divine purposes. But again there

is no discrete transition in the sequence. So (2d) does not advance the *No Minimum* argument.

3.7 A DEGREE-THEORETIC SOLUTION

According to degree-theoretic analyses of vagueness, there are no truth-value gaps. Borderline predications such as “the amount of evil k_n is not clearly unnecessary for divine purposes” are assigned some real value in the (closed) interval $[0,1]$. These real value assignments are typically interpreted as degrees of truth with 1 corresponding to true simpliciter and 0 corresponding to false simpliciter.¹⁷

The degree-theoretic interpretation of the *No Minimum* argument is certainly consistent. The degree-theoretic interpretation of premise (1) states that it is true simpliciter—or true to degree 1—that the actual amount of evil k is unnecessary for divine purposes. We could of course weaken premise (1) to it is *assertable* that the actual amount of evil k is unnecessary for divine purposes. In supervaluation semantics, there is a range in the amounts of evil that are definitely unnecessary for divine purposes. In degree theory there is a range in the amounts of evil that are assertably unnecessary for divine purposes.

Suppose we assume a conservative range of assertability. Let’s say that the amount of evil in k_n is assertably (un)necessary for divine purposes if and only if k_n is assertably (un)necessary for divine purposes to degree n ($.7 < n \leq 1$). The degree-theoretic semantics of vagueness includes a truth-functional (or quasi-truth-functional) system for the classical connectives including \sim and $\text{pl} = 1 - \text{pl}$. So the amount of evil in k_n is not assertably (un)necessary for divine purposes if and only if k_n is assertably (un)necessary for divine purposes to degree n ($0 \leq n \leq .7$). There is therefore a range in the amounts of evil that is neither assertably necessary for divine purposes nor assertably unnecessary for divine purposes. Call the degree-theoretic interpretation of premise (2), *No Assertable Minimum*.

- 2e. There is no amount of evil k_n , ($k \geq k_n > 0$) in S such that for every increment i ($i > 0$), k_n is assertably unnecessary for divine purposes and k_{n-i} is assertably necessary for divine purposes.

Premise (1) and *No Assertable Minimum* are consistent with the degree-theoretic interpretation of premise (5). Premise (5) now states that there is some amount of evil that is assertably necessary for divine purposes.

But does the degree-theoretic interpretation of the *No Minimum* argument present a problem for the standard position on evil? Van Inwagen suggests that the actual amount of evil in k is assertably unnecessary. But the most that we can derive from the *No Minimum* argument is that a perfect being may allow some instances of evil that are *not assertably* unnecessary.

Perhaps a perfectly good being would not permit any evil that is even so much as nonassertably unnecessary for divine purposes. But the interpretation of the standard position most favorable to theism states that a perfect being would not permit any instance of evil that is assertably unnecessary for divine purposes.

- SP2. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if and only if k_n is assertably unnecessary for divine purposes.

We can therefore conclude that a perfect being would not permit the amount of evil we find in the actual world if—as van Inwagen proposes in the *No Minimum* argument—the actual amount of evil is assertably unnecessary for divine purposes.

No Assertable Minimum in (2e) guarantees that there is no discrete transition between the amount of evil that is unnecessary for divine purposes and the amount of evil that is necessary for divine purposes. But this presents no problem for the standard position on evil. The standard position in SP entails that a perfect being would not permit any amount of evil that is assertably unnecessary for divine purposes. And SP2 and (2e) are perfectly consistent.

3.8 ANTI-LUMINOUS EVIL

Consider an amount of evil k_n , ($k \geq k_n > 0$) in S concerning which we are confident that any greater amount of evil is unnecessary for divine purposes. Indeed, we can be fairly confident that the actual amount of evil k is such that any greater amount of evil is unnecessary for divine purposes. Suppose further that we *know* that k is such that any greater amount of evil is unnecessary for divine purposes. Can we reach the conclusion that, for any amount of evil k_n , ($k \geq k_n > 0$), if we know that k_n is such that any greater amount of evil is unnecessary for divine purposes then, for some i ($i > 0$), we know that k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes? Consider an epistemicist version the *No Minimum Thesis*.¹⁸

- 2f. For any amount of evil k_n , ($k \geq k_n > 0$) in S if we *know that* k_n is such that any greater amount of evil is unnecessary for divine purposes, then or some i ($i > 0$), we know that k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes.

Since we know that the actual amount of evil is such that any greater amount of evil is unnecessary for divine purposes, we also *reliably believe* that the actual amount of evil is such that any greater amount of evil is unnecessary for divine purposes. But if we reliably believe that k_n is such

that any greater evil is unnecessary for divine purposes, then for some increment i ($i > 0$), k_{n-i} such that any greater evil is unnecessary for divine purposes. There is, for some i ($i > 0$), no noticeable difference between the amount of evil k_n and the amount of evil k_{n-i} . So we simply cannot be confident that k_n is such that any greater amount of evil is unnecessary for divine purposes and not be confident that k_{n-i} is such that any greater evil is unnecessary for divine purposes. Reliability in this context depends on condition (R).

- R. For any amount of evil k_n , ($k \geq k_n > 0$) in S if we know that k_n is such that any greater amount of evil is unnecessary for divine purposes, then for some i ($i > 0$), k_{n-i} is such that any greater amount of evil is unnecessary for divine purposes.

But suppose it is true that for any amount of evil k_n , ($k \geq k_n > 0$) in S if k_n is such that any greater amount of evil is unnecessary for divine purposes, then we *know* that k_n is such that any greater amount of evil is unnecessary for divine purposes. The supposition here is that unnecessary evil is *luminous*.

- L. For any amount of evil k_n , ($k \geq k_n > 0$) in S if k_n is such that any greater amount of evil is unnecessary for divine purposes, then we know k_n is such that any greater amount of evil is unnecessary for divine purposes.

The reliability condition and the luminosity condition together entail the *No Minimum Thesis* in (2f). But it is evident that (L) is false.

According to epistemicist theories of vagueness, every amount of evil is either necessary for divine purposes or unnecessary for divine purposes. The phenomenon of vagueness is simply a reflection of our ignorance of the precise border between amounts of evil that are necessary for divine purposes and amounts that are unnecessary for divine purposes. There are certainly amounts of evil k_n such that informed and competent language users are not prepared to assert that k_n is unnecessary for divine purposes and also not prepared to assert that k_n is not unnecessary for divine purposes. These are amounts of evil that are too close to the margins of unnecessary evil for us—or for anyone whose judgment in these matters is similarly limited—to reliably believe they are unnecessary for divine purposes. So there are certainly amounts of evil k_n in S that are such that any greater amount of evil is unnecessary for divine purposes and also such that we *do not know* that any greater amount of evil is unnecessary for divine purposes. Unnecessary evil is not luminous.

Restricted to limited agents—agents that are not omniperceptive and not omniscient—we have the epistemicist interpretation of the *No Minimum Thesis* in (2g).

- 2g. There is no amount of evil k_n , ($k \geq k_n > 0$) in S such that for every increment i ($i > 0$) k_n is *reliably believed* unnecessary for divine purposes and k_{n-i} is reliably believed necessary for divine purposes.

(2g) is true and it is consistent with there being an amount of evil k_n such that k_n is the least amount of evil such that any greater evil is unnecessary for divine purposes. The interpretation of the standard position most favorable to theism states that a perfect being would not permit any instance of evil that is reliably believed unnecessary for divine purposes.

- SP3. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if k_n is reliably believed to be unnecessary for divine purposes.

But the most that we can conclude from the epistemicist interpretation of the *No Minimum* argument is that a perfect being may not allow any instances of evil that are reliably believed to be unnecessary for divine purposes. Of course we cannot conclude that a perfect being may allow instances of evil that we do not reliably believe are unnecessary for divine purposes, since such instances of evil may in fact be unnecessary for divine purposes.

We can therefore conclude that a perfect being would not permit the amount of evil we find in the actual world if—as van Inwagen proposes in the *No Minimum* argument—the actual amount of evil is reliably believed to be unnecessary for divine purposes.

3.9 SUPERVALUATION AND HIGHER-ORDER VAGUENESS

There is no amount of evil k_n such that, on every admissible precisification, k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes. There is therefore no precise transition between evil that is unnecessary for divine purposes and evil that is necessary for divine purposes. But this presents no problem for the standard position on evil. The standard position holds that a perfect being would not permit k_n just in case k_n is unnecessary for divine purposes on every admissible precisification.

But suppose there is also a vague border between the amount of evil that is unnecessary on every precisification and the amount of evil that is not unnecessary on every precisification. So what counts as a set of admissible precisifications is itself a matter of semantic indecision. At some point in the sequence between k and 0 there is some amount of evil k_n such that, on every precisification in some set of admissible precisifications, k_n is unnecessary for divine purposes. It is therefore *definite* that k_n is unnecessary for divine purposes. But on some precisifications in another set of admissible precisifications k_n is *not* unnecessary for divine purposes. It is therefore *not definite* that it is *definite* that k_n is unnecessary for divine purposes. The predicate “is necessary for divine purposes” is second-order vague.

If it is indefinite whether it is definite that k_n is unnecessary, then it is indefinite whether k_n is unnecessary for divine purposes on every admissible precisification. k_n is on the border between the amount of evil that is definitely unnecessary for divine purposes and the amount of evil that is indefinitely unnecessary for divine purposes. Figure 3.3 depicts this situation.

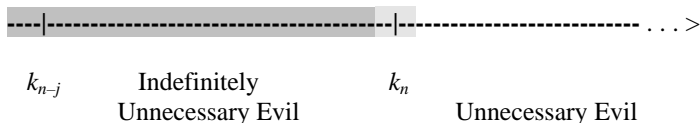


Figure 3.3

It is second-order vague whether the amount of evil in k_n is unnecessary for divine purposes. It is first-order vague whether the amount of evil in k_{n-j} is unnecessary for divine purposes. But the amount of evil in k_n and k_{n-j} are *both on the border* of unnecessary evil. So the fact that it is definite that k_n is unnecessary for divine purposes *relative to some set of admissible precisifications* should not entail that a perfect being is prohibited from permitting the amount of evil in k_n . The amount of evil in k_n might nonetheless be on the border of unnecessary evil.¹⁹ It might be second-order or third-order vague whether the amount of evil in k_n is unnecessary for divine purposes.

Let's suppose it is *superdefinite* that k_n is unnecessary for divine purposes just in case the proposition is definite at every higher order of vagueness. If it is not superdefinite that k_n is unnecessary for divine purposes, then for some precisification at some higher order of vagueness, k_n is not unnecessary for divine purposes. Therefore the amount of evil in k_n is on the borderline of evil that is unnecessary for divine purposes. We therefore arrive at the conclusion that the standard position on evil prohibits a perfect being from permitting the evil in k_n if and only if it is superdefinite that k_n is unnecessary for divine purposes. But that is just to say that the standard position prohibits a perfect being from permitting k_n if and only if k_n is unnecessary for divine purposes and k_n is not on the borderline of evil that is unnecessary for divine purposes. If the predicate "is unnecessary for divine purposes" is higher-order vague, the principle SP4 specifies the conditions under which a perfect being would not permit evil. And these are again conditions most favorable to van Inwagen's position.

- SP4. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if and only if it is superdefinite that k_n is unnecessary for divine purposes.

The standard position in SP4 does not entail that there is a discrete transition between the amount of evil that a perfect being would permit and the amount

of evil a perfect being would not permit. The thesis in (2h) guarantees that the transition between impermissible evil and permissible evil is not discrete.

- 2h. There is no amount of evil k_n , ($k \geq k_n > 0$) in S such that for every increment i ($i > 0$) it is superdefinite that k_n is unnecessary for divine purposes and superdefinite that k_{n-i} is not necessary for divine purposes.

(2h) reformulates the *Vague Minimum Thesis*. According to (2h), the transition is vague between the amount of evil that is unnecessary for divine purposes and the amount of evil that is necessary for divine purposes. But this presents no problem for the standard position on evil. The standard position in SP4 entails that a perfect being would not permit any amount of evil that is superdefinitely unnecessary for divine purposes. And SP4 and (2h) are perfectly consistent.

3.10 OMNISCIENCE AND VAGUENESS

Supervaluationists urge that there are no hidden boundaries for vague predicates that are accessible only to omniscient beings. It is not true, for instance, that God knows the precise boundary between every possible instance of being bald and not being bald. And it is not true that God knows the precise boundary between the amount of evil necessary for divine purposes and the amount of evil unnecessary for divine purposes. According to the supervaluationists, this is because there is no precise boundary to be known. Instead, supervaluationists maintain that vagueness is a matter of semantic indecision. And since there are no sharp boundaries for vague predicates at any level of vagueness, semantic indecision must continue upward through our metalanguage and so on.

Supervaluationism concludes that we replace the *No Minimum Thesis* with the *Vague Minimum Thesis*. According to the *Vague Minimum Thesis* there are borderline cases between amounts of evil that are unnecessary for divine purposes and amounts of evil that are necessary for divine purposes. So in section (4) we suggested that the standard position on evil is better formulated as requiring that a perfect being not permit any amount of evil k_n that is *definitely* unnecessary. The amount of evil k_n is definitely unnecessary for divine purposes just in case it is unnecessary on every admissible precisification of “unnecessary for divine purposes.”

- SP1. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if and only if, on every admissible precisification, k_n is unnecessary for divine purposes.

According to SP1, a perfect being cannot permit an amount of evil that is definitely unnecessary for divine purposes. Let's suppose that k_n is definitely

unnecessary for divine purposes. Our central question is whether an omniscient being would *know* that k_n is definitely unnecessary for divine purposes. It does seem reasonable to propose that an omniscient being would know (at least) every proposition that is definitely true. Consider then the characterization of omniscience in O_1 .²⁰

$$O_1. (\forall x)(x \text{ is omniscient} \equiv (\forall p)(x \text{ knows } p \equiv x \text{ believes } p) \ \& \ (x \text{ believes } p \equiv \text{Def } p)))$$

According to O_1 , a being is omniscient if and only if it knows all and only those propositions that are definitely true. So if there are propositions p that are indefinitely true, then no omniscient being knows that p . On any view of omniscience according to which God knows every true (definite or indefinite) proposition, this consequence is unwelcome.²¹

Suppose that supervaluationists maintain that there is simply no difference between truth and definite truth. Then of course omniscient beings could not know any indefinite truths since there are no indefinite truths. If p is an “indefinite truth,” then p is by definition on the border between being definitely true and being definitely false. And not even an omniscient being could discover that there is no admissible precisification under which p is not true. So omniscient beings would know the indefinite truth p only if omniscient beings would favor admissible precisifications under which p is true. But there simply is no reason to favor admissible precisifications under which p is true over precisifications under which p is false.

There is a more serious problem for the characterization in O_1 . It is quite reasonable to believe that the knowledge of omniscient beings is closed under the S4 axiom. And so we should expect O_2 to be true for all omniscient beings.

$$O_2. (\forall x)(x \text{ is omniscient} \equiv (\forall p)(x \text{ knows } p \equiv x \text{ knows that } x \text{ knows } p))$$

According to O_2 , an omniscient being knows everything that he knows and so on upward. But if O_2 governs the knowledge of every omniscient being, then the characterization in O_1 cannot be true. Omniscient beings cannot know every proposition that is definitely true.

Suppose p is definitely true or true under every admissible precisification. It follows from O_1 that every omniscient being knows that p is true. But then from O_2 it follows that every omniscient being knows that he knows that p is true. And from O_1 again we derive the conclusion that it is definite that it is definite that p is true. But this conclusion might well be false. Not every proposition that is definitely true is *definitely* definitely true. But then omniscient beings cannot know every proposition that is definitely true.

If omniscient beings do not know every proposition that is definitely true, then we are forced to reject SP1. It is not in general true that a perfect being would not permit an amount of evil k_n that is definitely unnecessary

for divine purposes. The inference is straightforward. If O_1 is false, then a perfect being *might not know* that k_n is definitely unnecessary for divine purposes. But if he does not know that k_n is definitely unnecessary for divine purposes, then of course he might permit k_n . The principle in SP1 is therefore false.

Certainly supervaluationists have the option to reject the S4 axiom in O_2 . But it follows from the rejection of O_2 that omniscient beings do not know everything that they know. And that is an especially unwelcome conclusion. Certainly considerations of antiluminosity and safety urge that less-than-omniprceptive and less-than-omniscient beings cannot in general know what they know. But such considerations urge nothing against omniscient and omniprceptive beings. The only remaining alternative is to reject the characterization in O_1 .

As we have noted, O_1 is false only if perfect beings do not know every proposition that is definitely true. And so we are forced to reject the principle in SP1. These conclusions are less serious than they appear. The principle SP1 was not intended to govern higher-order vagueness for the predicate "is unnecessary for divine purposes." The principle was intended to govern first-order vagueness for that predicate. But certainly supervaluationists are primarily concerned about the general problem of vagueness for that predicate.

Should we expect every omniscient being to know every definitely true proposition? It seems perfectly reasonable to hold that omniscient beings might fail to know indefinitely true propositions. These propositions are not true relative to every admissible precisification of their vague terms. Supervaluationists might urge that it is at least as reasonable to hold that omniscient beings do not know indefinitely definite propositions. These propositions are not definitely true relative to every admissible way to resolve the vagueness of "admissible precisification." Suppose, for instance, that it is indefinite whether k_n is unnecessary for divine purposes. k_n is therefore on the border of evil that is unnecessary for divine purposes. But suppose it is indefinite whether it is definite that k_n is unnecessary for divine purposes. k_n is *again* on a border of evil that is unnecessary for divine purposes. On this view omniscient beings do not know that k_n is unnecessary for divine purposes unless k_n is not on some border of the amount of evil that is unnecessary for divine purposes. So this position gives consistent treatment to every proposition that is on *some border* of those unnecessary for divine purposes.

Supervaluationists can resolve these problems and retain a simple characterization of omniscience. According to SP5, a proposition p is superdefinitely true just in case p is definitely true at every (higher) order of vagueness. Suppose p is the proposition $\text{Indef}_2 A$, or the proposition that it is indefinite that A . In that case p is superdefinitely true if and only if $\text{Def}_n \text{Indef}_2 A$ for every order n ($n \geq 3$). So p is superdefinitely true if and only if " $\text{Indef}_2 A$ " is definitely true at every order of vagueness greater than

or equal to the third order. In short, A is not on any border of being second-order indefinite A. But suppose p is the proposition A. In that case p is superdefinitely true if and only if $\text{Def}_n A$ for every order n ($n > 0$).²² Supervaluationists should urge that omniscient beings know every proposition that is superdefinitely true. Now suppose we restrict the propositional quantifier to all and only those propositions that are superdefinitely true. An omniscient being knows every proposition characterized in the simpler O_3 .

$$O_3. (\forall x)(x \text{ is omniscient} \equiv (\forall p)(x \text{ knows } p \equiv p))$$

O_3 states that for every proposition p, every omniscient being knows p. O_3 is perfectly consistent with O_2 , since the proposition that x knows that x knows that p does not entail that it is definite that it is definite that p. It follows from O_2 that an omniscient being knows p only if he knows that he knows p. And that is a consequence of omniscience we should expect.

Now suppose p is the proposition that it is indefinite that k_n is unnecessary for divine purposes. If it is superdefinite that p then an omniscient being knows that it is indefinite that k_n is unnecessary for divine purposes. So according to O_3 it is perfectly possible that an omniscient being knows that it is indefinite that A and that he knows that it's indefinitely indefinite that B and so on.

We noted previously that a better formulation of the standard position on evil prohibits a perfect being from allowing the evil in k_n if and only if it is superdefinite that k_n is unnecessary for divine purposes. The principle SP4 specifies the conditions most favorable to theism under which a perfect being would not permit evil.

SP4. A perfect being would not permit an amount of evil k_n ($k \geq k_n > 0$) in S if and only if it is superdefinite that k_n is unnecessary for divine purposes.

Suppose that it's superdefinitely true that k_n is unnecessary for divine purposes. According to O_3 , the proposition that k_n is unnecessary for divine purposes is among the propositions that every omniscient being knows. So happily O_2 and O_3 are consistent with the standard position in SP4. A perfect being would know that k_n is unnecessary for divine purposes according to O_3 and a perfect being would not permit k_n according to SP4.

3.11 CONCLUSIONS

According to van Inwagen, the standard position on evil is true only if there is a least amount of evil such that any greater evil is unnecessary for divine purposes. But that position is mistaken. The *Vague Minimum Thesis* in (2b) guarantees that there is no discrete transition between the amount of

evil that is unnecessary for divine purposes and the amount of evil that is necessary for divine purposes. And the thesis in (2b) is perfectly compatible with the standard position on evil in (SP1).

Certainly there are other interpretations of the *Vague Minimum Thesis* forthcoming, for instance, from degree-theoretic accounts of vagueness and epistemicist accounts of vagueness. But (2e) and (2g) do not advance van Inwagen's *No Minimum* argument and as it happens neither do (2c) and (2d).

It is perhaps true that the amount of evil necessary for divine purposes is second-order or third-order vague. If the predicate "is necessary for divine purposes" is a higher-order vague predicate, then the standard position prohibits a perfect being from permitting the amount of evil k_n if and only if it is superdefinite that k_n is unnecessary for divine purposes. If it is *not* superdefinite that k_n is unnecessary for divine purposes, then for some admissible precisification at some order of vagueness k_n is not unnecessary for divine purposes. It follows that k_n is on the borderline of evil that is unnecessary for divine purposes. And a perfect being need not prevent evil that is on the borderline of unnecessary evils. But higher-order vagueness presents no problem for the standard position on evil. The reformulated *Vague Minimum Thesis* in (2h) guarantees that there is no discrete transition between the amount of evil that is unnecessary for divine purposes and the amount of evil that is necessary for divine purposes. And the thesis in (2h) is perfectly consistent with the standard position in SP4.

Omniscient beings know every proposition that is superdefinitely true. If it is superdefinitely true that k_n is unnecessary for divine purposes, then God knows that he cannot allow the amount of evil in k_n . Omniscient beings do not know any proposition that is not superdefinitely true. If it is not superdefinitely true that k_n is unnecessary for divine purposes, then the amount of evil in k_n is on the *border* of the amount of evil that is clearly unnecessary for divine purposes. If k_n is clearly on the border, then God knows that k_n is on the border of evil that is unnecessary for divine purposes. But he does not also know that k_n is unnecessary for divine purposes.

The remaining question is the exact amount of actual evil in k . Suppose, as van Inwagen seems to suggest, that it is superdefinite that the amount of evil in k is unnecessary for divine purposes. The standard position then prohibits a perfect being from permitting k and the amount of evil we find in the actual world presents an important obstacle to theistic belief. But suppose that for some precisification at some order of vagueness the actual amount of evil in k is not unnecessary for divine purposes. It then follows that k falls somewhere on the border of unnecessary evil and this presents no problem at all for theism.

4 The Problem of No Maximum Evil

4.1 INTRODUCTION

According to Warren Quinn, a sequence of rational choices can lead a rational agent to self-torture. It is possible, for instance, to increase temperature or administer electric current or increase atmospheric pressure in some positive increment i such that a rational agent is indifferent between each pairwise option k_{ni} and $k_{(n+1)i}$ and strongly prefers the initial option to the last option in the sequence. If we let $!>$ symbolize strong preference and \approx symbolize indifference, there is a possible sequence S from k_0 to k such that for some increment i ($i > 0$), $S = k_0 \approx k_i, k_i \approx k_{2i}, k_{2i} \approx k_{3i}, \dots, k_{ni} \approx k$ & $k_0 !> k$.

According to S , an agent might make a series of *rational* exchanges k_0 for k_i , k_i for k_{2i} , k_{2i} for k_{3i} , . . . , and k_{ni} for k and find himself much worse off than he was prior to his initial choice. Quinn refers to this as the puzzle of the self-torturer. Since standard theories of rational choice seem to permit exchanges up to k , Quinn urges that those theories must be mistaken.

Quinn's puzzle of the self-torturer presents a serious problem for the standard position on evil. If there is a possible sequence S from k_0 to k , such that for some increment i , it is rational to exchange k_0 for k_i , . . . , k_{2i} for k_{3i} , and k_{ni} for k , then it is evident that the standard position on evil is radically mistaken. The intuitive formulation of the standard position on evil states the following. "An omniscient, wholly good being would prevent the occurrence of *any intense evil it could*, unless it could not do so without thereby losing some greater good or permitting some evil equally bad or worse."¹ But according to the puzzle of the self-torturer, an omniscient, wholly good being would have *no reason* to prevent any exchange in the sequence from k_0 to k despite the fact that the excruciating amount of pain in k could have been prevented without thereby losing a greater good or permitting some evil equally bad or worse. The problem generalizes from self-torturers to other-torturers. Perfectly decent other-torturers concerned not to harm anyone are permitted to cause excruciating amounts of pain in others.

In general, the problem illustrated in the puzzle of the self-torturer is that there is no maximum amount of evil k_n in S such that an omniscient,

omnipotent, wholly good being would prevent any amount of evil greater than k_n . Call that the *Problem of No Maximum Evil*.

The *Problem of No Maximum Evil* differs from the problem of *No Minimum* evil. According to van Inwagen, since there is no least amount of evil necessary for divine purposes, a perfect being may allow more than the minimum amount of evil necessary for divine purposes. The *Problem of No Maximum Evil* entails that, for any amount of evil k_{ni} , a perfect being can allow an *even greater amount* of evil $k_{(n+1)i}$. There is therefore no maximum amount of pointless evil that a perfect being is permitted to allow.

Frank Arntzenius and David McCarthy have recently proposed a solution to the puzzle of the self-torturer. According to Arntzenius and McCarthy, it is necessary that, for any positive increment i , a rational agent strongly prefers k_0 to k only if there is some k_{ni} in sequence S such that the agent prefers k_{ni} to $k_{(n+1)i}$. So no rational agent can be indifferent between *every* pairwise option in that series. Indeed, according to Arntzenius and McCarthy, there is for each agent some *maximum* setting k_{ni} less than k such that k_{ni} is his unique rational choice in S . There is therefore for each rational agent some k_{ni} that is the maximum setting in the sequence such that the agent prefers k_{ni} to $k_{(n+1)i}$. Call that the *Maximum Thesis*.

In (4.2) I consider Arntzenius and McCarthy's argument that the situation described in the paradox of the self-torturer is impossible. According to Arntzenius and McCarthy, it follows from the *Maximum Thesis* that there is for each rational agent a unique solution to Quinn's paradox. The solution to Quinn's paradox entails that there is no *Problem of No Maximum Evil*.

For any increment i there is guaranteed to be some pairwise exchange such that k_{ni} is painless and $k_{(n+1)i}$ is painful, and rational agents cannot exchange the painless setting k_{ni} for the painful setting $k_{(n+1)i}$.

In (4.3) I provide a model in supervaluation semantics for the paradox of the self-torturer. I argue that the situation described in Quinn's paradox is in fact possible. Indeed, supervaluation semantics makes clear that Arntzenius and McCarthy's *Maximum Thesis* is false. The thesis is based on assumptions regarding penumbral connections between the predicates "is painful" and "is more painful than" that are simply mistaken. The *Maximum Thesis* is mistaken even under the (false) assumption that "is painful" is a higher-order precise predicate. In (4.4) I show that for some increment i and every n in S there is some admissible precisification on which k_{ni} is not painful only if $k_{(n+1)i}$ is not painful. Call that the *Vague Maximum Thesis*. It follows from the *Vague Maximum Thesis* that there are several solutions to the *Problem of No Maximum Evil*. On the most liberal solution a perfect being cannot permit any agent to experience any setting k_{ni} in S such that k_{ni} is superdefinitely painful.

In (4.5) I consider Tim Williamson's argument that his *Reliability Principle* together with other uncontroversial assumptions entails that rational agents are not guaranteed epistemic access to their condition at each setting in the paradox of the self-torturer. In section (4.6) I argue that Williamson's

Reliability Principle is mistaken. It is false that there is some increment i such that for every n a rational agent knows that he is in pain at $k_{(n+1)i}$ only if he is in pain at k_{ni} . I conclude that rational agents are in a position to solve the paradox of the self-torturer. I offer some concluding comments in section (4.7).

4.2 IS QUINN'S SELF-TORTURER POSSIBLE?

According to Frank Arntzenius and David McCarthy, the situation described in the puzzle of the self-torturer is impossible. There is no sequence of rational choices from k_0 to k in which, for some increment i and for all n an agent is indifferent between k_{ni} and $k_{(n+1)i}$, and the agent strongly prefers k_0 to k . Quinn envisages the following situation.

Suppose there is a medical device that enables doctors to apply an electric current to the body in *increments so tiny that the patient cannot feel them* . . . Suppose someone (call him the self-torturer) agrees to have the device . . . attached to him in return for the following conditions: The device is initially set at 0. At the start of each week he is allowed a period of free experimentation in which he may try out and compare different settings . . . At any other time, he has only two options—to stay put or to advance the dial one setting. But he may advance only one step each week, and he may *never* retreat.²

According to Quinn, the self-torturer cannot feel any difference in comfort between any pairwise settings on the medical device. But he strongly prefers the initial setting k_0 to highest setting k .

. . . [T]he self-torturer cannot feel any difference in comfort between adjacent settings. . . . The trouble is that there are noticeable differences in comfort between settings that are sufficiently far apart. Indeed, if he keeps advancing, he can see that he will eventually reach settings that will be so painful that he would gladly relinquish his fortune and return to 0.³

There is, according to Quinn, some increment on the device such that a rational agent can be indifferent between all pairwise options and yet strongly prefer the initial setting to the final setting on the device. Quinn's thesis is in T.

T. There is some increment $i(i > 0)$ such that for all k_n ($k_0 \leq k_n \leq k$) in S , a rational agent is indifferent between k_{ni} and $k_{(n+1)i}$, and the rational agent strongly prefers k_0 to k .⁴

According to Quinn's thesis in T, there is some positive increment such that for each setting in the sequence k_{ni} a rational agent is indifferent between

k_{n_i} and $k_{(n+1)_i}$. It is false just in case, for every positive increment i , there is some pairwise option in the sequence such that a rational agent is not indifferent between k_{n_i} and $k_{(n+1)_i}$.

Quinn notes that if the sequence described in S is possible, then there is some monetary increment ε such that a rational agent is not indifferent between pairwise options. For some increment ε a rational agent prefers $(k_i + \varepsilon)$ to k_0 , $(k_{2i} + \varepsilon)$ to k_p , . . . , $(k + \varepsilon)$ to k_{n_i} and also prefers k_0 to $k_{(n+1)\varepsilon}$. Assuming that increments in pain are linear with increments in electrical current, any monetary payoff will make $k_{(n+1)_i}$ preferable to k_{n_i} for any n . So if a rational agent is prepared to pay \$1,000.00 to exchange k for k_0 , then the monetary increments should be about $\varepsilon = \$1,000/(n + 1)$. In the simpler sequence a rational agent is indifferent between pairwise options and therefore should be willing to exchange k_{n_i} for $k_{(n+1)_i}$ for all n in the sequence. And of course the stipulation is that the sequence of rational choices will leave the agent considerably worse off than he was. So the puzzle of the self-torturer does not interestingly differ with the complication of monetary payoffs.

Quinn urges that the preference relation and the indifference relation among pairwise options in the sequence are not the familiar “better than” relation and “equal to” relation, respectively. The “better than” relation is transitive and the pairwise preference relation in S is intransitive. Similarly, the “equal to” relation is transitive and the pairwise indifference relation in S is not. So any model for the puzzle of the self-torturer should ensure that the relation among pairwise options is intransitive and the relation among wider options in the sequence is transitive.

But according to Arntzenius and McCarthy, there is no model for the puzzle of the self-torturer. It is not possible that a rational agent is indifferent between pairwise options in S and strongly prefers k_0 to k . Arntzenius and McCarthy provide this version of the puzzle.

Before Harry, [the rational agent], is allowed to start increasing the settings from 0, the psychologists do the following experiment. They administer very long sequences of electric shocks on him with the device. They randomize the setting in between each shock, but they don't tell Harry what the setting is . . . If a shock at some time appears as painful to him as some other shock at some other time [Harry] must describe that pain using the same words and if a shock appears either more or less painful than some other one, he must describe them differently.⁵

Now suppose that Harry does exactly as instructed. If the painful experience at k_{n_i} feels exactly like the painful experience at $k_{(n+1)_i}$ then Harry describes k_{n_i} as mildly painful if and only if he describes $k_{(n+1)_i}$ as mildly painful. But of course Harry should also have recourse to vague language in his descriptions. And indeed, Arntzenius and McCarthy agree that Harry can use any vocabulary he would like in describing his experience of pain, precise, qualitative,

or vague. Further, there is no reason why Harry must choose English or any other natural language in describing those experiences.

Suppose, instead of providing a description in natural language, Harry agrees to assign a shade of some color to each setting k_{ni} in the sequence. At k_0 Harry assigns a light shade of red. As the sequence proceeds upward to k_{200i} , Harry assigns darker shades of red. If the sequence terminates at k_{1000i} , then Harry assigns his darkest shade of red to k_{1000i} . As Harry's experience becomes more painful, the color assigned becomes a darker shade of red. Now suppose that Harry makes no mistakes in describing or depicting his experience. For any two experiences of pain that are exactly alike to him, he assigns the very same shade of red.

According to Arntzenius and McCarthy, the error in the puzzle of the self-torturer becomes clear if we assume that Harry makes no mistakes in describing his experiences.

For it would immediately follow that some, and possibly all, adjacent settings of the device in fact are discernable by Harry in terms of the pain he feels at those settings. For his descriptions are the same if the settings are the same, and one can attach to each setting a unique description. Since setting k_0 is not at all painful to Harry and setting k_{1000i} is very painful, the descriptions must change and the pain felt be *described as worse* at least once as the setting goes from k_0 to k_{ni} to k . Thus for some n setting $k_{(n+1)i}$ is noticeably more painful than setting k_{ni} .⁶

Since one assumption in the puzzle of the self-torturer is that a rational agent is indifferent between all pairwise options in the sequence, Arntzenius and McCarthy conclude that Quinn's puzzle is not coherent. It is not possible that any sequence of settings satisfies Quinn's thesis T.

According to Arntzenius and McCarthy, an accurate description of the pain associated with each setting must show the first pairwise option over which Harry is not indifferent. More precisely there must be some setting in the sequence k_{ni} such that Harry prefers k_{ni} to $k_{(n+1)i}$. Since we have assumed that Harry is rational, he will refuse to exchange k_{ni} for $k_{(n+1)i}$, and he certainly will not exchange up to k . Indeed, Arntzenius and McCarthy urge that there is some exact setting below k at which it is rational for each agent to stop. "Given all of the facts about Harry [including his subjective valuation of different levels of pain] standard theories of rationality determine *exactly where he should stop*, and our discussion shows why that is before the maximum."⁷

There is therefore for each rational agent some *maximum* amount of pain k_{ni} less than k that is the rational choice in S for that agent. More precisely, there is for each rational agent some k_{ni} that is the least amount of pain in the sequence such that the agent prefers k_{ni} to the increment $k_{(n+1)i}$. That is the *Maximum Thesis*. And according to Arntzenius and McCarthy, that solves the puzzle of the self-torturer.

4.3 A MODEL FOR QUINN'S SELF-TORTURER

Instead of providing a description in natural language, Harry agrees to assign shades of red to each setting k_{ni} in the sequence. We have assumed that the type of utterances that Harry offers tracks his condition perfectly. Harry assigns the same shade of red to k_{ni} and $k_{(n+1)i}$ if and only if Harry's experience of pain at k_{ni} and $k_{(n+1)i}$ is exactly the same. If the experience at k_{ni} is not *definitely as much pain as* the experience at $k_{(n+1)i}$, then the shade of red at k_{ni} is not definitely the same shade as the shade of red at $k_{(n+1)i}$.

According to Arntzenius and McCarthy, since setting k_0 is not at all painful to Harry and setting k_{1000i} is very painful, the shades of red must noticeably change at some particular point in the sequence, and the pain felt *be described as worse* at least once as the setting goes from k_0 to k_{ni} , . . . , $k_{(n+1)i}$ to k_{ni} . But then, of course, at some setting k_{ni} the shade of red assigned to k_{ni} must be definitely a different shade from the shade of red assigned to $k_{(n+1)i}$. And so for some n setting $k_{(n+1)i}$ is definitely more painful than setting k_{ni} .

But this conclusion is mistaken. Harry might assign to k_0 a shade that is definitely red and assign k_{ni} a shade that is definitely not red. And for every n in the sequence S , Harry might assign a shade to $k_{(n+1)i}$ that is not definitely different from the shade he assigns to k_{ni} . But then, contrary to Arntzenius and McCarthy, there is no n such that the setting $k_{(n+1)i}$ is definitely more painful than the setting k_{ni} .

Supervaluation semantics provides a model for the puzzle of the self-torturer. The predicates "is painful" and "is more painful than" do not sharply divide their positive and negative extensions. Certainly there is setting k_{ni} in S that is not painful and another setting k_{mi} that is painful. But there are many settings in the sequence that are neither painful nor not painful. And certainly there are settings in the sequence k_{ni} and k_{mi} such that k_{mi} is more painful than setting k_{ni} . But there are also many settings such that k_{mi} is neither more painful than k_{ni} nor not more painful than k_{ni} .

Supervaluation semantics urges that the truth-value of the proposition "the setting k_{mi} is more painful than the setting k_{ni} " can be determined only if we sharpen or precisify the vague predicate "is more painful than." But of course there is no unique and nonarbitrary way to make the predicate "is more painful than" precise. Any semantic decision to sharpen the predicate will make some arbitrary distinction. Supervaluationism therefore makes it *true* that the setting k_{mi} is more painful than the setting k_{ni} if and only if that proposition is true on every admissible precisification of "is more painful than." And supervaluationism makes it *false* that the setting k_{mi} is more painful than k_{ni} if and only if that proposition is false on every admissible precisification of that predicate. Otherwise, the proposition is neither true nor false.

Supervaluation semantics places some important restrictions on admissible precisifications. Propositions that are clearly true (false) prior to precisification must remain true (false) after precisification. The proposition that k is more painful than k_0 is assumed to be clearly true and so it must remain true on every precisification. But it is no doubt false that, for any n , the setting in k_n is more painful than k_n . That proposition must therefore remain false on every precisification.

Other restrictions concern important penumbral connections between the predicates ‘is painful’ and ‘is more painful than.’ For instance, the penumbral connections in P1 and P2 are in general true.

- P1. For all n, m and for any i, k_{mi} is painful and k_{ni} is not painful only if k_{mi} is more painful than k_{ni} .
- P2. For all n, m and for any i, k_{mi} and k_{ni} are both painless only if k_{mi} is not more painful than k_{ni} .

So there are no admissible precisifications of these predicates on which the antecedents of these conditionals are true and the consequents are false.

Reconsider the *Maximum Thesis*. According to Arntzenius and McCarthy, k_0 is strongly preferred to k for all rational agents only if for each agent there is some setting k_{ni} in the sequence such that k_{ni} is preferred to $k_{(n+1)i}$. Of course, Arntzenius and McCarthy are right if they are claiming that, for any increment i , there is some k_{ni} in S such that k_{ni} is *not definitely painful* and $k_{(n+1)i}$ is *definitely painful*. For suppose there were some increment i such that for all n in S , if k_{ni} is not definitely painful then $k_{(n+1)i}$ is also not definitely painful. Since k_0 is not definitely painful we quickly arrive at the false conclusion that k is not definitely painful. Therefore for every i , there is some k_{ni} in S such that k_{ni} is not definitely painful and $k_{(n+1)i}$ is definitely painful.

But it is a mistake to conclude that if $k_{(n+1)i}$ is definitely painful and k_{ni} is not definitely painful, then $k_{(n+1)i}$ is *definitely more painful than* k_{ni} . Consider, for instance, figure 4.1 in which both predicates are depicted.

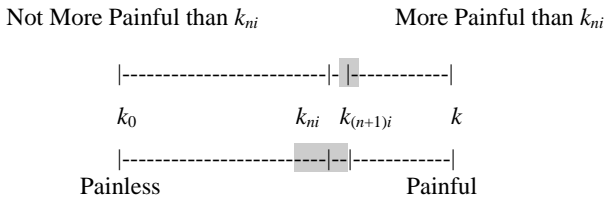


Figure 4.1

In figure 4.1 we assume that for some increment i , there is some n such that $k_{(n+1)i}$ is definitely painful and k_{ni} is not definitely painful. But figure 4.1 also

displays the assumption that $k_{(n+1)i}$ is not definitely more painful than k_{ni} . The assumptions in figure 4.1 are consistent, since the penumbral connection expressed in P3 is false.

- P3. For all n m and any i , k_{mi} is definitely painful and k_{ni} is not definitely painful *only if* k_{mi} is definitely more painful than k_{ni} .

So under the assumption that $k_{(n+1)i}$ is definitely painful and k_{ni} is not definitely painful, it might also be true that $k_{(n+1)i}$ is not definitely more painful than k_{ni} . The *Maximum Thesis* is therefore false.

The *Maximum Thesis* assumes that, for any increment i , if k_{ni} is not definitely painful and $k_{(n+1)i}$ is definitely painful, then the transition from setting k_{ni} to setting $k_{(n+1)i}$ is discrete and discernable. And if vagueness were only a first-order phenomenon, then the move from k_{ni} to $k_{(n+1)i}$ would indeed be discrete. It would then be true that k_{ni} is *definitely not definitely* painful and $k_{(n+1)i}$ is *definitely definitely* painful. The border between the painful and the indefinitely painful would be precise. And it might reasonably be urged that the penumbral connection expressed in P4 is true.

- P4. For all n , m and for any i , k_{ni} is definitely not definitely painful and k_{mi} is definitely definitely painful *only if* k_{mi} is definitely more painful than k_{ni} .

Indeed, for any order of vagueness v , if there is no vagueness at the $v + 1^{\text{th}}$ order, then for all n and any i , k_{ni} is definitely definitely $_v$ painful or k_{ni} is definitely not definitely $_v$ painful. There is in brief a discrete transition from k_{ni} to $k_{(n+1)i}$ at the $v + 1^{\text{th}}$ -order in the sequence S .

But suppose that the predicate “is painful” is no more than fourth-order vague. There is certainly some increment i such that for some n , k_{ni} is definitely $_3$ indefinitely painful and $k_{(n+1)i}$ is definitely $_4$ painful. So the exchange of setting k_{ni} for setting $k_{(n+1)i}$ will likely include a definite increase in pain.⁸ But there is also some i and some n such that k_{ni} is indefinitely $_4$ painful and $k_{(n+1)i}$ is indefinitely $_3$ definitely painful. The exchange of setting k_{ni} for setting $k_{(n+1)i}$ will likely not include a definite increase in pain. So even assuming a discrete transition at some higher order does not entail that $k_{(n+1)i}$ will be definitely more painful than k_{ni} .

Of course supervaluationism urges that there are no sharp boundaries for vague predicates at any level of vagueness. So semantic indecision continues upward through our metalanguage and so on. Since there are no sharp boundaries for vague predicates, supervaluationism includes (at least) all finite orders of vagueness for the predicates “is painful” and “is more painful than.” It is therefore false that for every increment i there is some n in S such that $k_{(n+1)i}$ is definitely more painful than k_{ni} . The *Maximum Thesis* is therefore false. It is false that for all i there is for

each rational agent some setting k_{ni} in the sequence such that the agent prefers k_{ni} to $k_{(n+1)i}$.

4.4 THE PROBLEM OF NO MAXIMUM EVIL: A SOLUTION

It is true in the puzzle of the self-torturer that k_0 is strongly preferred to k . But that does not entail that for all i there is some setting k_{ni} in the sequence such that a rational agent prefers k_{ni} to $k_{(n+1)i}$. Supervaluationism makes clear that the thesis in M is false.

- M. For every increment i there is some n in S such that for every admissible precisification k_{ni} is not painful and $k_{(n+1)i}$ is painful.

So there is not some *least* amount of pain k_{ni} in the sequence such that the agent prefers k_{ni} to $k_{(n+1)i}$. The *Maximum Thesis* is therefore false. According to supervaluationism, the puzzle of the self-torturer describes a case in which N is true.

- N. There is some increment i such that for every n in S , $k_{(n+1)i}$ is not more painful than k_{ni} on *some* admissible precisification and k is more painful than k_0 on every admissible precisification.

The *Maximum Thesis* is false but the *Vague Maximum Thesis* is true. The *Vague Maximum Thesis* states that for some increment i there is no discrete transition between settings that are not painful and settings that are painful. Settings in the sequence therefore vaguely approach the maximum.

- V. For some increment i and every n in S there is some admissible precisification on which k_{ni} is not painful only if $k_{(n+1)i}$ is not painful.

The *Vague Maximum Thesis* is perfectly consistent with the fact that for every increment i in the puzzle of the self-torturer there is some n such that for some admissible precisification k_{ni} is not painful and $k_{(n+1)i}$ is painful.

Since for any setting in the sequence there is some admissible precisification on which k_{ni} is not painful only if $k_{(n+1)i}$ is not painful, some rational agents might conclude that it is always permissible to exchange k_{ni} for $k_{(n+1)i}$. But this is a mistake. There is of course some point in the sequence at which that conditional is true because, for every admissible precisification, k_{ni} is painful and $k_{(n+1)i}$ is painful.

The most cautious solution to the puzzle of the self-torturer is that for every finite order of vagueness n , no rational agent is permitted to exchange any setting that is indefinitely _{n} painful for any setting that is indefinitely _{$n-1$} definitely painful. It follows that no rational agent is permitted to exchange a setting that is on outermost border of indefinite pain

for a setting that is on the outermost border of definite pain. But that is a very conservative solution to the *Problem of No Maximum Evil*. A setting on the outermost border of definite pain might not be painful at all. So an omniscient, omnipotent, wholly good being might have no reason to prevent an exchange up to the outermost border of definite pain. Still, there is some precisification of the relevant predicates under which the experience is definitely painful.

There are of course less cautious solutions. For instance, rational agents might not be permitted to exchange any setting that is not definitely painful for any setting that is definitely painful. The less cautious solution permits agents to move from the outermost border of indefinite pain to the outermost border of definite pain. But it prohibits any rational agent from exchanging an indefinitely definite_{*n-1*} painful setting for a definitely_{*n*} painful setting.

But it seems fully uncontroversial that an omniscient, omnipotent, wholly good being would prevent any agent from experiencing any setting k_n in the sequence S that is definitely painful. The corresponding formulation of the standard position on pain is in SPP.

SPP. A perfect being would not permit an agent A to experience setting k_n ($k \geq k_n > 0$) in S if and only if k_n is painful for A on every admissible precisification.

The solution to the *Problem of No Maximum Evil* presented in SPP is not the most cautious available. According to SPP, a perfect being might permit a setting $k_{(n-1)i}$ that is not definitely less painful than k_n as long as $k_{(n-1)i}$ is not painful on every admissible precisification or, equivalently, not definitely painful. Still, the formulation in SPP might be correct. In the situation Quinn describes, the setting k_n is not definitely painful only if k_n is not definitely evil. And a perfect being need not prevent indefinite evils.⁹

An omniscient, omnipotent, wholly good being would not permit any rational agent to experience any setting k_n that is painful on any admissible precisification. But there are interesting and important complications to this solution to the *Problem of No Maximum Evil*. The solution assumes that rational agents in general have epistemic access to their own condition. Suppose rational agents are not in general in a position to know that they are definitely in pain at some settings. In that case it is unclear how an omniscient, omnipotent, and wholly good being would be in a position to know that they are definitely in pain at those settings. It is unclear that an omniscient, omnipotent, wholly good being could possess a keener awareness of my painful mental states than I possess.¹⁰ But according to Tim Williamson, rational agents are not guaranteed epistemic access to their own mental states. And so there is no assurance that an omniscient, omnipotent, and wholly good being could resolve the *Problem of No Maximum Evil*.

4.5 PAIN AND LUMINOSITY

It does seem to be a feature of “being in pain” or “feeling cold” that one is guaranteed epistemic access to the condition that one is in pain or one is cold. But according to Tim Williamson, these conditions are not *luminous*. It is not a distinctive feature of these mental states that we are guaranteed epistemic access to them. We are not in general in a position to know whether we are in a particular mental state—even a core mental state—whenever we are in that mental state.

According to Williamson, a condition C is luminous if and only if L holds.

- L. For every case α , if in α C obtains, then in α one is in a position to know that C obtains.

So the condition of being in pain is luminous if and only if there is no possible situation in which it is true that one is in pain and one is not in a position to know that one is in pain.

The domain of possible situations or cases in L includes (at least) every situation that is psychologically or physically feasible. The relevant set of situations therefore includes both actual and counterfactual situations. The condition of being in pain is luminous only if one is in a position to know that one is in pain in every feasible situation in which one is in pain. And according to Williamson, a subject is in a position to know that he is in pain only if nothing prevents him from coming to know that he is in pain. But a subject that is in a position to know that he is in pain need not in fact know that he is in pain.

According to Williamson, there is good reason to believe that the condition of being in pain is not luminous at all. There are feasible situations or cases in which one is in pain and one is not in a position to know that one is in pain. Indeed, the puzzle of the self-torturer describes a sequence of situations in at least some of which the agent is in pain and is not in a position to know that he is in pain.

In the puzzle of the self-torturer the sequence of settings is $S = k_0, k_i, k_{2i}, \dots, k_{3^p}, \dots, k_{n_i}, k$. There is no doubt that at setting k in the sequence a rational agent *knows* that he is in pain. But if the agent knows that he is in pain at k , then, according to Williamson, the agent must have a reasonable and reliable confidence that he is in pain at k . And we can assume that a rational agent at setting k is quite confident that he is in pain. But then it follows from the description of the puzzle of the self-torturer that a rational agent is almost equally confident that he is in pain at k_{n_i} . Here is Williamson: “So if one does not [feel pain at k_{n_i}] then one’s confidence at k [that one feels pain] is not reliably based, for one’s almost equal confidence on a similar basis [an increment] later [that one feels pain] is mistaken . . . One’s confidence at k was reliably based in the way required for knowledge only if one [feels pain at k_{n_i}].”¹¹

So in the specific sequence described in the puzzle of the self-torturer, principle (I) is true.

- I. For every n and some increment i , a rational agent knows that he is in pain at $k_{(n+1)i}$ only if he is in pain at k_{ni} .

Certainly the increments available on some devices might be too large to be governed by the principle (I). But the principle is not designed to be perfectly general. The principle holds specifically for series that are similar to the puzzle of the self-torturer.

Suppose the condition that one is in pain is luminous. There is then no feasible situation in which it is true that one is in pain and one is not in a position to know that one is in pain. Since we are assuming that the rational agent is actively considering whether he is in pain, it follows that there is no feasible situation in which it is true that the agent is in pain and he does not know that he is in pain. And so L' follows from L.

- L'. For every n in sequence S if a rational agent feels pain at k_{ni} , then the agent knows that he is in pain at k_{ni} .

There is no doubt that at setting k in S the agent *knows* that he is in pain. So it follows from (I) that agent is in pain at k_{ni} in S . And it follows from principle L' that the agent knows that he is in pain at k_{ni} . But then it follows from (I) again that the agent is in pain at $k_{(n-1)i}$. And it follows from principle L' again that the agent knows that he is in pain at $k_{(n-1)i}$. The argument appealing to principles (I) and L' applies to every setting in the sequence and leads to the conclusion that the agent knows he is in pain at k_0 . But of course that conclusion is false.

It follows that principle (I) and principle L' cannot both be true. But according to Williamson, principle (I) follows from the reliability condition on knowledge. But then principle L' is false and the condition that one is in pain is not luminous.

Rejecting principle L' entails that for some n in S the setting k_{ni} is indefinitely painful and the agent does not know that k_{ni} is indefinitely painful. But a rational agent that does not know that k_{ni} is indefinitely painful is not in a position to know that he should not exchange k_{ni} for $k_{(n+1)i}$. It is therefore possible for rational agents to exchange up to a definitely painful setting $k_{(n+1)i}$.

4.6 PRINCIPLE I AND RELIABILITY

According to Williamson, a rational agent knows proposition p only if the agent has a reliable basis for believing p . Here is Williamson: "If one believes p truly in a case α one must avoid false belief in other cases sufficiently similar to α in order to count as reliable enough to know p in α ."¹²

In the puzzle of the self-torturer there is some increment i such that for every n the setting k_{ni} is similar enough to the setting $k_{(n-1)i}$ that a rational agent has a reliable basis for believing he is in pain at k_{ni} only if he has a reliable basis for believing he is in pain at $k_{(n-1)i}$. If the condition of feeling pain is luminous, then a rational agent that knows he is in pain at *any* setting in the sequence knows that he is in pain at *every* setting in the sequence.

Of course we are not perfectly accurate in discriminating among similar mental states. So according to Williamson, the reliability condition requires that sufficiently similar perceptions of our mental states cannot be the basis of sufficiently dissimilar cognitive states. But, contrary to Williamson, beliefs that do not satisfy principle (I) might still have a reliable basis. Recall that at setting k the rational agent *knows that he is definitely in pain*. Since knowledge is factive, it is true at setting k the rational agent is definitely in pain. According to Williamson, that knowledge claim is not reliable unless the corresponding instance of principle (I) is true.

- Ia. A rational agent knows that he is definitely in pain at k only if he is definitely in pain at k_{ni} .

And instantiating the luminosity condition L' we arrive at L'a.

- L'a. If a rational agent definitely feels pain at k_{ni} , then the agent knows that he is definitely in pain at k_{ni} .

And Williamson's antiluminosity argument proceeds to the conclusion that a rational agent knows he is definitely in pain at k_0 . But of course that is false. But it should be clear that this version of Williamson's argument is unsound. The argument depends on the principle in (I) that is pretty clearly false.

- I. For every n and some increment i , a rational agent knows that he is definitely in pain at $k_{(n+1)i}$ only if he is definitely in pain at k_{ni} .

There is some n such that for any increment i the principle (I) is falsified.

- J. For some n and any increment i , a rational agent knows that he is definitely in pain at $k_{(n+1)i}$ and he is not definitely in pain at k_{ni} .

Now a rational agent might not notice any difference between $k_{(n+1)i}$ and k_{ni} , but he knows that $k_{(n+1)i}$ is definitely painful. He knows that $k_{(n+1)i}$ is definitely painful even if he strongly believes that k_{ni} is also.

To see this more clearly, imagine that the rational agent is placed at the definitely painful setting $k_{(n+1)i}$ for five hours. Every few minutes you go in and ask him whether it hurts. And the agent says, "Yes, this is definitely painful." Now after the five hours, you decide to move the device down to setting k_{ni} that is indefinitely definitely painful. The rational agent cannot

tell much or any difference between $k_{(n+1)i}$ and k_{ni} , but there is no temptation to conclude that he did not know that $k_{(n+1)i}$ was definitely painful. We are tempted to conclude instead that he does not know that k_{ni} is indefinitely definitely painful.

Compare a counterexample to the reliability condition from Anthony Bruekner and Oreste Fiocco.

Suppose that S is staring at a dead parrot for five hours and correctly believes that he sees a dead parrot throughout this interval. At the time t at which the interval ends, S sees the dead parrot and then blinks. One millisecond later at $t+1$ S opens his eyes and sees a dead-parrot-hologram. At $t+1$ S mistakenly believes p (= S sees a dead parrot).

Let us assume that prior to $t+1$, the Deception Squad had been completely unable to produce any holograms. The hologram producer finally goes briefly online at $t+1$, and it is linked to a hologram placer that randomly places holograms. It just so happens that the Squad's first and only success is a dead parrot hologram that winds up placed before S at $t+1$ unbeknownst to the Squad (who were trying to produce a live-chihuahua-hologram). So prior to $t+1$, S was not at any time . . . , or in any sense in imminent danger of being deceived by holograms . . . If S failed to know that p during these first few hours (in virtue of the future random hologram placement) then it would seem that every subject's apparent perceptual knowledge would be similarly impugned.¹³

There are equally compelling counterexamples in Ram Neta and Guy Rohrbaugh.

I am drinking a glass of water which I have just poured from the bottle. Standing next to me is a happy person who just won the lottery. Had this person lost the lottery, she would have maliciously polluted my water with a tasteless, odorless, colorless toxin. But since she won the lottery, she does no such thing. Nonetheless, she almost lost the lottery. Now, I drink the pure, unadulterated water and judge, truly and knowingly that I am drinking pure unadulterated water. But the toxin would not have flavored the water, and so had the toxin gone in, I would still have believed falsely that I was drinking pure, unadulterated water. The actual case and the . . . possible case are extremely similar in all past and present phenomenological and physical respects, as well as nomologically indistinguishable.¹⁴

It is evident that S knows that he is staring at a dead parrot and that you know that you are drinking pure, unadulterated water despite the violations of the reliability condition. It is equally evident that an agent experiencing the definitely painful setting $k_{(n+1)i}$ for five hours knows that $k_{(n+1)i}$

is definitely painful. So it is fair to conclude that Williamson's principle (I) is false.

4.7 CONCLUSIONS

The problem illustrated in the puzzle of the self-torturer is that there is no maximum amount of evil k_n in S such that an omniscient, omnipotent, wholly good being would prevent any amount of evil greater than k_n . We called that the *Problem of No Maximum Evil*.

According to Frank Arntzenius and David McCarthy, no rational agent can be indifferent between *every* pairwise option in series S . There is for each agent some *maximum* setting k_{n_i} less than k that is his unique rational choice in S . There is therefore for each rational agent some k_{n_i} that is the maximum setting in the sequence such that the agent prefers k_{n_i} to $k_{(n+1)_i}$. The existence of a maximum setting for each rational agent is the *Maximum Thesis*. The *Maximum Thesis* entails that there is no paradox of self-torturers and so no *Problem of No Maximum Evil*.

But we have seen that the *Maximum Thesis* is false. The thesis is based on penumbral connections between the predicates "is painful" and "is more painful than" that are simply mistaken. The *Maximum Thesis* is false even under the (false) assumption that "is painful" is a higher-order precise predicate. The puzzle of the self-torturers is instead characterized by the *Vague Maximum Thesis*. We saw that the *Vague Maximum Thesis* entails that there are several more or less conservative solutions to the *Problem of No Maximum Evil*.

Finally, we considered Tim Williamson's argument that his *Reliability Principle* together with other uncontroversial assumptions entails that rational agents are not guaranteed epistemic access to their condition at each setting in the paradox of the self-torturer. But if rational agents are not guaranteed epistemic access to their condition at each setting, then an omniscient, omnipotent, wholly good being might not have epistemic access to their condition, either. And this is a concern for the proposed solutions to the *Problem of No Maximum Evil*.

But we found that Williamson's *Reliability Principle* is mistaken. It is false that there is some increment i such that for every n a rational agent knows that he is in pain at $k_{(n+1)_i}$ only if he is in pain at k_{n_i} . And we concluded that, in many cases, rational agents alone are in a position to solve the paradox of the self-torturer.

5 On the Logic of Imperfection

5.1 INTRODUCTION

It is a plausible moral principle that essentially perfectly good agents should never actualize a state of affairs that is less good than some alternative. The principle requires that for any states of affairs A it is *morally necessary* that the state of affairs A is actualized only if A is at least as good as any alternative $\sim A$.¹ Call that *Principle A*.

In particular, *Principle A* requires that it is morally necessary that a maximally consistent state of affairs S is actualized only if S is (at least) as good as every alternative $\sim S$. Since each possible world is identical to a maximally consistent state of affairs, the moral principle entails that no possible world is actualized that is less good than some alternative.² Of course, if some possible world is better than every alternative, then the principle requires that the best world is actualized.

There is an additional principle governing essentially perfectly good agents. The principle states that it is metaphysically necessary that every essentially perfectly good agent satisfies all of its moral requirements. Call that the *Moral Perfection Principle*. The perfection principle requires that for every world and every essentially perfectly good agent, it is *morally necessary* that state of affairs A is actualized only if the state of affairs A is actualized. The perfection principle requires in particular that for every world and every essentially perfectly good agent, it is morally necessary that no world is actualized that is less good than some alternative only if no world is actualized that is less good than some alternative. Any moral agent that fails to satisfy any moral requirement in any world is less than essentially perfectly good.

But suppose there is no possible world that is at least as good as any alternative. Suppose there is an infinite sequence of worlds arranged in order of overall value where every possible world is less good than some alternative world in the sequence. In contexts of infinitely improving worlds, *Principle A* entails that an essentially perfectly good agent would have a moral requirement to actualize some world in the sequence and also a moral requirement to actualize no world in the sequence. Of course, it

is impossible to fulfill both of those moral requirements. So if essentially perfectly good beings are governed by the *Moral Perfection Principle*—if *necessarily* every essentially morally perfect being fulfills all of his moral requirements—then we should conclude that there exist no essentially perfectly good agents.

In (5.2) I show that *Principle A* and the *No Best World* hypothesis entail that the *Moral Perfection Principle* is false. Essentially perfectly good agents therefore cannot be governed by both the *Moral Perfection Principle* and *Principle A* in contexts of infinitely improving worlds.

In (5.3) I introduce a *Logic of Imperfection* and argue that Anselmian perfect beings might not be governed by *Moral Perfection Principles*. There are several interesting theses in the *Logic of Imperfection* that together provide a consistent explanation of how an Anselmian perfect being could fail to fulfill some moral requirement or other. In (5.3)–(5.5), I discuss various theorems (and nontheorems) in the logic including *Principle A*, the *No Best World* hypothesis, the *Moral Perfection Principle*, the *Ought-Can Principle*, the *No Conflicts Thesis*, and *Necessary Moral Dilemmas*. According to the *Logic of Imperfection*, it is possible that Anselmian perfect beings fail to fulfill some moral requirement, because it is *necessary* that Anselmian perfect beings fail to fulfill some moral requirement.

In section (5.6) I argue that the *Logic of Imperfection* explains well how an Anselmian perfect being might fail to fulfill a moral requirement. But the logic also allows Anselmian perfect beings to fulfill fewer moral requirements rather than more moral requirements. And there is no explanation at all for how a perfect being is allowed to fulfill fewer moral requirements.

I consider *Best World Dilemmas* in section (5.7) and provide some closing comments in (5.8).

5.2 PRINCIPLE A AND MORAL PERFECTION PRINCIPLES

The initial aim is to show that *Principle A* and the *Moral Perfection Principle* together entail that there is some set of best possible worlds. Let's assume that there is a countably infinite set of possible worlds that can be placed in an ordering from w_0 to w_∞ . Intuitively, every world in the sequence is *less good* than some other world in the sequence, and some worlds in the sequence are equally good. Let's also assume that the ordering does not vary from one world to the next. If w_0 is worse than w_1 from the standpoint of one world, then w_0 is worse than w_1 from the standpoint of every world. The standard for the evaluation of worlds does not vary from one world to the next. The comparative value of these worlds is therefore *absolute*. Here is David Lewis.

Clearly the assumption of absoluteness is correct for some preference orderings and not for others. An ordering of worlds according to their

net content of pleasure or whatnot is the same from the standpoint of any world . . . But an ordering of worlds according to the extent their inhabitants obey the law of God will differ from the standpoint of different worlds ruled by different gods who promulgate different laws, so the system of spheres will not be absolute.³

If different worlds are ruled by different gods who promulgate different laws, then, for all we know, from the standpoint of the moral standards in each possible world, there is a best possible world. It is at least possible that from the point of view of w_0 , w_0 is best, and from the point of view of w_1 , w_1 is best, and so on for every world. An essentially perfectly good agent might then actualize any world in the sequence.

The *No Best World* hypothesis entails that necessarily there is no world in the sequence that an essentially omnipotent and essentially omniscient agent cannot (at least weakly) actualize. Suppose the generalization is true that every essentially omnipotent and essentially omniscient being can (at least weakly) actualize any world in the sequence. The generalization entails, by strengthening antecedents, that every essentially omnipotent, essentially omniscient, essentially perfectly good and necessarily existing being can (at least weakly) actualize any world in the sequence.⁴

Let the variable P have as a domain the (possibly empty) set of essentially omnipotent, essentially omniscient, essentially perfectly good, and necessarily existing beings. Let the variables x and y have as a domain the set of possible worlds in the infinite sequence of worlds. And let \forall and \diamond express metaphysical necessity and possibility, and let “PAy” express O actualizes y. The formulation of the *No Best World* hypothesis is in (1).

$$1. \quad (\forall P)(\forall x)(\exists y)((x < y) \ \& \ \diamond(PAy))$$

(1) states that, necessarily, for every possible world in the sequence, an essentially omnipotent, essentially omniscient, essentially perfectly good and necessarily existing being could actualize some better world. (1) entails that necessarily there is no best actualizable world in the infinite sequence. But (1) does not entail that there exists an omnipotent or omniscient or perfectly good being in any world. The premise trivially entails that there is a best actualizable world only if no essentially omnipotent, essentially omniscient, essentially perfectly good, and necessarily existing being can actualize it. But since the entailment is trivial, it is not problematic. It does not affect the plausibility of the premise or the argument.

Let’s assume that each possible world is identical to some maximally consistent state of affairs or some maximally consistent propositions S. Suppose that, necessarily, an essentially morally perfect being is morally required to actualize S if some S-world is better than any \sim S-world. Let the operator O symbolize moral necessity and the principle is specified in (2).

$$2. (\exists y)(\forall x)((S \text{ is true at } y) \ \& \ ((\sim S \text{ is true at } x) \supset (x < y))) \supset OS$$

(2) provides sufficient conditions on the moral necessity to actualize a maximally consistent state of affairs S . But (2) is obviously not a perfectly general moral principle. Essentially perfectly good agents certainly have other moral requirements. There are, for instance, moral requirements to keep promises, observe the demands of justice, keep covenants and fulfill duties of beneficence, and so on. Let's generalize the principle in (2) to every state of affairs or proposition A . The general moral principle governing essentially perfectly good agents is (2.1).

2.1. It is morally necessary that A if and only if some A -world is better than any $\sim A$ -world.

$$OA \equiv (\exists y)(\forall x)((A \text{ is true at } y) \ \& \ ((\sim A \text{ is true at } x) \supset (x < y)))$$

Call the general moral principle in (2.1) *Principle A*. The principle states that it is morally necessary to actualize the state of affairs A if and only if some world at which A holds is better than any world at which $\sim A$ holds. In the simplest case where there is a set of best possible worlds, A is morally necessary if and only if A holds at all of the best worlds. In more interesting cases where there is no set of best possible worlds, A is morally necessary if and only if there is some A -world w such that every world w' better than w is also an A -world. A is morally necessary, for instance, if A holds in every world in the sequence better than w_{100} or A holds in every world better than w_{1000} and so on.

Suppose it is part of the concept of moral perfection that essentially perfectly good agents are also governed by the *Moral Perfection Principle*. The *Moral Perfection Principle* states that, necessarily, every essentially perfectly good agent satisfies all of his moral requirements. In particular the principle entails that every essentially perfectly good agent satisfies the general moral principle in (2.1). So necessarily every essentially perfectly good agent satisfies the moral requirement to actualize the state of affairs A if and only if some A -world is better than any $\sim A$ -world. The strong perfection principle is in (3) and the weak perfection principle is in (3.1).

$$3. \quad \Box(OA \supset A)$$

$$3.1 \quad \Box(OA \supset \Box A)$$

Principle A in (2.1) and the *Moral Perfection Principles* together entail the two important theorems in (3.2) and (3.3).

$$3.2 \quad \Box((\exists y)(\forall x)((A \text{ is true at } y) \ \& \ ((\sim A \text{ is true at } x) \supset (x < y))) \supset A)$$

$$3.3 \quad \Box((\exists y)(\forall x)((A \text{ is true at } y) \ \& \ ((\sim A \text{ is true at } x) \supset (x < y))) \supset \Box A)$$

The weaker theorem in (3.3) entails that every state of affairs A that a perfect being is required to weakly or strongly actualize at a world w obtains at w . Indeed, according to (3.3) it is true at every world w that there is no better world w' that a perfect being might have actualized instead. Since we have assumed that absolutism is true—that moral standards do not vary from world to world—it follows from *Principle A* and the *Moral Perfection Principle* that no world in the sequence is better than any other world.

Suppose for reductio ad absurdum that for some world w' , there is a world w such that w is better than w' . It follows that there is some maximal state of affairs S that is included in w' and not included in w and such that some world at which $\sim S$ obtains is better than any world at which S obtains. But then the perfect being in w' failed to satisfy the *Moral Perfection Principle*. That's impossible. Therefore there is no world w' for which there is a better world w .

It follows directly that the *No Best World* hypothesis is false. The *No Best World* hypothesis entails that every world is such that there is some better world or that $(\forall x)(\exists y)(x < y)$.

$$4. \quad \Box [(\forall P)(\forall x)(\exists y)((x < y) \ \& \ \Diamond(PAy)) \supset (\forall x)(\exists y)(x < y)]$$

It should be evident that *Principle A*, the *Moral Perfection Principle*, and the *No Best World* hypothesis are inconsistent. There is no question that at least one of these theses is false. But Anselmians cannot simply reject *Principle A* or *Moral Perfection Principles*, or, for that matter, the *No Best World* hypothesis. Anselmians must offer some explanation, for instance, of how *Moral Perfection Principles* might not govern an Anselmian perfect being or how *Principle A* might not govern an Anselmian perfect being. In section (5.2) we provide a *Logic of Imperfection*, which explains how perfection principles *might not* govern Anselmian perfect beings. The logic has a very plausible basis that validates the thesis that necessarily every perfect being violates at least one moral requirement. So it is possible that Anselmian perfect beings fail to fulfill some moral requirement, because it is necessary that Anselmian perfect beings fail to fulfill some moral requirement.

5.3 ON THE LOGIC OF IMPERFECTION

Call a *Logic of Imperfection* any logic for perfect beings that validates the thesis that necessarily every perfect being violates at least one moral requirement. On these logics, *Moral Perfection Principles* are necessarily false. Since perfection principles are false in every world, they provide the basis of no objection to Anselmian perfect beings.

Consider the simple H-model for a *Logic of Imperfection*. By an H-model we mean any structure,

$$H = \langle W, \geq, V \rangle$$

where W is a set of possible worlds or points, \geq is the relation “at least as good as” and where V is a valuation function. H-models meet conditions (i)-(iv).

- (i) $W \neq \emptyset$
- (ii) $\geq \subseteq W \times W$
- (iii) $V: \text{Prop} \times W \rightarrow \{T, F\}$
- (iv) \geq is transitive, strongly connected, reflexive and does not satisfy the Limit Assumption or formally that,

$$\sim(\forall X \subseteq W)(X \neq \emptyset \rightarrow \{x \in X \mid (\forall y \in X) x \geq y\} \neq \emptyset).$$

Condition (i) ensures that the set of worlds is not empty. Condition (ii) states that \geq is a set of order-pairs of possible worlds. Condition (iii) ensures that in every model, every proposition is assigned T (true) or F (false) at each world in W . And according to condition (iv) some nonempty subsets of W do not have a \geq -maximal element. In particular we assume that the set of all worlds has no \geq -maximal element or $\{x \in W \mid (\forall y \in W) x \geq y\} = \emptyset$.

Intuitively, these conditions state that not every subset of W has a best world and in particular that the set of all worlds W has no best world. The condition (iv) in our model guarantees that the *No Best World* hypothesis holds at every world in every valuation. We assume finally that *Principle A* provides the truth-conditions for moral necessity.

Let's consider some characteristic theses (and nontheses) of the *Logic of Imperfection*. Suppose we include every possible world W in the sequence of improving worlds. If there is a set of worst possible worlds—if worlds do not infinitely decrease in value—then the infinite sequence begins with the worst worlds. Let $A_0, A_1, A_2, \dots, A_n$ express the propositions respectively that world w_0 is actual, world w_1 is actual, and so on. The proposition expressed in the disjunction $A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n$ is therefore tautological. And according to *Principle A*, the tautological state of affairs T is morally necessary. Since F (= \sim T) is false in every world, it follows trivially that there is some T-world that is better than any F-world. And so it is true that OT or equivalently $O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$. So clearly *Principle A* in (2.1) entails that it is morally necessary that an essentially perfectly good being actualizes some world or other in the sequence. Dan Howard-Snyder and Norman Kretzmann come to similar conclusions. Here is Howard-Snyder.

... Secondly, Jove doesn't have the option of making it the case that there is no actual world. There must be some actual world, and it is up to Jove which it is. If Jove lies back and plays dead, if he refrains from using his creative powers, a world will nevertheless be actual and it

will be his responsibility. That world will have no concrete being other than Jove in it.⁵

Norman Kretzmann comes to the conclusion that God must create some world or other in the sequence of worlds.

The question I raise . . . is why God, the absolutely perfect being, would create anything at all . . . I summarize my own position by saying that God's goodness requires things other than itself as a manifestation of itself, and that God therefore necessarily (though freely) wills the creation of something or other, and that the free choice involved in creation is confined to the selection of which possibilities to actualize for the purpose of manifesting goodness . . . So, although I disagree with Aquinas's claim that God is free to choose *whether* to create, I'm inclined to agree with him about God's being free to choose *what* to create.⁶

But some might reasonably balk at the idea that actualizing a worst possible world could satisfy any moral requirement. So suppose instead that the sequence of worlds includes just those possible worlds that contain on balance *more good than evil*. It is again morally necessary that an essentially perfectly good being actualizes some world in the sequence. Suppose again that $A_0, A_1, A_2, \dots, A_n$ express the propositions that world w_0 is actual, world w_1 is actual, and so on. According to *Principle A*, the disjunction $(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ is morally necessary. Some possible world at which the disjunction $(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ is true is better than any possible world at which it isn't true. Indeed, the proposition $(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ is true at every world containing more good than evil, and $\sim(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ is true at no world containing more good than evil. So again we reach the conclusion that it is morally necessary that an essentially perfectly good being actualizes some world in the sequence or $O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$.

Indeed, (5) is necessarily true and so a thesis in H-models.

5. It is morally necessary that an essentially perfectly good being actualizes some world in the sequence.

$$O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$$

It also follows from *Principle A* that for each world in the sequence it is morally necessary that an essentially perfectly good being does not actualize that world. It is morally necessary that an essentially perfectly good being does not actualize the initial world in the sequence w_0 since some world at which $\sim A_0$ is true is better than any world at which A_0 is true. $\sim A_0$ is true at every world in the sequence that is better than w_0 and A_0 is true only at w_0 . *Principle A* therefore recommends $O\sim A_0$. It is also true that some world at which $\sim A_1$ is true is better than any world at which A_1 is true. $\sim A_1$ is true

at every world in the sequence that is better than w_1 and A_1 is true only at w_1 . *Principle A* therefore recommends $O\sim A_1$. Of course the same reasoning shows that it is morally necessary not to actualize any world in the sequence. So (6) is a characteristic thesis of H-models as well.

6. For each world in the sequence it is morally necessary that an essentially perfectly good being does not actualize that world.

$$O\sim A_0 \ \& \ O\sim A_1 \ \& \ O\sim A_2 \ \& \ \dots \ \& \ O\sim A_n$$

According to *Principle A*, an essentially perfectly good agent has the moral requirements in (5) and (6) in every world. If an essentially perfectly good agent exists, then he is required to actualize some world or other and he is required not to actualize any particular world. But are these requirements consistent?

According to premise (5), an essentially perfectly good agent is morally required to actualize some world in the sequence. That might appear inconsistent with the *No Best World* hypothesis. The *No Best World* hypothesis guarantees that for every world in the sequence there is a better actualizable world. So it is difficult to see how an essentially perfectly good agent could be required to actualize some world in the sequence. But the moral requirement in (5) is in fact perfectly consistent with the hypothesis that for every world in the infinite sequence there is a better world that an essentially perfectly good agent could actualize. The proposition in (7) is not valid in H-models.⁷

$$7. \ O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n) \supset (OA_0 \vee OA_1 \vee OA_2 \vee \dots \vee OA_n)$$

So the moral requirement in (5) does not entail any requirement to actualize a particular world in the sequence. And *Principle A* does not require that any essentially perfectly good agent actualize a particular world in the sequence, since there is no maximally consistent state of affairs S that is better than every maximally consistent state of affairs $\sim S$. The moral requirement in (5) states only that essentially perfectly good agents should actualize *some world or other* in the sequence. So (7) and (5) do not get us any closer to inconsistent moral requirements.

Suppose we introduce the permissibility operator P and define it in the usual way as $PA \equiv \sim O\sim A$. The state of affairs A is morally permissible if and only if it is not the case that some $\sim A$ -world is better than any A -world. Consider the weak thesis in (8).

$$8. \ O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n) \supset (PA_0 \vee PA_1 \vee PA_2 \vee \dots \vee PA_n)$$

The moral requirement in (5) together with the thesis in (8) entails that it is permissible to actualize some particular world in the sequence. And that certainly appears inconsistent with the *No Best World* hypothesis. It follows

from the *No Best World* hypothesis that for any maximally consistent state of affairs S there is some $\sim S$ -world that is better than any S -world. And it follows from *Principle A* that it is not permissible for any essentially perfectly good agent to actualize any world in the sequence.

Indeed, the moral requirement in (5) and the thesis in (8) are inconsistent with the *No Best World* hypothesis and *Principle A*. But even the weak thesis in (8) is not a thesis in H-models. The antecedent of (8) is true but the consequent is clearly false. Some world at which $\sim A_0$ is true is better than any world at which A_0 is true and, quite generally, some world at which $\sim A_n$ is true is better than any world at which A_n is true. So for every world w_n in the sequence, we have $O\sim A_n$. But then for every world w_n in the sequence, we have $\sim PA_n$. The proposition in (8) is therefore invalid.

But there is another argument that the moral requirements in (5) and (6) are inconsistent. The *No Conflicts Thesis* in (9) is a thesis in H-models.

$$9. \sim(O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n) \ \& \ O\sim(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n))$$

The thesis in (9) requires that no states of affairs are both morally required and also morally forbidden. And that requirement is a reasonable one. But it is also a theorem in most deontic systems that there is a moral requirement to actualize each state of affairs A and B only if there is a moral requirement to actualize both states of affairs A and B . And so (10) is certainly validated in these systems.

$$10. (O\sim A_0 \ \& \ O\sim A_1 \ \& \ \dots \ \& \ O\sim A_n) \supset O(\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n)$$

From the moral requirements in (6) and the thesis in (10) we can derive the consequent $O(\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n)$. A simple logical transformation on the consequent in (10) conjoined with the moral requirement in (5), and we have a violation of the *No Conflicts Thesis*.

$$11. O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n) \ \& \ O\sim(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$$

But the problem again is that (10) is not a thesis in H-models. The antecedent of (10) follows validly from *Principle A*. But the consequent of (10) is clearly false. The conjunction $\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n$ is not true at any world in the sequence. But the negation of that conjunction $\sim(\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n)$ is true at every world in the sequence. But then it follows from *Principle A* that $O\sim(\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n)$ and so of course also $\sim O(\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n)$. So (10) is clearly invalid. And the argument that no essentially perfectly good agent could have the requirements in (5) and (6) fails.

The most promising argument that the moral requirements in (5) and (6) are inconsistent appeals to *Moral Perfection Principles*. Perfection principles entail that necessarily every essentially perfectly good agent satisfies every requirement of *Principle A*. So it is metaphysically necessary that

every essentially perfectly good agent satisfies the moral requirements in (5) and (6). But the moral requirements in (5) and (6) cannot all be satisfied together. So the perfection principle seems to entail that no essentially perfectly good agent could have the requirements in (5) and (6).

Recall that according to the perfection principle the principles in (3) and (3.1) govern the moral actions of essentially perfectly good agents.

3. $\Box(OA \supset \Box A)$

3.1. $\Box(OA \supset A)$

Several philosophers have urged that essentially perfectly good agents must be governed by (3) or (3.1). But consider the thesis in (3). (3) entails that an essentially perfectly good agent satisfies a moral requirement in *some* world only if he satisfies that moral requirement in *every* world. Suppose an essentially perfectly good being is morally required to fulfill a promise to Abraham in the actual world. It follows from (3) that the promise to Abraham is fulfilled in every world. But it is impossible to fulfill a promise to Abraham in every world, since Abraham does not exist in every world. So the thesis in (3) is too strong even for essentially perfectly good agents.

There are additional problems. It follows from (3) that moral requirements in every world are consistent with moral requirements in the actual world. It is impossible, for instance, that an essentially perfectly good being promises not to return in some possible world and promises to return in the actual world. But such promises are certainly possible.

Consider instead the weaker deontic thesis in (3.1). It is obvious that (3) entails (3.1). The thesis in (3.1) guarantees that essentially perfectly good agents fulfill all of their moral requirements in every possible world. And the thesis is consistent with different moral requirements holding at different worlds. But there is a decisive objection to both (3) and (3.1). Each of these principles entails that (12) is a theorem governing essentially perfectly good agents.

12. $(O\sim A_0 \& \dots \& O\sim A_n \& O(A_0 \vee \dots \vee A_n)) \supset \Diamond(\sim A_0 \& \dots \& \sim A_n \& (A_0 \vee \dots \vee A_n))$

The proposition in (12) is stronger than the familiar ought-can principle, and it is a theorem in many systems of deontic logic. But (12) is not a thesis in H-models. Since there is no set of best worlds, there is no guarantee that all moral requirements can be satisfied together.

Principle A entails that every essentially perfectly good agent has the moral requirements in (5) and (6). So the antecedent in (12) is true. But it is evident that the consequent of (12) is false. The conjunction $\sim A_0 \& \dots \& \sim A_n \& (A_0 \vee \dots \vee A_n)$ is a contradiction and so not true in any possible world. So (12) is clearly not a thesis in H-models.

The strong perfection principle and the weak perfection principle entail (12). So we know these perfection principles cannot govern essentially perfectly good agents. Perfection principles are simply invalid in H-models.

It should be noted that the negation of (12) is a thesis in H-models.

13. $(O\sim A_0 \& \dots \& O\sim A_n \& O(A_0 \vee \dots \vee A_n)) \& \Box(A_0 \vee \dots \vee A_n \vee (\sim A_0 \& \dots \& \sim A_n))$

The thesis in (13) ensures that some moral requirement is violated in every possible world. Further, the *Moral Imperfection Principle* in (14) is also a thesis in H-models.

14. $\Box \sim(OA \supset A)$

According to (14) it is impossible that Anselmian perfect beings fulfill every moral requirement. Indeed, there is no world in which fulfilling every moral requirement is possible for Anselmian perfect beings. And so it is not a moral requirement either that Anselmian perfect beings fulfill every requirement. (15) is also a thesis in H-models.

15. $\sim O(OA \supset A)$

There is no consistency objection to the claim that an essentially perfectly good agent might have the moral requirements in (5) and (6). Certainly (5) and (6) entail that perfect beings will fail to fulfill some moral requirement in every world. But that presents no serious objection to Anselmian perfect beings since, according to thesis (15), there is no moral requirement that perfect beings fulfill every moral requirement in every world.

5.4 OUGHT-CAN AND OTHER WORRIES

The broadest *ought-can* principle $OA \supset \Diamond A$ is indeed valid in H-models. The principle entails that no essentially perfectly good agent is morally required to actualize a logically impossible state of affairs. It is true that essentially perfectly good agents are morally required to actualize some world or other in the sequence and also morally required not to actualize any world in the sequence. But essentially perfectly good agents are also not required to do the impossible.

We have seen that closure principles and perfection principles entail that essentially perfectly good agents are required to do the impossible. But the closure principles and perfections principles are not valid in H models. So the moral requirements in (5) and (6) do not violate the ought-can principle. (16), (17) and (18) are all theses in H-models.

16. $O(A_0 \vee A_1 \vee \dots \vee A_n) \supset \Diamond(A_0 \vee A_1 \vee \dots \vee A_n)$

17. $(O\sim A_0 \& O\sim A_1 \& \dots \& O\sim A_n) \supset (\Diamond\sim A_0 \& \Diamond\sim A_1 \& \dots \& \Diamond\sim A_n)$

18. $O(\sim A_0 \& \dots \& \sim A_n \& (A_0 \vee \dots \vee A_n)) \supset \diamond((\sim A_0 \& \dots \& \sim A_n (A_0 \vee \dots \vee A_n))$

The disjunction $A_0 \vee A_1 \vee \dots \vee A_n$ in (16) is true at every world in the sequence. So of course there is some world at which it is true. And each conjunct in (17) $\sim A_0 \& \sim A_1 \& \dots \& \sim A_n$ is true at some world in the sequence. The consequent in (18) is of course false, but so is the antecedent of (18). Since closure principles and the perfection principle are invalid, the moral requirements in (5) and (6) do not entail either the consequent or antecedent of (18). So the moral requirements in (5) and (6) do not entail a violation of the *ought-can* principle.

5.5 RESOLVING NECESSARY MORAL DILEMMAS

The moral requirements in (5) and (6) generate a special kind of moral dilemma in H-models. Since the comparative value of worlds is absolute, the moral requirements in (5) and (6) hold in every possible world. So the requirements in (5) and (6) are both *impossible to avoid* and *impossible to satisfy*.

19. $\Box(O\sim A_0 \& \dots \& O\sim A_n \& O(A_0 \vee \dots \vee A_n)) \& \Box(\sim(\sim A_0 \& \dots \& \sim A_n \& (A_0 \vee \dots \vee A_n)))$

(19) describes a necessary moral dilemma. An essentially perfectly good agent in a necessary moral dilemma must fail to satisfy (at least) one moral requirement in every possible world.

Moral dilemmas are resolvable in situations where at least one competing requirement is *less inviolable* than another. There are perhaps some moral requirements that an essentially perfectly good being simply cannot violate and others that he can. Actualizing w_0 , for instance, is worse than actualizing w_1 , and so we might expect that $O\sim A_0$ is a stronger moral requirement than $O\sim A_1$. And so we might conclude that it is worse to violate $O\sim A_0$ than it is to violate $O\sim A_1$. The equivalence described in (20) is valid in H-models. But if it is worse to violate $O\sim A_0$ than it is to violate $O\sim A_1$, then the moral requirement on the right side in (20) should be stronger than the moral requirement on the left side.

20. $O(A_0 \vee \dots \vee A_n) \equiv O(A_1 \vee \dots \vee A_n) \equiv \dots \equiv O(A_k \vee \dots \vee A_n) \equiv O(A_{k+1} \vee \dots \vee A_n)$

Suppose we define an *Inviolable Moral Requirement* in the following way.

OA is an Inviolable Moral Requirement \equiv there is no B such that every world w at which B is true is better than some world w' at which A is true.

It follows from these conditions that $O(A_0 \vee A_1 \vee \dots \vee A_n)$ is not an inviolable moral requirement. There is some world at which $A_0 \vee A_1 \vee \dots \vee A_n$ is true that is worse than any world at which $A_1 \vee \dots \vee A_n$ is true. The disjunction $A_0 \vee A_1 \vee \dots \vee A_n$ is true at w_0 but $A_1 \vee \dots \vee A_n$ is true at all and only those worlds better than w_0 .

Now suppose it is urged that an essentially perfectly good agent must fulfill any moral requirement that is inviolable and might fail to fulfill any moral requirement that is not inviolable. In that case an essentially perfectly good agent might not fulfill $O(A_0 \vee A_1 \vee \dots \vee A_n)$. But then it is also true that an essentially perfectly good agent might not fulfill $O(A_1 \vee \dots \vee A_n)$. The moral requirement in $O(A_1 \vee \dots \vee A_n)$ is also not inviolable, since every world in which $A_2 \vee \dots \vee A_n$ is true is better than some world in which $A_1 \vee \dots \vee A_n$ is true. In fact, no moral requirement to actualize a world in the sequence is inviolable. For every moral requirement $O(A_k \vee \dots \vee A_n)$, it is true that every world in which $A_{k+1} \vee \dots \vee A_n$ is true is better than some world in which $A_k \vee \dots \vee A_n$ is true. We reach the conclusion that there are no inviolable moral requirements to actualize a world.

But consider the moral requirements not to actualize a world. These requirements in (5) include $O\sim A_0 \ \& \ O\sim A_1 \ \& \ O\sim A_2 \ \& \ \dots \ \& \ O\sim A_n$. But again, no requirement in (5) is inviolable. The conjunction $\sim A_0 \ \& \ \sim A_1 \ \& \ \dots \ \& \ \sim A_n$ is true at every world that is not in the sequence. But then every world at which A_0 is true is better than some world at which $\sim A_0$ is true. And in general every world at which A_n true is better than some world at which $\sim A_n$ is true. So an essentially perfectly good being might fail to fulfill each moral requirement in (5). But then an essentially perfectly good being might actualize any world in the sequence. So an essentially perfectly good agent might resolve the moral dilemma by actualizing a world or not doing so. Each is consistent with fulfilling every moral requirement that is inviolable.

Propositions (5) and (6) do not contain inviolable moral requirements, and so an essentially perfectly good being might fail to fulfill any of those moral requirements. But certainly $O(A_0 \vee \dots \vee A_n)$ is *less inviolable* than $O(A_1 \vee \dots \vee A_n)$. Suppose it is urged that if OA is less inviolable than OB an essentially perfectly good being cannot fulfill OA and fail to fulfill OB. We define a *Less Inviolable Moral Requirement* as follows.

OA is Less Inviolable than OB iff every world w at which B is true is better than some world w' at which A is true and every world w at which C is true is better than some world w' at which B is true.

The requirement $O(A_0 \vee A_1 \vee \dots \vee A_n)$ is *less inviolable* than $O(A_1 \vee \dots \vee A_n)$, and $O(A_1 \vee \dots \vee A_n)$ is less inviolable than $O(A_2 \vee \dots \vee A_n)$, and generally the requirement $O(A_k \vee \dots \vee A_n)$ is less inviolable than $O(A_{k+1} \vee \dots \vee A_n)$. So an essentially perfectly good being that fulfills any requirement to actualize a world will fail to fulfill some moral requirement that

is more inviolable. He therefore cannot fulfill any requirement to actualize a world. And so it appears that he cannot fulfill the moral requirement in (5). But of course if he fulfills the moral requirements in (6) not to actualize any world in the sequence he will fail he will again fail to fulfill a less inviolable moral requirement to actualize some world. So it appears he cannot fulfill the moral requirement in (6) either. But it should be noted that the moral requirement in (6) is less inviolable than the moral requirement in (5).

It might look more promising to consider the set of contingent propositions B_0, B_1, \dots, B_n such that the conjunction $B_0 \& B_1 \& \dots \& B_n$ is true at every world in the sequence that is better than some world w_n . It is clear that *Principle A* entails that $O(B_0 \& B_1 \& \dots \& B_n)$. Since $B_0 \& B_1 \& \dots \& B_n$ is the intersection of every world better than w_n , it is evident that the conjunction $(B_0 \& B_1 \& \dots \& B_n)$ just is the set of worlds $w_k \cap w_{k+1} \cap w_{k+2} \cap \dots \cap w_{k+n}$ or the set of all worlds at which $(B_0 \& B_1 \& \dots \& B_n)$ is true. Since an essentially perfectly good agent ought to actualize $B_0 \& B_1 \& \dots \& B_n$, it follows that he ought to actualize the *conjunctive world*, $w_k \cap w_{k+1} \cap w_{k+2} \cap \dots \cap w_{k+n}$. In this case it is true that $O(B_0 \& B_1 \& \dots \& B_n)$ and also true that $(OB_0 \& OB_1 \& \dots \& OB_n)$, so there is no moral dilemma in the requirement to actualize these states of affairs.

In actualizing a conjunctive world, an essentially perfectly good agent ensures that the actual world includes $(B_0 \& B_1 \& \dots \& B_n)$. But as we move upward in the sequence we should expect the set that satisfies $(B_0 \& B_1 \& \dots \& B_n)$ to converge to fewer and fewer worlds. Consider the proposition “this world is more valuable than w_0 .” That proposition is true at every world better than w_0 and it is included in the conjunction $(B_0 \& B_1 \& \dots \& B_n)$. But the proposition, this world is more valuable than w_1 , is also a conjunct in $(B_0 \& B_1 \& \dots \& B_n)$. Of course the conjunction will include for each world w_n the proposition, this world is more valuable than w_{n-1} .

But the conjunction of contingent propositions unfortunately converges to a contradiction. There is no world that contains every contingent proposition of the form “the world w_n is better than world $w_{n-1}, w_{n-2}, w_{n-3}, \dots$ ” So a perfect being could not actualize every proposition *A* that holds in every world better than some world in the sequence. There is therefore no inviolable requirement to actualize that conjunctive world, and an essentially perfectly good being is not morally required to actualize that world.

5.6 FINAL OBJECTIONS TO THE LOGIC OF IMPERFECTION

Logics of Imperfection show how it might be the case that an Anselmian perfect being is not governed by *Moral Perfection Principles*. There is a

consistent set of theses that includes, among others, *Principle A*, the *No Best World* hypothesis, the *Moral Imperfection Principle*, *Ought-Can Principle*, the *No Conflicts Thesis*, and *Necessary Moral Dilemmas*. It is possible that Anselmian perfect beings fail to fulfill some moral requirement, according to *Logics of Imperfection*, because it is necessary that Anselmian perfect beings fail to fulfill some moral requirement.

It is true that Anselmian perfect beings have the moral requirements in (5) $O(A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ and (6) $O\sim A_0 \ \& \ O\sim A_1 \ \& \ O\sim A_2 \ \& \ \dots \ \& \ O\sim A_n$. No doubt it is impossible to fulfill both moral requirements and he is not required to fulfill them both. We know further that *Moral Perfection Principles* do not govern Anselmian perfect beings in H-models, and in particular we know that $\sim O((A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n) \ \& \ \sim A_0 \ \& \ \sim A_1 \ \& \ \sim A_2 \ \& \ \dots \ \& \ \sim A_n)$. Indeed, we know that $O((\sim A_0 \ \& \ \sim A_1 \ \& \ \sim A_2 \ \& \ \dots \ \& \ \sim A_n) \vee A_0 \vee A_1 \vee A_2 \vee \dots \vee A_n)$ or equivalently OT.

But according to the *Logic of Imperfection*, there is no moral requirement that an Anselmian perfect being actualize an on balance very good world. And this is problematic. Actualizing an on balance very good world entails the fulfillment of more moral requirements than actualizing an on balance less good world. Let A_n state that world w_n is actualized. For any A_n that fulfills the moral requirement $O(A_n \vee A_{n+1} \vee \dots \vee A_k)$ and fails to fulfill moral requirement $O(A_{n+1} \vee A_{n+2} \vee \dots \vee A_k)$ there is an A_{n+1} that fulfills both requirements. The *Logic of Imperfection* provides a good explanation of how an Anselmian perfect being might fail to fulfill some moral requirement or other. But it is a serious problem for the *Logic of Imperfection* that it provides no explanation at all of how an Anselmian perfect being is allowed to fulfill fewer moral requirements rather than more moral requirements.⁸

But setting aside the number of moral requirements that A_n fulfills and the number of moral requirements that A_{n+1} fulfills, the *Logic of Imperfection* provides no explanation at all of how an Anselmian perfect being might be allowed to actualize the worse state of affairs A_n in fulfilling those requirements rather than the better state of affairs A_{n+1} in fulfilling those requirements. And certainly Anselmians need some explanation of how a perfect being might be allowed to actualize the worse state of affairs A_n rather than the better state of affairs A_{n+1} .

5.7 BEST WORLD MORAL DILEMMAS

Some interesting and important moral dilemmas for perfect beings assume that *there is a morally best world*. Suppose that the earlier Moses receives his divine message the better. But suppose that the set of possible times at which Moses can receive his message begins *after* 7 a.m. and ends exactly at 12 noon. Moses can receive his message at any one of the infinitely many possible times after 7 a.m. and up to (and including) 12 p.m.

An essentially perfectly good agent is required to pass the divine message on to Moses at some time after 7 a.m., but for every time t after 7 a.m., there is some other time t' ($t > t' > 7\text{am}$). So there is no earliest time after 7 a.m. at which an essentially perfectly good being can pass the divine message on to Moses.

Now consider the H' -models, $H = \langle T, \geq, V \rangle$, that meet conditions (i)-(iv) above and where T is a set of instants at which a moral requirement might be fulfilled. *Principle A* applied to improving times is described in (21).

21. It is morally necessary that A if and only if some time t at which A is true is better than any time t' at which $\sim A$ is true.

$$OA \equiv (\exists t)(\forall t')((A \text{ is true at } t) \ \& \ ((\sim A \text{ is true at } t') \supset (t' < t)))$$

Let A_t symbolize the proposition that the divine message is passed on to Moses at time t . Prior to 7 a.m., an essentially perfectly good agent is morally required not to pass the divine message on to Moses at any time after 7 a.m.

22. $O\sim A_{12\text{pm}} \ \& \ O\sim A_j \ \& \ \dots \ \& \ O\sim A_k$

For any time t after 7 a.m. at which he passes the divine message to Moses, there is a better time t' ($t' < t$) to pass the message on to Moses.

23. $O(A_{12\text{pm}} \vee A_j \vee \dots \vee A_k)$

But it is better that Moses receives the message at some time during the interval [7am, 12pm) than at any time outside the interval.

Once again (22) and (23) are consistent. The weak and strong *Moral Perfection Principles* are again invalid in these H' -models. But in *Best World Moral Dilemmas* it is necessarily true that at each time t after 7 a.m., t is the *best possible time* for an essentially perfectly good being to pass the divine message on to Moses. We know that, necessarily, some interval of time or other elapses before the perfect being passes on the message to Moses. Since not even omnipotent beings can change the past, we know that at each time t after 7 a.m., t is the best possible time to pass the message on to Moses.

For arbitrarily selected interval [7am– t), suppose that exactly [7am– t) has elapsed before the perfect being passes on the message to Moses. At time t , t is the best possible time to pass the divine message on to Moses, and at every time t' earlier than t , t' was the best possible time to pass the divine message on to Moses. A perfect being that passes the divine message on to Moses will actualize the best world that he can, but he will nonetheless fail to fulfill some moral requirement.

5.8 CONCLUSIONS

In H-models, essentially perfectly good agents are required to actualize some world in the sequence and also to actualize no world in the sequence. But we know that there is no inconsistency in these models. An essentially perfectly good agent might be in a necessary moral dilemma. The theses needed to generate a contradiction from these moral requirements are simply not valid in H-models.

The moral requirements on essentially perfectly good agents do generate a necessary moral dilemma. But since no version of the *Moral Perfection Principle* is a thesis in H-models, necessary moral dilemmas present no consistency problem for essentially perfectly good agents.

We considered additional restrictions on the moral requirements of essentially perfectly good agents. It was shown that every essentially perfectly good agent that must fulfill *inviolable moral requirements* can resolve the necessary moral dilemma. There are no moral requirements that meet our conditions on inviolability. Further, every essentially perfectly good agent that must fulfill every *more inviolable moral requirement* can resolve the necessary moral dilemma between the requirements in (5) and (6) since the requirements in (5) are more inviolable than the requirements in (6).

Finally, we noted that *Logics of Imperfection* show how it might be the case that an Anselmian perfect being is not governed by *Moral Perfection Principles*. There is a consistent set of theses that includes, among others, *Principle A*, the *No Best World* hypothesis, the *Moral Imperfection Principle*, *Ought-Can Principle*, the *No Conflicts Thesis*, and *Necessary Moral Dilemmas*. It is possible that Anselmian perfect beings fail to fulfill some moral requirement, according to *Logics of Imperfection*, because it is necessary that Anselmian perfect beings fail to fulfill some moral requirement.

But in addition to the moral requirements in (5) and (6), we noted that there are disjunctive moral requirements including $O(A_{11} \vee A_{12} \vee \dots \vee A_n)$, $O(A_{12} \vee A_{13} \vee \dots \vee A_n)$, $O(A_{13} \vee A_{14} \vee \dots \vee A_n)$, and so on. None of the former moral requirements in this sequence are such that fulfilling them entails failing to fulfill the latter moral requirements. The *Logic of Imperfection* provides no explanation of how an Anselmian perfect being could fail to fulfill any of the latter moral requirements. That is a serious unsolved problem for the *Logic of Imperfection*.

Finally, we extended the discussion of necessary moral dilemmas to best world moral dilemmas in section (5.6). It is perfectly possible that an Anselmian perfect being necessarily fails to fulfill a moral requirement at time t and also actualizes the best possible world at t .

6 Supervenience, Divine Freedom, and Absolute Orderings

6.1 INTRODUCTION

Property-identical divine command theory (PDCT) maintains that the property *being obligatory* is identical to the property *being commanded by God*. According to PDCT, being obligatory is identical to being commanded by God in just the way that being water is identical to being H₂O or being gold is identical to being the element with atomic number 79.¹ If these identity statements are true, then they express a posteriori necessary truths. Of course, it remains a matter of some debate whether these identity statements are true. Certainly the so-called discovery that being obligatory is identical to being commanded by God might be mistaken. After all, many utilitarians and ethical egoists might claim to discover instead that being obligatory is identical to being maximally beneficial or that being obligatory is identical to being most in one's self-interest.² Should we learn that the utilitarians or the ethical egoists are right after all, then it is an a posteriori necessary truth that being obligatory is identical to being maximally beneficial or that being obligatory is identical to being most in one's self-interest, and so on.

PDCT rejects the proposal that being obligatory is *conceptually identical* to being commanded by God. Highly competent users of moral language—Mill, Kant, Moore, and Ross, for instance—provide compelling evidence that these terms do not have precisely the same meaning. These moral philosophers understood well the meanings of these terms, and yet they never converged on the conclusion that being obligatory is identical to being commanded by God. PDCT claims that this is just what we should expect. Important metaphysical relations are not always revealed in conceptual relations.

Further, PDCT does not entail that being commanded by God is a *right-making characteristic* of actions. PDCT does not entail that what makes an action morally obligatory is the fact that it is commanded by God. The properties are metaphysically identical, but that entails nothing about right-making characteristics. It is perfectly consistent with PDCT, for instance, that an action is morally obligatory if and only if the action maximizes overall value or the action is universalizable. It would of course follow immediately that an action is commanded by God if and only if the

action maximizes overall value or the action is universalizable. But PDCT is also consistent with the claim in traditional divine command theory that God's commanding an action is a right-making characteristic. Of course it would follow immediately that being obligatory is also a right-making characteristic.

The property-identical formulation of divine command theory finds its best defense in Robert M. Adams (1987) and has been commended more recently in William Alston (1990) as a promising formulation of divine command theory.³

Current work in moral theory bodes less well for PDCT. In a fascinating new argument, Mark C. Murphy contends that two well-received and highly plausible philosophical theses pose an extremely serious threat to property-identical divine command theory.⁴ The initial thesis states that God's commands are free only if those commands are not entirely fixed by nonmoral facts in the world. Call that the *Free Command Thesis*. Among God's free actions we should include the actualization of some possible world, the creation of rational beings, and perhaps various interventions in the natural world. But the *Free Command Thesis* entails that, in addition to these free actions, God has some freedom to command actions and agents simply as he desires or wishes.

The second thesis expresses the well-known metaethical view that all moral properties supervene on nonmoral properties. The thesis is widely regarded among moral theorists as an a priori or platitudinous moral truth.⁵ Call this the *Supervenience Thesis*. According to the *Supervenience Thesis*, any two possible worlds that are exactly alike in all of their nonmoral features must also be exactly alike in all of their moral features. For instance, if it is true that moral obligation supervenes on facts describing certain mental states and their causes—happiness, for example, or contentment or pleasure—then every world alike in facts about such mental states and their causes will be alike in their moral obligations.

According to Murphy, the *Free Command Thesis* and the *Supervenience Thesis* together entail that property-identical divine command theory is false. In the next section I examine and present Murphy's argument against PDCT. I show in the following section that two central inferences in the argument include mistaken assumptions about the substitutivity of metaphysical identicals in contexts of supervenience. I conclude that the argument is unsound and poses no serious threat to property-identical divine command theory. I offer some closing comments in the final section.

6.2 AN ARGUMENT AGAINST DIVINE COMMAND THEORY

The *Free Command Thesis* states that God's commands are free only if those commands are not entirely fixed by the nonmoral facts. The set of

nonmoral facts contains every fact obtaining in the world, including nonmoral facts about the thoughts, actions, desires, and choices of God. We should include among the nonmoral facts, for instance, the fact (if it is a fact) that God wants his creatures to be perfect or the fact (if it is a fact) that God desires that all of his creatures enjoy the beatific vision, and so on. The *Free Command Thesis* urges us to believe that God is not free in commanding agents and actions *unless* the totality of these facts does not entirely fix what God commands. Murphy argues as follows.

What I mean by saying that God has at least some freedom in commanding is that even if the world were in relevant respects otherwise the same, God might have given slightly different commands: God could have given an at least slightly smaller or larger number of such commands, or could have given commands at least slightly different in content, or could have given commands to an at least slightly different group of people. What God commands is not entirely fixed by the way the world otherwise is.⁶

Suppose T represents the total set of nonmoral facts *apart from* God's commands. The *Free Command Thesis* then asserts that God freely commands person S to do action A at time t_n only if both (1) and (2) are true.

1. The totality of facts T hold at t_n and God commands S to do A at t_n .
2. It is possible that the (same) totality of facts T hold at t_n and God does not command S to do A at t_n .

Condition (1) expresses the actual command of God at t_n on the total set of nonmoral facts T at t_n . Condition (2) ensures that the command of God at t_n on the same facts T might have been slightly different. God might have commanded person R to do A at t_n , for instance, or God might have commanded S to do B at t_n . Perhaps God might have commanded nothing at all at t_n . Condition (2) permits that as well. It is the wide range of possible commands guaranteed in condition (2) that Murphy contends is necessary to God's freedom in commanding.

Let's assume for *reductio ad absurdum* that PDCT is true. Property-identical divine command theory asserts that it is a necessary truth that being commanded by God is identical to being obligatory. If we let \Box symbolize metaphysical necessity and \equiv symbolize material equivalence, then PDCT entails, among other things, that proposition (3) is true.

3. \Box (God commands S to do A at $t_n \equiv$ it is obligatory that S do A at t_n).

In English, (3) states that necessarily God commands S to do A at t_n if and only if it is obligatory that S do A at t_n .

We can now draw two conclusions from *Free Command Thesis* and property-identical DCT. We invoke a principle of substitution for metaphysical identicals to infer (4) from propositions (3) and (1).

4. The totality of facts T hold at t_n and it is obligatory that S do A at t_n .

Similarly, the substitution of necessary equivalents governs the inference from propositions (3) and (2) to proposition (5).

5. It is possible that the (same) totality of facts T hold at t_n and it is not obligatory that S do A at t_n .

But we quickly find that propositions (4) and (5) are inconsistent with the *Supervenience Thesis*. Conjoining propositions (4) and (5) we arrive at (6).

6. The totality of nonmoral facts T holds at t_n and it is obligatory that S do A at t_n and it is *possible* that the totality of nonmoral facts T hold at t_n and it is not obligatory that S do A at t_n .

We know that the *Supervenience Thesis* entails that any two worlds exactly alike in nonmoral facts must be exactly alike in moral facts.⁷ According to propositions (4) and (5), the set T includes the total set of nonmoral facts. And so every possible world that has the set of nonmoral facts described in T must have the same moral facts. The *Supervenience Thesis* therefore entails that (7) is true.

7. The total set nonmoral facts T holds at t_n and it is obligatory that S do A at t_n only if it is *impossible* that the total set of nonmoral facts T hold at t_n and it is not obligatory that S do A at t_n .

It should be clear that propositions (6) and (7) cannot both be true. And so we must reject at least one of the following theses: the *Free Command Thesis*, property-identical divine command theory, or the *Supervenience Thesis*. Let's agree that the *Free Command Thesis* and the *Supervenience Thesis* are too plausible to reject. The remaining option is to reject property-identical divine command theory. That concludes the argument against property-identical divine command theory.

6.3 CHALLENGES TO THE ARGUMENT

The *Free Command Thesis* asserts that God's commands are free *only if* those commands do not supervene on nonmoral facts in the world. But Murphy has argued that being commanded by God *does* supervene on nonmoral facts because being morally obligatory supervenes on nonmoral

facts (*Supervenience Thesis*), and being commanded by God is metaphysically identical to being morally obligatory (PDCT). Murphy offers this argument.

Assume that PDCT is true and that the moral strongly supervenes on the non-moral. *Being obligatory* thus strongly supervenes on the non-moral. Necessarily then whether an act is obligatory is wholly fixed by a set of properties that does not include *being obligatory*. Now, if PDCT is true, then, *being obligatory* just is *being commanded by God*. And so, by substitution, necessarily, whether an act is commanded by God is wholly fixed by a set of properties that does not include *being commanded by God*.⁸

Slightly more formally, the inference that Murphy offers here includes the following two premises and conclusion.

- i. The property of being obligatory is metaphysically identical to the property of being commanded by God.
- ii. The property of being obligatory supervenes on a set of nonmoral properties that do not include the property of being obligatory.
- iii. Therefore the property being commanded by God supervenes on a set of nonmoral properties that do not include the property of being commanded by God.

The modal propositions in this passage follow from the strong supervenience claims. So we could add to the argument the conclusion that necessarily whether God commands an act is wholly fixed by a set of properties that do not include being commanded by God. We could also add the premise that necessarily whether an act is obligatory is wholly fixed by a set of properties that does not include being obligatory.

The inference from (i) and (ii) to (iii) appeals to a principle of substitution for metaphysical identicals, and there are two compelling responses to the inference. The best response for defenders of PDCT is to accept the inference from (i) and (ii) to (iii) and reject the suggestion that (iii) presents any problem for the *Free Command Thesis*. But defenders of PDCT also have good reason to reject Premise (ii).

Suppose defenders of PDCT urge that the proposition that the property of being obligatory supervenes on nonmoral properties that includes the property of best serving divine purposes or plans or includes the property of playing an important role in salvation history, and so on. There are very good reasons for defenders of property-identical divine command theory to hold this view. It is exactly this position that makes the freedom to command diverse actions consistent with the *Supervenience Thesis*. Recall that T represents the total set of nonmoral facts *apart from* God's commands. According to Murphy, God freely commands person S to do action A at

time t_n only if both (1) and (2) are true. (1) and (2) are supposed to follow from the *Free Command Thesis*.

1. The totality of facts T hold at t_n and God commands S to do A at t_n .
2. It is possible that the (same) totality of facts T hold at t_n and God does not command S to do A at t_n .

But if God's commands or divine purposes or goals or intentions are among the nonmoral facts on which moral obligation supervenes, then (1) and (2) do not follow from the *Free Command Thesis*. It is consistent with God freely commanding A that the *Supervenience Thesis* is true and (1') and (2') are true.

- 1'. The totality of facts T hold at t_n and God commands S to do A at t_n .
- 2'. It is impossible that the (same) totality of facts T hold at t_n and God does not command S to do A at t_n .

In worlds where God commands S to do A at t_n , God's divine plan for S includes S doing A at t_n . But in worlds where God commands S to do $\sim A$ at t_n , God's divine plan for S includes S failing to do A at t_n . God's plan or purposes for S in any world w do not supervene on the nonmoral facts in w and are among the nonmoral facts on which moral obligation supervenes. God determines his divine plan for each agent freely. But then (1') and (2') do not entail that the *Free Command Thesis* is false. We derive from (1') and (2'), (4') and (5').

- 4'. The totality of facts T1 hold at t_n and it is obligatory that S do A at t_n .
- 5'. It is possible that the totality of facts T2 hold at t_n and it is not obligatory that S do A at t_n .

And the propositions in (4') and (5') are consistent with the *Supervenience Thesis* since the total facts in T1 are not the same as the total facts in T2. T1 contains the additional nonmoral fact that God commands S to do A at t_n or the additional nonmoral fact that God's divine purposes for S include S's doing A at t_n . And T2 contains the additional nonmoral fact that God does not command S to do A at t_n or the additional nonmoral fact that God's divine purposes for S include S's not doing A at t_n . And so we find that divine command theory is consistent with both the *Supervenience Thesis* and the *Free Command Thesis*.

There is good reason to believe that the property of being obligatory to supervene on God's divine plan, God's aims, intentions, and so on for various moral agents in various situations. Certainly we want to allow that God's purposes might have been much different from what they happen to be for

most moral agents. Certainly we want to allow that God's plan for salvation history might have been much different from what it happens to be. But variation in God's plan or purposes for moral agents or for salvation history is variation in nonmoral fact. And there does not seem to be much question that God's commands will vary depending on his divine purposes.

But defenders of PDCT might urge instead that the property of being obligatory is metaphysically identical with being commanded by God and that being obligatory supervenes on the nonmoral property of being commanded by God. It is worth noting first that many metaphysical identicals stand in the supervenience relation. The property of being water and the property of being H_2O are metaphysical identicals, and being water supervenes on being H_2O . The property of being gold and the property of having atomic number 79 are metaphysical identicals, and being gold supervenes on having atomic number 79. And there are numerous other examples. So nothing precludes metaphysical identicals from standing in the supervenience relation.

Of course by premise (i) and substitutivity we would now be moved to conclude, contrary to premise (ii), that being obligatory supervenes on a set of nonmoral facts that includes the property of being obligatory. Murphy argues against this suggestion.

. . . [W]e want to allow that God's commanding is free, and that what God commands us to do, we are obligated to do. In one possible world, God commands us to perform religious ritual R_1 , and we are obligated to perform it; in another possible world, God commands us to perform a distinct ritual R_2 —though R_2 in itself differs from R_1 in no morally relevant way—and we are thus obligated to perform R_2 . Our being obligated to perform one of these rituals or the other does not supervene, then, on the intrinsic features of the rituals. . . . [W]e want to say here that the property that distinguishes the required ritual from the non-required ritual in each world is *being commanded by God*. But that appeal is precisely what the defender of a property identity formulation of PDCT is barred from making. By *identifying* the property *being obligatory* with the property *being commanded by God*, defenders of the property identity formulation of PDCT remove the property *being commanded by God* from the set of non-moral properties on which the property *being obligatory can supervene*.⁹

But the conclusion of this argument simply does not follow.¹⁰ As we noted previously, many paradigm examples of supervenience include properties that are metaphysically identical. Being water is *identical* to being H_2O and being water *supervenes* on being H_2O ; being a tiger is identical to being a member of a certain species S and being a tiger supervenes on being a member of species S . And so there is no reason to conclude that identifying

the property being obligatory with the property being commanded by God removes being commanded by God from the set of nonmoral properties on which the property being obligatory can supervene.

But suppose it is argued instead that being obligatory is a *moral* property, and since being commanded by God is identical to being obligatory, it follows that being commanded by God is also a moral property. Therefore, being commanded by God is not in the set of nonmoral properties on which being obligatory can supervene.

The problem is that the argument is circular. Here is a perfectly parallel inference that leads us to the opposite conclusion. Being commanded by God is a descriptive property, and since being obligatory is identical to being commanded by God, it follows that being obligatory is a descriptive property. Therefore, being commanded by God might well be in the set of descriptive properties on which being obligatory supervenes. So the argument offers no good reason to conclude that the property of being commanded by God is not a descriptive property on which the property being obligatory supervenes.

So defenders of PDCT are not committed to the conclusion that being commanded by God is a moral property. Rather, defenders of property-identical divine command theory have the option to adopt the position that moral obligation supervenes on a set of descriptive properties that includes the property of being commanded by God. Divine command theorists would then take the option to hold that moral properties are just descriptive properties. This is a position defended in Frank Jackson, for instance. “. . . [E]thical properties are descriptive properties. For it is a consequence of the way that the ethical supervenes on the descriptive that any claim about how things are made in the ethical vocabulary makes no distinction among the possibilities that cannot in principle be made in purely descriptive vocabulary.”¹¹

So those who defend the position that being obligatory is identical to being commanded by God might well advance the thesis that being obligatory also supervenes on being commanded by God or that being obligatory supervenes on God’s divine plan or intentions or goals for moral agents or salvation history. There is certainly nothing in the *Supervenience Thesis* or the *Free Command Thesis* that prevents them from taking such a position. Worlds that vary in nonmoral fact might therefore include different commands without a violation of the *Free Command Thesis*. And moral obligations might be entirely fixed by the set of nonmoral facts, and so there is no violation of the *Supervenience Thesis*. The general argument against property-identical divine command theory therefore offers no interesting reason to abandon that important metaethical theory.¹²

6.4 AN ARGUMENT AGAINST ABSOLUTE ORDERINGS

Recall the brief excerpt from David Lewis.

Clearly the assumption of absoluteness is correct for some preference orderings and not for others. An ordering of worlds according to their net content of pleasure or whatnot is the same from the standpoint of any world . . . But an ordering of worlds according to the extent their inhabitants obey the law of God will differ from the standpoint of different worlds ruled by different gods who promulgate different laws, so the system of spheres will not be absolute.¹³

Divine command theorists should reject the proposal that the ordering of possible worlds is absolute. Divine command theorists should maintain that relative to each world w there is a set of divine commands that partly determines the moral standard at w . The moral obligations to do actions a_0, a_1, \dots, a_n at w supervene on the set of descriptive properties that a_0, a_1, \dots, a_n possess at w including, for instance, the property of being commanded by God, the property of being important to salvation history, the property of being required for fulfillment of God's divine plan for moral agents or salvation history, and so on. And the moral standard at w entails an ordering over possible worlds according to the extent their inhabitants approximate the moral standard in w .

There is nothing in property-identical divine command theory that entails that God's commanding alone makes an action morally obligatory. Property-identical divine command theorists certainly can maintain that God's commands are part of what makes an action morally right, and so those commands determine in part the moral standard that obtains in each world. God's commands might supervene on many nonmoral facts that include God's purposes, intentions, and plans in some way, and God's purposes, intentions, and plans might vary from world to world.

As we noted previously, we certainly want to allow that God's purposes might have been much different from what they happen to be for most moral agents. There are worlds in which Smith exists, for instance, and is never called to religious or monastic life. But certainly there are worlds in which Smith is called to a monastic life. There are worlds in which God's purposes would have Smith seek varying moral ideals. Smith might have a contemplative moral ideal in some worlds and a more practical moral ideal in others. God's aim for Smith in some worlds might be primarily charitable and in other worlds God's aim for Smith might be primarily pastoral. Certainly we want to allow that God's plan for salvation history might have been much different from what it happens to be. But variation in God's plan or purposes for moral agents or for salvation history and God's commands will vary depending on his divine purposes.

There are other ways in which divine purposes determine which moral standards obtain from world to world. The moral significance of mercy according to any plausible moral standard is vague. So for any moral standard in any world, God's divine plan will resolve the vagueness of mercy's significance in different ways. Suppose that w is a *mercy-world* only if the

moral standard in w places greater moral significance on mercy than it does on justice. The ordering of possible worlds relative to the moral standard in w is determined by the extent to which their inhabitants fulfill the moral obligations of w .

But there is no imaginative resistance at all in conceiving of worlds in which moral standards place *lesser or greater* emphasis on mercy. It is just implausible to suppose that there is some precise moral weight that any correct moral theory must place on mercy. The moral significance of mercy in any world will depend on the plan for salvation history in that world. It is equally implausible to suppose that there is some precise moral weight that any correct moral theory must place on justice and so on for every moral value. Divine command theorists should maintain that necessarily facts about mercy and justice are relevant to determining our moral obligations but also that there is no precise weight that any plausible moral theory must place on justice and mercy. And the relative significance of justice and mercy will depend in part on the divine plan for that world. The moral significance of justice and mercy can vary across possible worlds and moral standards depending on the plans and goals God freely chooses.

The extent of God's freedom to command a more merciful standard or to command a more just standard is a matter for moral inquiry to determine. Divine command theorists are not committed to the thesis that God might have had any divine plan whatsoever or might have commanded any standard whatsoever. God's freedom to command a more beneficent standard or to command a standard permitting greater autonomy or loyalty or gratitude and so on is also a matter that moral inquiry will settle. Moral standards that incorporate a severe conception of justice that prohibits mercy, for instance, are not counterexamples to divine command theory. Instead, they are counterexamples to the position that God has an unconstrained freedom in commanding. The conclusion to be drawn is not that divine command theory is false but that there are no worlds in which God commands a moral standard that altogether prohibits mercy.

Suppose, then, that moral standards vary across possible worlds. The *Supervenience Thesis* requires that any two possible worlds that are exactly alike in all of their nonmoral features must also be exactly alike in all of their moral features. I have argued that the *Supervenience Thesis* is true and that among the nonmoral features of possible worlds are facts describing the commands of God and God's divine purposes, intentions, and goals. And those facts vary across possible worlds. The *Free Command Thesis* requires that God's commands are not entirely fixed by nonmoral facts in the world *excluding* nonmoral facts about God's commands, purposes, intentions, and goals. I have argued that the *Free Command Thesis* is true and that moral standards therefore vary across possible worlds.

We should therefore conclude that the moral ordering of worlds is not absolute. The ordering of worlds differs from the standpoint of different worlds in which different moral standards obtain.

The implications of our conclusion are important. There is no obstacle to concluding that relative to some world w and moral standard S there is no best possible world. So relative to world w and standard S , for every world w' in the sequence of worlds there is a better world w . But then relative to w and S it is impossible that God actualize a world that is unimprovable.

But God's intentions, goals, and divine purposes might have determined a different moral standard. There is no obstacle to concluding that relative to world w' and moral standard S' there is a best possible world. So, relative to w' and S' it is perfectly possible that God actualize a world that is unimprovable.

Modal intuition does urge that, *possibly*, there is no best possible world. But it also urges that, *possibly*, there is a best possible world. And those conclusions are perfectly consistent if moral standards vary from world to world.

Since the ordering of possible worlds is not absolute, it is possible both that there is no best world and that God might have actualized a best possible world. God might have actualized a best possible world since he might have commanded a moral standard such as S' relative to which there is a best possible world. Of course whether God commands a moral standard that has a best possible world depends on what God's purpose happens to be for a particular world. In different worlds different purposes are realized and every purpose is realized in some world or other. On this view it is false that God must choose a moral standard relative to which there is a best possible world. And it is certainly not obvious a priori that a perfect being must choose such a moral standard.

The nonabsolute ordering of worlds has another important implication. William Rowe has long argued that it is not possible to reconcile divine perfection and freedom.¹⁴ According to Rowe, the proposal that God both necessarily and freely actualized the best possible world is false. Leibniz's defense of this proposal takes the form of a simple two-premise argument.

1. If God exists and is omnipotent, perfectly wise and good, then He chooses to create the best possible world.
2. God exists and is omnipotent, perfectly wise, and perfectly good.
3. Therefore, God chooses to create the best of all possible worlds.

There is no question that for Leibniz premise (2) is metaphysically necessary. And Leibniz certainly seems committed to the metaphysical necessity of (1). Here's Rowe.

... if we suppose that God chooses to create less than the best ... it would logically follow that he is lacking in wisdom, goodness or power. Indeed Leibniz says that 'to do less good than one could is to be lacking in wisdom or goodness,' that the most perfect understanding 'cannot fail to act in the most perfect way, and consequently to choose the best'

(Theodicy, 252) . . . What Leibniz says about moral necessity implies that (1) is *absolutely necessary*. For he clearly holds that from the fact that a being does less good than it could it *logically follows* that the being in question is lacking in wisdom and goodness. And one cannot hold this without being committed to holding that the consequent of (1) . . . *logically follows* from the antecedent of (1).¹⁵

Suppose (1) and (2) express metaphysically necessary propositions. It follows that (3) is metaphysically necessary. And Rowe concludes that God could have actualized no world other than our own and so God did not freely actualize the world.

But it does not follow that God *could not* have actualized some world other than our own. To reach that conclusion we must assume that the same moral standards hold in every possible world. Suppose that moral standards might have been different. The best one can do relative to the standard of a mercy-world might demand making more exceptions to the requirements of justice. The best one can do relative to a justice-world might demand fewer exceptions to the requirements of justice. If moral standards vary from world to world, then there is no absolute ordering of worlds. But then what constitutes the best possible world can vary from world to world.

The actual world might be the best possible world relative to the moral standards that actually obtain. But it is not necessarily or absolutely the best possible world. But then God might have actualized some other world. But then moral perfection can be reconciled with divine freedom.

6.5 CONCLUSIONS

The metaphysical identity of being obligatory and being commanded by God does not preclude the possibility that being obligatory supervenes on being commanded by God or supervenes on being required for divine purposes or on being important to salvation history, and so on. Defenders of property-identical divine command theory can hold that being obligatory is entirely fixed by nonmoral facts that include facts about God's commands, goals, purposes, and intentions. The *Supervenience Thesis* is therefore satisfied. Defenders can also hold that God's commands, goals, purposes, and intentions and so on are included in the set of nonmoral facts and not entirely fixed by them. The *Free Command Thesis* is therefore satisfied. These theses are not inconsistent with the metaphysical identity of being obligatory and being commanded by God. We should therefore conclude that these theses pose no serious threat to property-identical divine command theory.

The *Supervenience Thesis* and the *Free Command Thesis* provide good reason for denying that there is any absolute moral ordering of possible

worlds. The ordering of possible worlds is in fact relative to the moral standard S obtaining in each world w , moral standards vary from world to world, and God's free commands determine (in part) the moral standard obtaining in each world. The variation in moral standards will depend on the particular purposes God happens to have for that world and its inhabitants. But if the ordering of possible worlds is not absolute, then it is possible both that there is no best possible world and that God might have actualized a best possible world. This consequence is particularly important since there is no argument that God must choose a moral standard relative to which there is a best possible world. The moral standard that God chooses depends in part on the divine purposes and plans. So there is no argument that choosing a moral standard relative to which there is no best world displays any moral imperfection at all. Another important consequence of the relative ordering of possible worlds is that divine perfection can be straightforwardly reconciled with divine freedom. There is no incoherence in the view that perfect beings might *freely* actualize a best possible world.

7 Vague Eschatology

7.1 INTRODUCTION

It's a familiar eschatological view that there are people in each possible state in the afterlife. Some people go determinately and eternally to heaven and some people go determinately and eternally to hell. And everyone that goes to purgatory will eventually go determinately and eternally to heaven. The familiar eschatological view rejects the doctrine of *universalism*. According to universalism, all are ultimately redeemed to enjoy eternal communion with God. Universalism ensures that no human beings are beyond redemption; every human being (or perhaps every being that *can* go to heaven) does go to heaven.

Suppose that an essentially perfectly just being must select a principle of justice that will provide the basis for evaluating the lives of moral agents. The principle of justice will provide the moral justification for the distribution of punishments and rewards in the afterlife. Since we have assumed that universalism is false, an adequate principle of justice must provide a moral justification for distributing punishments and rewards in such a way that some people go determinately and eternally to heaven and some people go determinately and eternally to hell.

In section (7.2) I consider Ted Sider's *Degree of Goodness Argument*. The argument assumes that the goodness and badness of moral agents is a matter of degree. For each moral state that an agent might instantiate, there is another moral state he might instantiate that is nearly the same in value. The argument also advances a formal proportionality condition on principles of justice. The condition requires that any two moral agents instantiating *nearly* the same moral state be treated in *nearly* the same way. Call that the *Proportionality of Justice* condition.

Among other things, the proportionality of justice condition demands that rewards and punishments in the afterlife be proportionate to the goodness or badness of moral agents. In particular, any two moral agents instantiating nearly the same moral state should receive nearly the same punishment or reward. But according to the *Degree of Goodness Argument*, no principle of justice that observes the proportionality of justice and

the degrees of goodness among moral agents could distribute rewards and punishments in such a way that some people go determinately and eternally to heaven, some people go determinately to purgatory, and the remaining people go determinately and eternally to hell. We must therefore abandon the familiar eschatological view.

In section (7.3) I generalize Sider's *Degree of Goodness Argument*. In section (7.4) I offer a countermodel in supervaluation semantics to the proportionality of justice condition. Moral agents that are in nearly the same moral states might not be treated in nearly the same way. It is possible that there is an important and nonarbitrary moral difference between moral agents in nearly the same moral state. It is possible, for instance, that moral agents S and S' are in nearly the same moral state, S' is beyond redemption and S is not. I conclude that moral agents in nearly the same moral state might be treated in very unequal ways.

In (7.5) I consider the possibility that only those moral agents that reject God as their savior are beyond redemption. I offer the *Degree of Acceptance* argument against the proportionality of justice condition. In (7.6) I consider an objection from higher-order vagueness. I argue that we should reject the proportionality of justice condition in favor of the *Moral Difference Thesis* and the *Vague Depravity Thesis*. I offer some concluding remarks in (7.7).

7.2 THE DEGREE OF GOODNESS ARGUMENT

According to Ted Sider, any adequate principle of justice must meet the proportionality of justice condition. Here is Sider.

. . . justice requires its judgments to be proportional to the [morally relevant] factors. If Sally's performance is better than Jimmy's then, other things being equal, it would of course be unjust to pay Jimmy more; but *if Sally's performance is only minutely better than Jimmy's, it would be unjust to pay Sally far more . . .* What I am calling *the proportionality of justice prohibits very unequal treatment of persons who are very similar in relevant respects*.¹

The proposed condition on principles of justice is a purely formal condition. Compare, for instance, the proportionality condition in (J).

- J. For any moral agents S and S', if S and S' are the exactly same in every morally relevant respect, then S and S' should be treated in the same way.

The condition in (J) demands that moral agents that share every property relevant to the distribution of benefits and burdens must be treated the

same way. The condition in (J) is typically regarded an uncontroversial constraint on every substantive principle of justice from utilitarian principles to libertarian principles to liberal egalitarian or Rawlsian principles. The properties relevant to the proper distribution of benefits and burdens might include utility-maximization, need, effort, merit, or simply choice. Moral agents that are exactly the same with respect to the relevant properties, whatever those properties happen to be, must be treated in morally equivalent ways.

The proportionality of justice condition that Sider describes applies to moral agents that are *nearly the same* in morally relevant respects. Consider the conditions in (J').

- J'. For any moral agents S and S', if S is not definitely morally worse than S', then S and S' should not be treated in very unequal ways.

(J') is also proposed as a perfectly general constraint on principles of justice. According to the condition in (J'), if S is not clearly morally worse than S', then S and S' should not be treated in very unequal ways.

In the *Degree of Goodness Argument* it is the moral states of individual agents that determine the proper distribution of punishments and rewards among them. A principle of justice meeting Sider's proportionality of justice condition must distribute punishments and rewards to moral agents in proportion to the degree of goodness or wickedness of those agents.

The degree of goodness or badness of each moral state an agent might instantiate is determined by the number and kind of actions the agent performs. Suppose the degree of badness of each moral state is a simple matter of the number of minor offenses a moral agent has committed. Here is Sider's *Degree of Goodness Argument*.

Suppose . . . that the divine criterion is based on how many obscenities one utters (the more the worse). Suppose further that there are no gaps in realized obscenity levels, in that for no n is it the case that someone utters n obscenities, someone utters some greater number of obscenities, and no one utters $n+1$ obscenities . . . Now choose some arbitrarily damned person, who on Earth uttered some number n of obscenities, and begin going through the afterlife, finding persons that were less and less obscene. Initially these persons will all be in hell, but eventually we will arrive at one in heaven. In fact there must be a sharp cutoff point in this procedure . . . This is a consequence of (i) the lack of gaps in realized obscenity levels (ii) the binary conception of the afterlife and (iii) . . . that obscenity is a moral matter of degree. . . . But such a cutoff would be monstrous, for it would blatantly violate the proportional nature of justice . . . [N]o just God could give radically different treatment to a pair of persons who differed only by a single obscenity.²

The repugnant conclusion of the *Degree of Goodness Argument* is that the first moral agent S' to go determinately and eternally to hell will have uttered $n+1$ obscenities and the last moral agent S to go determinately to purgatory will have uttered n obscenities.

It's obvious that S and S' are treated in very unequal ways. S is going determinately to purgatory and S' is going determinately and eternally to hell. But S' has committed just one more minor offense than S , so S' is not definitely worse than S . We have a clear violation of the proportionality of justice condition. If S' is not definitely worse than S , then no principle of justice can recommend that S' go determinately and eternally to hell and S go determinately to purgatory.

It is worth noting that not having such a cutoff would be at least as monstrous. Assume for reductio ad absurdum that, for all moral agents S and S' , if S utters n obscenities and S' utters $n-1$ obscenities, then S goes determinately and eternally to hell only if S' goes determinately and eternally to hell. There is no doubt some number of obscenities n such that any agent that utters n obscenities goes determinately and eternally to hell. By hypothesis, for any n such that anyone who utters n obscenities goes determinately and eternally to hell only if anyone who utters $n-1$ obscenities goes determinately and eternally to hell. By repeated applications of the hypothesis we can conclude that everyone goes determinately and eternally to hell. So having no cutoff is at least as monstrous as having some cutoff.

According to the *Degree of Goodness Argument*, the predicates "being in hell," "being in heaven," or "being in purgatory" are not vague. It is not possible to be indeterminately in heaven or to be indeterminately in hell or to be indeterminately in purgatory. But the argument also assumes that, for every possible moral state, some agent instantiates that moral state in the afterlife. If there are moral agents in heaven, purgatory, and hell, then there is very good reason to conclude that the proportionality condition in (J') has been violated.³

7.3 DEGREE OF GOODNESS ARGUMENT GENERALIZED

The *Degree of Goodness Argument* generalizes to any sequence of minor evil actions that determines the degree of goodness or badness of moral agents. Let k_0 be among the best moral states a human being might attain.⁴ Let k be among the worst moral state a human being might attain. The argument urges that there is a sequence S of moral states k_n ($k_0 \leq k_n \leq k$) such that, for some increment in evil i ($i > 0$), no moral state $k_{(n+1)i}$ is definitely worse than the preceding moral state k_{ni} and the moral state k is much worse than k_0 .⁵

The *Degree of Goodness Argument* assumes that there are moral agents instantiating every moral state in the sequence. Moral agents that instantiate the moral state k_0 go determinately and eternally to heaven and moral

agents that instantiate the moral state k go determinately and eternally to hell. If we let $<!$ symbolize *much worse than* and let \approx symbolize *not definitely worse than*, the sequence S is described as follows.

$$S = k_i \approx k_0, k_{2i} \approx k_i, k_{3i} \approx k_{2i}, \dots, k \approx k_{ni} \& k <! k_0.$$

It is assumed that there are increments (or decrements) insignificant enough that the moral state $k_{(n+1)i}$ resulting from having committed $n + 1$ minor evils is not definitely worse than the moral state k_{ni} resulting from having committed n minor evils. The assumption that there are insignificant evils is not intended to commit us to the controversial position that there are unnoticeable harms or imperceptible increments in pain or suffering. The assumption does commit us to the position that there are very minor evils.

According to the proportionality of justice condition in (J'), any two moral agents S and S' in adjacent moral states $k_{(n+1)i}$ and k_{ni} must be treated in nearly the same way. We know that moral agents instantiating k go determinately and eternally to hell. But we also know that there is some first moral agent in the sequence that goes to purgatory. As we move from k up the sequence toward the best moral state in k_0 , there is some k_n ($k_0 \leq k_n \leq k$) such that moral agents instantiating the moral state $k_{(n+1)i}$ go determinately and eternally to hell and some moral agent instantiating the moral state in k_{ni} goes determinately to purgatory (and eventually to heaven).

But the recommendation that a moral agent instantiating the moral state in k_{ni} go determinately to purgatory and a moral agent instantiating the moral state $k_{(n+1)i}$ go determinately and eternally to hell violates the proportionality of justice condition (J'). Contrary to (J'), there are two moral agents instantiating adjacent moral states $k_{(n+1)i}$ and k_{ni} that are treated in very unequal ways.

7.4 IRREDEEMABLE EVIL AND SUPERVALUATIONISM

The *Degree of Goodness Argument* shows that any principle of justice respecting degrees of goodness and badness among moral agents will violate the proportionality condition in (J'). But consider whether principles of justice are in general required to meet the condition in (J').

Suppose that for some moral agent S and some irredeemably evil moral state k_{ni} , agent S instantiates k_{ni} only if S is *irredeemably evil*. In general, agents are irredeemably evil if and only if they instantiate irredeemably evil moral states. And suppose a moral agent S is irredeemably evil if and only if S instantiates a moral state that is sufficiently bad that God *cannot* save S . Certainly, a moral agent that instantiates an extremely bad moral state might have instantiated a better moral state. So it is no doubt true that in some worlds S goes determinately to purgatory or determinately to heaven. But it is impossible that S instantiates an irredeemably evil moral state and S goes determinately to purgatory. So we stipulate

that a moral agent S is irredeemably evil if and only if S goes determinately and eternally to hell.⁶ Only those moral agents that are beyond the possibility of redemption go determinately and eternally to hell. Every moral agent that is not irredeemably evil goes determinately to purgatory or determinately and eternally to heaven.

Suppose that some moral agent S' is not definitely worse than moral agent S . We can assume that S instantiates the moral state k_{ni} and S' instantiates the adjacent moral state $k_{(n+1)i}$ in the sequence S . The open question is whether it is possible that S' is irredeemably evil and S is not irredeemably evil. The question is whether there might be an important and nonarbitrary moral difference between moral agents that instantiate adjacent moral states.

Notice that the predicates “is morally worse than” and “is irredeemably evil” do not sharply divide their positive and negative extensions. Certainly there is a moral state k_{ni} that is redeemably evil and another moral state k_{mi} that is irredeemably evil. But there are many moral states in the sequence that are neither redeemably evil nor irredeemably evil.

There are also moral states in the sequence k_{ni} and k_{mi} such that the moral state k_{mi} is *morally worse than* the moral state k_{ni} . But there are many moral states k_{mi} such that k_{mi} is neither morally worse than k_{ni} nor not morally worse than k_{ni} .

On supervaluation semantics, the truth-value of the proposition “the moral state k_{mi} is morally worse than the moral state k_{ni} ” can be determined only if we sharpen the vague predicate “is morally worse than.” But there is no unique and nonarbitrary way to make the predicate “is morally worse than” precise. Supervaluationism therefore makes it true that the moral state k_{mi} is morally worse than the moral state k_{ni} if and only if that proposition is true on every admissible precisification of “is morally worse than.” And supervaluationism makes it false that the moral state k_{mi} is morally worse than k_{ni} if and only if that proposition is false on every admissible precisification of that predicate. Otherwise the proposition is neither true nor false.

Supervaluation semantics places some important restrictions on admissible precisifications. The most important restrictions to consider here concern the penumbral connections holding between the predicates “is irredeemably evil” and “is morally worse than.” The penumbral connections in P1 and P2, for instance, seem true.

- P1. For all n, m , and for any i , k_{mi} is irredeemably evil and k_{ni} is redeemably evil only if k_{mi} is morally worse than k_{ni} .
- P2. For all n, m , and for any i , k_{mi} is irredeemably evil and k_{ni} is not irredeemably evil only if k_{ni} is not morally worse than k_{mi} .

So there are no admissible precisifications of these predicates on which the antecedents of these conditionals are true and the consequents are false. But the *Degree of Goodness Argument* assumes in addition that P3 is true.

P3. For all n, m , and for any i , k_{mi} is irredeemably evil and k_{ni} is not irredeemably evil only if k_{mi} is definitely morally worse than k_{ni} .

If S is irredeemably evil and S' is not irredeemably evil, then there is an important and nonarbitrary moral difference between S and S' . But if there is an important and nonarbitrary moral difference between moral agents S and S' , then according to P3, S and S' cannot be in adjacent moral states $k_{(n+1)i}$ and k_{ni} . In other words, if there is an important and nonarbitrary moral difference between moral agents S and S' , then S and S' cannot be in nearly the same moral state.

But the penumbral connection in P3 is mistaken. It is possible that moral agents S and S' are in adjacent moral states $k_{(n+1)i}$ and k_{ni} , and also that there is an important and nonarbitrary moral difference between S and S' . Suppose $k_{(n+1)i}$ is definitely irredeemably evil and k_{ni} is not definitely irredeemably evil. It might also be true that $k_{(n+1)i}$ is *not definitely morally worse than* k_{ni} . Consider figure 7.1, in which both predicates are depicted.

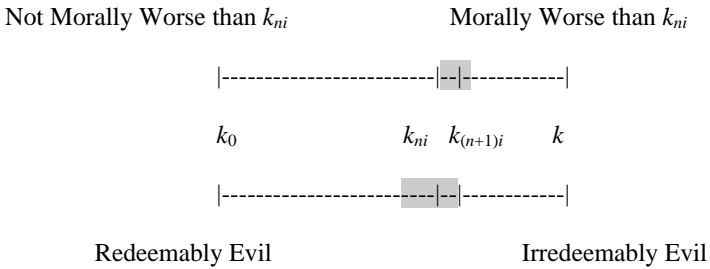


Figure 7.1

In figure 7.1, the moral state $k_{(n+1)i}$ is in the shaded area on the top line. Moral states to the left of the shaded $k_{(n+1)i}$ area are definitely not morally worse than k_{ni} , and moral states to the right of the shaded area are definitely morally worse than k_{ni} . Since the moral state $k_{(n+1)i}$ is in the shaded area on the top line, it is not definitely morally worse than k_{ni} . But on the bottom line the moral state $k_{(n+1)i}$ is not in the shaded area and the moral state k_{ni} is in the shaded area. So the moral state $k_{(n+1)i}$ is definitely irredeemably evil and k_{ni} is not definitely irredeemably evil.

Let's show that the situation depicted in figure 7.1 is possible. As we move incrementally down the sequence of moral states from k_0 to k , there is some small increment i ($i > 0$) such that moral agents instantiating moral state $k_{(n+1)i}$ are definitely irredeemably evil and moral agents instantiating k_{ni} are not definitely irredeemably evil. Moral agents instantiating k_{ni} are *borderline* irredeemably evil. And since we have assumed that moral agents might be in nearly the same moral states, it is possible to choose an increment i ($i > 0$) sufficiently small that the state $k_{(n+1)i}$ is not definitely morally worse than that state k_{ni} . Moral agents instantiating $k_{(n+1)i}$ are in nearly the

same moral state as moral agents instantiating k_{ni} . But then for some increment i ($i > 0$) in the sequence S , $k_{(n+1)i}$ is definitely irredeemably evil and k_{ni} is borderline irredeemably evil, and $k_{(n+1)i}$ is not definitely worse than k_{ni} . This is the situation depicted in figure 7.1.

According to the *Degree of Goodness Argument*, every moral state in sequence S is instantiated. There is therefore some moral agent S that instantiates the moral state in k_{ni} and some moral agent S' that instantiates the moral state in $k_{(n+1)i}$. The moral agent S' is definitely irredeemably evil and moral agent S is borderline irredeemably evil. Suppose an essentially perfectly just being applied the following principles of justice to S and S' .

PJ1. Moral agents that are definitely irredeemably evil cannot be saved and so must go determinately and eternally to hell.

PJ2. Moral agents that are borderline irredeemably evil can be saved and so go determinately to purgatory.

On the basis of principle PJ1, the agent S' goes determinately and eternally to hell. On the basis of PJ2, the agent S goes to purgatory and eventually to heaven.

It is true that S' is not definitely morally worse than S . But there is nonetheless an important and nonarbitrary moral difference between S and S' . S' is definitely irredeemably evil and so S' cannot be saved. But S is *borderline* irredeemably evil and so S can be saved.

We should conclude that the proportionality of justice condition in J' is false. It does not in general violate the proportionality of justice not to treat S and S' in nearly the same way even when S' is not definitely worse than S . If S is borderline irredeemably evil and S' is definitely irredeemably evil, then S' is not definitely worse than S , but it is not possible to treat S and S' in nearly the same way. S' is beyond redemption and cannot be saved; S is almost beyond redemption and can be saved.

7.5 WHAT ABOUT DEGREES OF ACCEPTANCE?

Suppose it is true that no moral agent that does not reject God as his savior—no matter how many obscenities he has uttered during his lifetime—is beyond redemption. The *Degree of Goodness Argument* assumes that there is some number of obscenities n such that anyone uttering n obscenities goes determinately and eternally to hell. Let's assume instead that only those moral agents that reject God as savior go determinately and eternally to hell.

Suppose God provides every moral agent with a final opportunity to accept or reject Him as his savior. There are of course various more or less definite ways to reject God as savior. Perhaps Smith is asked whether

he accepts God as his savior and Smith indefinitely shakes his head no, or Smith is asked whether he accepts God as his savior and he indefinitely utters no. In order to simplify matters, let's suppose that moral agents are provided with a sequence of cards on which there are various shades from *definitely red* to *definitely orange*. Suppose agents are instructed to hold up the card that is definitely red if they definitely reject God as their savior. Moral agents are instructed to hold up a card that is indefinitely red if they indefinitely reject God as savior. In general, moral agents are more indefinite in their rejection of God as the cards they hold up are less close to definitely red. Finally, moral agents are instructed to hold up the definitely orange card to definitely accept God as their savior.

Now suppose an essentially perfectly just being applies the following principles of justice to S and S'.

PJ1'. Every moral agent that definitely rejects God as his savior cannot be saved and so goes determinately and eternally to hell.

PJ2'. Every moral agent that does not definitely reject God as his savior can be saved and so goes to purgatory (or to heaven).

Essentially perfectly just beings that apply PJ1' and PJ2' send moral agents determinately and eternally to hell only if they *definitely reject* God as their savior. Moral agents that do not definitely reject God as their savior are sent to purgatory or to heaven. We assume that everyone knows that only those moral agents that definitely reject God as their savior are sent determinately and eternally to hell. And everyone knows that every moral agent that does not definitely reject God as their savior is sent to purgatory.

Assume that for every card in the sequence there is some moral agent that holds up that card. There will be a card $k_{(n+1)i}$ that is definitely red and a card k_{ni} that is just a shade different and not definitely red. Every moral agent that holds up k_{ni} goes to purgatory and every moral agent that holds up card $k_{(n+1)i}$ goes determinately and eternally to hell. So there will be moral agents S and S' such that S definitely rejects God as his savior and S' does not definitely reject God as his savior, and the card S holds up is not definitely more red than the card S' holds up.

S is sent determinately and eternally to hell because S definitely rejects God as his savior and cannot be saved. S' is not sent determinately and eternally to hell because S' does not definitely reject God as his savior and can be saved. The card S holds up is not definitely more red than card S' holds up, so the attitude that S expresses is not definitely worse than the attitude that S' expresses. But there is an important and nonarbitrary moral difference between S and S'. The important moral difference is that S definitely rejects God as his savior and cannot be saved, and S' is on the borderline of rejecting God as his savior and can be saved.

7.6 DEGREES OF GOODNESS AND HIGHER-ORDER VAGUENESS

Let's consider an important objection from higher-order vagueness that the moral states k_{ni} and $k_{(n+1)i}$ are *not* nearly the same moral states. It is true that there is a borderline between the redeemably evil and the irredeemably evil. The borderline cases include all of the indefinitely irredeemably evil moral states. But there is yet another, second-order borderline between the *definitely* irredeemably evil and the *indefinitely* irredeemably evil. The borderline cases include all of the *indefinitely* definitely irredeemably evil moral states. Figure 7.1 depicts the first-order borderline but fails to depict the second-order borderline.⁷

Suppose there are increments in offensiveness sufficiently small that k_{ni} and $k_{(n+1)i}$ are adjacent moral states only if the moral state k_{ni} is on the second-order borderline of irredeemable evil. But if k_{ni} is on the second-order borderline of irredeemable evil, it might be argued, there is no important and nonarbitrary moral distinction between moral states k_{ni} and $k_{(n+1)i}$. Any two moral agents S and S' that instantiate the moral states k_{ni} and $k_{(n+1)i}$ are such that each agent is definitely irredeemably evil. The difference between S and S' is that S is *indefinitely* definitely irredeemably evil and S' is *definitely* definitely irredeemably evil.

The response to this objection from higher-order vagueness is the same response offered on the assumption of first-order vagueness. We should note that, in the case of second-order vagueness, that S' is not definitely morally worse than S and that there is nonetheless an important and nonarbitrary moral difference between S and S'. Once again, S' does not instantiate a moral state that is on the borderline of irredeemable evil. S' is definitely, definitely irredeemably evil S' and so S' cannot be saved.

In contrast, S is *indefinitely* definitely irredeemably evil. So S instantiates a moral state that is on the *borderline*—even if a higher-order borderline—of irredeemable evil. Since S is on the borderline of irredeemable evil, he is not beyond the possibility of redemption. He is instead nearly beyond the possibility of being saved.

S' is not definitely morally worse than S, but there remains a morally important and nonarbitrary difference between S' and S that justifies treating S' and S very unequally. S' is among the irredeemably evil and S is on the borderline of the irredeemably evil.

Of course the objection from second-order vagueness arises again at the third order of vagueness and so on upward. But the response to the problem of second-order vagueness can be generalized. Let's define *superdefinite irredeemable evil* in SE.

- SE. Moral agent S is superdefinitely irredeemably evil if and only if for every order of vagueness n , it is true that S is definitely _{n} irredeemably evil.

A moral agent S is superdefinitely irredeemably evil just in case S instantiates a moral state that is irredeemably evil, and S does not instantiate a moral state that is on *any borderline* of irredeemable evil. The important and nonarbitrary moral difference between agents S and S' , then, is that S is on some borderline or other of irredeemable evil and S' is superdefinitely irredeemably evil.

The claim that there is an important and nonarbitrary moral difference between S and S' does not commit us to the position that there is a precise border between moral agents that are not irredeemably evil and moral agents that are irredeemably evil. The claim that there is an important and nonarbitrary moral difference between S and S' commits us instead to the *Vague Depravity Thesis* and the *Moral Difference Thesis*. Here is the *Vague Depravity Thesis*:

There is no amount of evil k_n , ($k \geq k_n > 0$) in S such that for every increment i ($i > 0$) and *every* admissible precisification, k_{ni} is not irredeemably evil and $k_{(n+1)i}$ is irredeemably evil.

The *Vague Depravity Thesis* ensures that, for all moral states k_n and $k_{(n+1)}$, there is some i ($i > 0$) and some admissible precisification such that a moral agent that instantiates $k_{(n+1)i}$ is irredeemably evil only if a moral agent that instantiates k_{ni} is also irredeemably evil. So there is no discrete transition from a moral state that is indefinitely irredeemably evil to a moral state that is definitely irredeemably evil. And in general there is also no discrete transition between a moral state that is indefinitely definitely _{n} irredeemably evil to a moral state that is definitely _{$n+1$} irredeemably evil.

The claim that there is an important and nonarbitrary moral difference between S and S' also commits us to the *Moral Difference Thesis*.

If there is some amount of evil k_n , ($k \geq k_n > 0$) in S such that for some increment i ($i > 0$) and *every* admissible precisification, $k_{(n+1)i}$ is irredeemably evil and such that for *some* admissible precisification k_{ni} is not irredeemably evil, then it does not in general violate the proportionality of justice condition that moral agents instantiating $k_{(n+1)i}$ go determinately to hell and moral agents instantiating k_{ni} go determinately to purgatory.

The *Moral Difference Thesis* asserts that there might be an important and nonarbitrary moral difference between moral agents that instantiate nearly the same moral states. It might be that all and only moral agents that are superdefinitely irredeemably evil cannot be saved. It might be that moral agents on some borderline or other of irredeemable evil are not yet beyond redemption.

Finally, the view that there is an important and nonarbitrary moral difference between S and S' commits us to the rejection of the *Proportionality of Justice Thesis*.

If there is some amount of evil k_n , ($k \geq k_n > 0$) in S such that for some increment i ($i > 0$) and *some* admissible precisification, $k_{(n+1)i}$ is irredeemably

evil and k_{ni} is also irredeemably evil, then it violates the proportionality of justice that moral agents realizing $k_{(n+1)i}$ go to hell and moral agents realizing k_{ni} go to purgatory.

The proportionality of justice thesis entails that two moral agents instantiating moral states k_{ni} and $k_{(n+1)i}$ that are both irredeemably evil on *some* admissible precisification must be treated in the same way. The proportionality of justice thesis assumes that there cannot be an important and nonarbitrary moral difference between moral agents that instantiate nearly the same moral state. It assumes that it's impossible that a moral agent instantiating $k_{(n+1)i}$ is irredeemably evil and cannot be saved, and a moral agent instantiating k_{ni} is the borderline of the irredeemably evil and so can be saved. But that assumption is mistaken. We should conclude instead that the proportionality of justice thesis is false. It does not in general violate the proportionality of justice to treat moral agents that instantiate nearly the same moral state in very unequal ways.

7.7 CONCLUSIONS

The *Degree of Goodness Argument* shows that any principle of justice that respects degree of goodness among moral agents will violate the proportionality condition in (J'). But the proportionality condition in (J') is false. There can be important and nonarbitrary moral differences between moral agents that instantiate nearly the same moral state. And those important moral differences can justify very unequal treatment.

The *Vague Depravity Thesis* ensures that there is no precise border between moral agents that are irredeemably evil and moral agents that are not irredeemably evil. There is no discrete transition, for instance, from a moral state that is definitely irredeemably evil to a moral state that is indefinitely irredeemably evil. A moral agent that instantiates a moral state that is irredeemably evil might not be much worse than a moral agent that instantiates a moral state that is not irredeemably evil.

According to the *Moral Difference Thesis*, there can be an important and nonarbitrary moral difference between moral agents that instantiate nearly the same moral states. It might be, for instance, that all and only moral agents that are superdefinitely irredeemably evil cannot be saved. And it might also be that moral agents that are on some borderline of irredeemable evil are, fortunately, not quite beyond redemption. Together these theses entail that the proportionality of justice condition is false.

Suppose we find it reasonable to reject the proportionality of justice condition in (J').⁸ The eschatology might then be true that every moral agent is sent determinately and eternally to heaven, determinately to purgatory, or determinately and eternally to hell. And a perfectly just being might respect the degrees of goodness among moral agents in the distribution of these rewards and punishments.

8 Theistic Modal Realism, Multiverses, and Hyperspace

8.1 INTRODUCTION

In the Leibnizian philosophical tradition, Phil Quinn maintained that a strong improbability thesis must govern the choices of perfect beings.

If an omnipotent and superlatively good moral agent were to actualize a possible world he would actualize some actualizable world of unsurpassable moral goodness.¹

But Quinn also maintained that it is impossible for a perfect being to actualize more than one possible world.

A Leibnizian of the strict persuasion would . . . be as unhappy with the suggestion that there are many actualizable worlds of unsurpassable moral goodness as with the suggestion that there are none. In either case it would seem that God would have no sufficient reason for *actualizing exactly one possible world, and this, after all, is the most he can do.*²

Theistic adherents to the Leibnizian tradition are committed to the unlikely proposition that the actual world, with all of its evil, is as good as any other logically possible world.³ Call that the *Less-than-Best Problem*.

One theistic response to the *Less-than-Best Problem* is to maintain that every possible world is a *real, concrete universe* out there.⁴ A theistic modal realist can take the position that our world is simply one among an infinite plurality of concrete universes actualized in logical space. If there is a best possible universe, theistic modal realists might argue, there is no moral reason why it should be *our* universe. There is no moral reason why the individual inhabitants of our world should enjoy the best possible experiences rather than the individual inhabitants of other real concrete universes. And of course if there is no best possible world then there is every reason to expect that no inhabitants of any world experience the best possible experiences. In (8.2) I consider a theistic modal realist solution to the *Less-than-Best Problem*. In sections (8.3–8.7) I argue that theistic modal realism has the resources to

resolve a series of problems derived from the *Principle of Plenitude*, including the modal problem of evil and the *Less-than-Best Problem*. In sections (8.8–8.12) I consider *Turner’s Multiverse Solution* to the *Less-than-Best Problem*. Donald Turner proposes that some possible worlds are “complex worlds” and the instantiation of a complex world Turner calls a “multiverse” or “cosmoi.” According to Turner, a perfect being ought to actualize the complex world that includes every cosmos containing more good than evil. I show that Turner’s multiverse solution entails the implausible necessitarian thesis that the actual world is the only possible world. And since every action and event that occurs in the actual world necessarily occurs in the actual world, the complex world we inhabit is fatalistic. In (8.13) I review Derek Parfit’s hypothesis that every possible world is actual. Parfit calls that the *All-Worlds Hypothesis*. The *All-Worlds Hypothesis* does offer a solution to the *Less-than-Best Problem*. But there is simply no reason to believe that every possible world is actual.

In (8.14) I focus on approaches to representing the infinite value of complex worlds. I argue against the common usage of Cantorian infinities in representing infinite amounts of value. Cantorian infinities improperly represent the aggregation of value among infinitely valuable worlds. There are much better approaches to representing the infinite value to be found in John Conway’s surreal numbers or, alternatively, in Kagan and Vallentyne’s aggregation metaprinciples.

In (8.15) I consider *Hudson’s Hyperspace Solution* to the *Less-than-Best Problem*. Hudson proposes that there actually exists a collection of many independent, three-dimensional subregions in a connected four-dimensional space. According to Hudson, these regions stand at a determinate distance from each other but do not stand at a determinate direction from each other. Each region is completely independent from the others. According to Hudson, a perfect being would actualize or instantiate a world containing every subregion worth actualizing.

In (8.16–8.17) I show that Hudson’s hyperspace solution also entails the incredible conclusion that the actual world instantiated in plenitudinous hyperspace is a necessitarian world. Every action and event that does occur necessarily occurs. Among the unacceptable consequences of Hudson’s hyperspace solution is that there is no divine freedom at all. There is no divine freedom in actualizing a world and no divine freedom in interacting with the denizens of the actual world. An additional consequence of Hudson’s hyperspace solution is that every possible world is on balance good. I offer some conclusions in (8.18).

8.2 THEISTIC MODAL REALISM?

Mark Heller offers this initial characterization of genuine modal realism.

Modal realists . . . believe that the actual world is a concrete object of which you and I are literal parts, and he believes that other worlds are

also concrete objects some of which literally include other people as parts. Merely possible worlds and merely possible people *really exist* despite their lack of actuality.⁵

Suppose there is an infinite plurality of possible worlds. Every possible world is a real, concrete universe and each world is a causally and spatiotemporally closed individual. None of the infinite plurality of possible worlds stands in any causal or spatiotemporal relation to any world other than itself. And no world stands in a causal or spatiotemporal relation to the parts of any worlds other than its own parts.⁶

We are parts of the actual world or *worldmates* because we stand in spatiotemporal relations to one another. And for any possible world *w* the individuals in *w* are parts of *w* because they stand in literal spatiotemporal relations to one another at *w*. All individuals are worldbound. No individual exists in more than one world. But for any individuals at any world there is some world containing duplicates of those individuals and many worlds containing counterparts of those individuals.

Suppose that at each concrete, spatiotemporally isolated universe there is a perfect being that actualized that universe.⁷ For every valuable experience that an individual *could have*, there is some individual that *does have* that experience in some world. And for every valuable thing that could exist there is some world at which that valuable thing does exist.

Among the possible worlds that a perfect being has actualized let's assume there is a single best possible world. It is true that somewhere in logical space there are individuals enjoying the best possible experiences in the best possible world. There are, in fact, infinitely many extremely valuable worlds in which countless individuals are enjoying the best possible (or nearly the best possible) experiences. We can be sure that there are individuals similar enough to us to be our counterparts enjoying these experiences in many possible worlds.

In response to the *Less-than-Best Problem*, theistic modal realists can urge that there is a real, concrete universe *w* such that *w* is the best possible world, the inhabitants of *w* enjoy the best possible experiences, and a perfect being in *w* actualized *w*. From the point of view of the individuals in *w*, there is no moral reason why our world, rather than *w*, should be the single best possible world. And certainly from the point of view of any other world there is no moral reason why our world should be the single best possible world. But further from the point of view of a perfect being, there is no reason why ours should be the single best possible world. Indeed, there is nothing about the actual world that makes it morally special. David Lewis notes,

It is true that our world alone is actual; but that does not make our world special, radically different from all other worlds . . . I suggest that 'actual' and its cognates should be analyzed as indexical terms;

terms whose reference varies depending on the relevant features of the context of utterance . . . ‘Actual’ is analogous to ‘here,’ ‘I,’ ‘you,’ ‘this’ . . . indexical terms depending for their reference respectively on the place, the speaker, the intended audience, the speaker’s acts of pointing, and the foregoing discourse.⁸

So the *Less-than-Best Problem* requires a moral argument that we are the individuals that *should* be enjoying the best possible experiences in the best possible world rather than the inhabitants of *w*. But there is no moral basis for distinguishing individuals in the actual world in this way.

Suppose there is an infinite sequence of improving worlds and no best possible world. Theists that endorse genuine modal realism must maintain that every possible world in the sequence is a real concrete universe and that at each possible world a perfect being actualized that world. The position entails that the individuals in the infinite sequence of possible worlds—including the actual world—are having valuable experiences in those worlds. And all of the valuable events, objects, states of affairs in the infinite sequence of possible worlds literally occur, exist, and obtain in those worlds. The totality of possible value is distributed and instantiated in a vast pattern of possible worlds. Given the infinite sequence of improving worlds, a perfect being actualizes at each world a real, concrete universe and every contingent thing of value in it.

The theistic modal realist solution to the *Less-than-Best Problem* maintains that there is no moral basis for the conclusion that a perfect being would have ensured that our world is the single best possible world. If there is a best possible world, then there are individual inhabitants of a real concrete universe enjoying the best possible experiences. If there is an infinite sequence of improving worlds, then no individual inhabitants of any world are enjoying the best possible experiences. But for every possible valuable experience in the sequence there are real individuals in various worlds enjoying them. In either case the *Less-than-Best Problem* is solved.

8.3 PLENITUDE PROBLEMS FOR THEISTIC MODAL REALISM

According to Lewis’s initial formulation of the *Principle of Plenitude*, absolutely every way that a world could possibly be is a way that some world is, and absolutely every way that a part of a world could possibly be is a way that some part of some world is.⁹ But to express the plenitude of possible worlds, Lewis appeals to a *Principle of Recombination*.

. . . according to [the principle of recombination] patching together of parts of different possible worlds yields another possible world. Roughly speaking, the principle is that anything can coexist with anything else,

at least provided that they occupy distinct spatiotemporal positions. Likewise anything can fail to coexist with anything else. Thus if there could be a dragon and there could be a unicorn, but there couldn't be a dragon and unicorn side by side, that would be an unacceptable gap in logical space, a failure of plenitude.¹⁰

The *Principle of Plenitude* is supposed to ensure that there are no gaps in logical space. There is some real concrete universe for every way a world could be. Of course it is difficult to know exactly how many ways a world could be, but the plurality of worlds would presumably include some worlds that are on balance extremely bad.¹¹ Otherwise there would again be an unacceptable gap.

Suppose then that w is an on-balance extremely bad world. According to Theodore Guleserian, a perfect being at w could have prevented w from becoming actual. "Presumably, an omnipotent being has the power to prevent any possible world from becoming actual, since all one has to do to prevent a world from becoming actual is to bring about some state of affairs that is not included in that world."¹²

So it is true at w that a perfect being actualizes w . Specifically it is true at w that a perfect being either brings about w or allows w to be actual. But then it must be true at w that a perfect being is morally permitted to actualize w . Perfect beings cannot perform any morally impermissible actions. But according to Guleserian, it is necessarily false that a perfect being is permitted to actualize w . "There is a possible world w such that necessarily [there is a perfect being in w] only if it is not morally permissible for [that being] to allow w to be actual."¹³ The problem then is that theistic modal realism entails that each possible world is a real concrete universe that a perfect being actualizes in that world. But the *Principle of Plenitude* entails that at least some of those worlds are so bad that no perfect being could actualize them. Theistic modal realism is therefore inconsistent with the *Principle of Plenitude*.

8.4 PLENTITUDE PROBLEMS RECONSIDERED

Theistic modal realists might decide to abandon the *Principle of Plenitude*. Thomas Morris has urged, for instance, that Anselmian theists should conclude that there are no possible worlds that a perfect being could not actualize.

. . . [An Anselmian] God is a delimiter of possibilities. If there is a being who exists necessarily and is necessarily omnipotent, omniscient, and good then many states of affairs which otherwise would represent genuine possibilities, and which by all non-theistic tests of logic and semantics do represent possibilities, are strictly impossible in the strongest sense.¹⁴

But the modal position Morris describes is question-begging. Even a modest position on the epistemic status of modal intuition urges that at least some possible worlds are on balance extremely bad. Morris's position is that, *for committed Anselmians*, the otherwise credible deliverances of modal intuition are not reliable guides to what is genuinely possible. But one of the questions at issue is whether anyone ought to be a committed Anselmian in the first place. And certainly modal intuition plays a large role in delimiting possibilities for those considering, or reasonably reconsidering, the possibility of an Anselmian God.

Theistic modal realists might urge instead that the sum total of value across the vast pattern of possible worlds is *on balance positive* or, at least, *on balance neutral*. On this view there are many real concrete universes that are on balance extremely bad and there are many real concrete universes that are on balance extremely good, but the sum total of value across all possible worlds is positive or neutral. And this position is consistent with the *Principle of Plenitude*. Theistic modal realists might then conclude that the existence of a perfect being is compatible with a sum total of value across worlds.

Is there any reason to believe that the sum total of value across all possible worlds is positive or neutral? The *Principle of Plenitude* seems to ensure that for any world w in which agents are enduring the quantity of suffering $-n$ there is another world w' in which their duplicates or counterparts are enjoying the quantity of pleasure $+n$. Generalizing on this basis it might not be entirely unreasonable to maintain that, on balance, the sum total of value is neutral.

But no doubt the deliverances of modal intuition are not especially reliable on this question. I have no intuition, for instance, that it's possible to sum the value across worlds. And even if it were possible, a theistic modal realist must still concede that some possible worlds are on balance extremely bad. More worrisome, they must concede that a perfect being might actualize such a world. Certainly theistic modal realists need some explanation of how a perfect being might actualize an on-balance very bad world.

8.5 PLENITUDE PROBLEMS RESOLVED

The traditional Anselmian God has at least the following attributes: essential moral perfection, essential omniscience, essential omnipotence, and necessary existence. Since the *Principle of Plenitude* entails that there are at least some worlds that are on balance very bad, we must conclude that the traditional Anselmian God exists in some worlds that are on balance very bad.

Let w be an on-balance very bad world. According to theistic modal realism, w is no different from the actual world ontologically. Both are concrete worlds containing various kinds of individuals instantiating various properties. The suffering and pain endured in w is no less bad than the

pain and suffering endured in our world. It is true at our world that the suffering endured is actual suffering. And of course it is true at w that the suffering endured at w is actual suffering. But Theodore Guleserian objects that a perfect being existing at w could have prevented the bad world w from becoming actual.¹⁵

It is true at w that a perfect being either brings about w or allows w to be actual. So it must be true at w that a perfect being is morally permitted to actualize w . Perfect beings cannot perform any morally impermissible actions. But Guleserian urges that it is false that a perfect being is permitted to actualize any world as bad as w .

The strong atheological conclusion that Guleserian defends is that there could not be an on-balance bad world w at which it is true that an Anselmian God actualized w . Call the strong atheological claim SA.

- SA. If an Anselmian God existed, then He would ensure that there is no on balance very bad world w at which it is true that God actualized w .

We have assumed that w is an on-balance very bad world. To make the problem more concrete, suppose Smith is a moral agent in w and Smith is suffering some terrible affliction. Suppose it is true in w that Smith is a good and just person. She is especially undeserving of the suffering she has endured. Assume further that the perfect being in w could have prevented all of the suffering Smith has endured without producing a greater evil or preventing a greater good. According to SA, it is false that an Anselmian God actualizes any world like w in which good and just moral agents suffer undeserved, preventable, and terrible afflictions.

Now suppose that the perfect being in w had brought about some state of affairs that is not included in that world. Suppose, for instance, that the perfect being in w had prevented all of Smith's undeserved suffering. Would it then have been true that there is no bad world w in which a moral agent no less good and just than Smith endures the same preventable suffering that Smith endures in w ? The unfortunate answer is no. It is necessarily true that there is a bad world w that includes a moral agent no less good and just than Smith that endures the same preventable suffering that Smith endures in w . So an Anselmian God simply could not ensure that there is no on-balance very bad world w at which good agents suffer undeserved evils. Call the necessity of preventable evil thesis PE.

- PE. It is impossible that there should fail to be a bad world w at which it is true that God exists and good and just moral agents endure undeserved and preventable suffering.

No matter what the perfect being in w had done or prevented or changed, it would be true that there is a bad world w that includes a perfect being that

actualizes w . No matter what the perfect being in w had done or prevented or changed, it would be true that there is a world in which a good and just moral agent endures undeserved and preventable suffering.

According to SA, an Anselmian God would be *morally forbidden* to actualize the world w in which Smith suffers undeservedly and preventably. But, necessarily, had the Anselmian God prevented the suffering of Smith in w , there would have been a moral equivalent of Smith enduring precisely the same undeserved and preventable suffering in world w .¹⁶ PE guarantees that in some world, some good and just moral agent would endure the same undeserved suffering as Smith. So it is morally forbidden for the Anselmian God to actualize the world w in which Smith suffers undeservedly *only if* there is some moral reason why the morally equivalent counterparts of Smith *ought* to endure the undeserved suffering rather than Smith. But the relevant counterparts of Smith are no more deserving and no less good than Smith. So there is no moral reason why any of the relevant counterparts ought to endure the suffering rather than Smith.

The Anselmian God can prevent each moral agent from suffering undeservedly and preventably in *each* world. But the Anselmian God cannot prevent each moral agent from suffering undeservedly and preventably in *every* world. The Anselmian God is in a position tragically similar to a lifeguard that can prevent each of two good and just persons from drowning but cannot prevent both good and just persons from drowning.¹⁶ Call that a *Lifeguard Situation*. In *Lifeguard Situations* a lifeguard is permitted to prevent one person from drowning at the dreadful cost of allowing another to drown only if the cost of one life is necessary to the preservation of any life. Theistic modal realists conclude that the Anselmian God is *permitted* to prevent a good and just moral agent from suffering undeservedly in every world in which he does so, even at the cost of allowing Smith to suffer undeservedly in w , provided that the cost is necessary.

8.6 IS GOD IN A LIFEGUARD SITUATION?

It is definitive of a *Lifeguard Situation* that some person P *can* save a person S and *can* save a person S' but *cannot* save both S and S' . Since it is impossible, the lifeguard is not morally required to actualize a world in which both S and S' are saved.

The Anselmian God can prevent the undeserved suffering of Smith in w and he can prevent the undeserved suffering of Smith's counterpart in w' , but he cannot prevent the undeserved suffering of both Smith and Smith's counterpart.

It might be objected that the Anselmian God ought not to be concerned about every moral agent that exists, but only about every moral agents that

actually exists. An Anselmian God that permits an actual moral agent to suffer undeservedly in order to prevent an existing, nonactual moral agent from suffering does something morally wrong.

But the objection that an Anselmian God ought not to be concerned about existing, nonactual moral agents entails that there is no conceptual difficulty with the suggestion that an essentially morally perfect being *might* simply allow a moral agent to suffer undeservedly and preventably. But of course it is false that an essentially morally perfect being might simply allow undeserved and preventable suffering. An essentially morally perfect being might permit undeserved and preventable suffering only if it is the necessary cost of preventing equally bad suffering. In particular, theistic modal realists argue that an essentially morally perfect being is permitted to prevent good and just moral agents from suffering undeservedly in every world in which he does so, at the necessary cost of allowing Smith to suffer undeservedly in *w*.¹⁷

8.7 LESS-THAN-BEST PROBLEMS RESOLVED

The theistic modal realist's solution to the *Less-than-Best Problem* concedes that our world is not the best possible world. It urges, however, that there is no moral basis for the conclusion that a perfect being would have ensured that the inhabitants of our world enjoy the best possible experiences in the best possible world. But suppose it is argued instead that a perfect being may not have made the actual world the best world it could be—the very best possible world might not even include counterparts for most of what is contained in our world—but he would at least have made the lives of rational and sentient beings in the actual world better.

It should be obvious that the theistic modal realist will again respond that a perfect being is morally permitted not to make the lives of our actual rational and sentient beings better. There is indeed some world *w'* in which a perfect being has improved the lives of the morally equivalent counterparts of our rational and sentient beings. Certainly, a perfect being *can* improve the lives of every actual rational and sentient being. Certainly, it would be a moral improvement if he did. But we know that, necessarily, some group or other of morally equivalent rational and sentient counterparts is such that their lives are not improved. It is impossible that a perfect being should improve the lives of every morally equivalent group of rational and sentient counterparts in every world. There is therefore no moral reason why a perfect being must improve the lives of all actual rational and sentient beings rather than improve the lives of their morally equivalent counterparts. The theistic modal realist contends again that the perfect being is in circumstances tragically similar to the unfortunate lifeguard that can rescue each drowning swimmer, but horribly cannot rescue all.

8.8 PLANTINGAN MODAL REALISM AND THEISTIC MODAL REALISM

Theistic Modal Realism has obvious advantages in resolving the *Less-than-Best Problem*, the *Modal Problem of Evil*, the *No Best World Problem*, and other issues in the metaphysics of Anselmian perfect beings. But it comes at what many regard as an extravagant price. The extravagant price includes infinitely many concrete possible worlds ontologically on a par with the actual world. In addition to that, the modal metaphysics of these theistic realists makes it impossible for a single world to include many spatiotemporally isolated parts. Recall that for these modal realists every possible world is a causally and spatiotemporally closed individual. Since possible worlds are spatiotemporally individuated, there are no single worlds that include spatiotemporally isolated island universes. The conclusion is unhappy for multiverse solutions to the *Less-than-Best Problem*. All multiverse solutions appeal to the possibility of island universes.

Among the prominent alternatives to *Theistic Modal Realism* is the modal metaphysics of Alvin Plantinga. *Plantingan Modal Realism* includes a commitment to a very large modal reality. Indeed, it embraces the metaphysical consequences of all three grades of Quinean modal involvement. Any object that has an accidental property in any world w —say the property of being the world’s fastest human—also has the modal property of being possibly the world’s fastest human and the modal property of being necessarily the world’s fastest human in w . In fact, for every concrete object x there is some property P and some world w such that w includes x ’s having P . In addition, Plantinga’s realism countenances modal properties of propositions, properties, and states of affairs. Among the properties of states of affairs is the modal property of being possibly maximal and consistent. And for Plantinga, these maximally consistent states of affairs are possible worlds.

Plantingan Modal Realism contrasts sharply with *Theistic Modal Realism* on the nature of possible worlds. Relative to every salient demarcation criterion, Plantinga’s possible worlds are abstract objects. But relative to the same demarcation criteria, the worlds of *Theistic Modal Realism* are concrete objects.¹⁸ Further for *Theistic Modal Realism*, each possible world is the mereological sum of its parts. These parts are themselves concrete individuals standing in certain spatiotemporal relations to one another. But for *Plantingan Modal Realism* possible worlds are simple abstract objects containing no parts at all. It is true that worlds *represent* complex states of affairs but they are not themselves complex.

Theistic Modal Realism does not allow any *overlap* among possible worlds. No objects are present at more than one world. Here is Lewis.

A possible world has parts, namely possible individuals. If two things are parts of the same world, I call them worldmates. A world is the

mereological sum of all the possible individuals that are parts of it, and so are worldmates of one another. It is a maximal sum: anything that is a worldmate of any part of it is itself a part. This is just a consequence of my denial that worlds overlap.¹⁹

Indeed, the consistency of assertions such as Humphrey lost the election in 1968 and Humphrey might have won the election in 1968 depends on the assumption that all individuals are worldbound.

According to *Theistic Modal Realism*, there are no multiverses, but the assumption of worldbound individuals does make possible *quasi-multiverses*.

There are no disconnected space-times within single worlds. But there can be large worlds that have spatiotemporally related worldlike parts. In fact, each worldlike part might duplicate, or nearly duplicate, other possible worlds.²⁰ There might actually exist counterparts or duplicates of every actual rational and sentient being in various other worldlike parts of our world. Since these counterparts and duplicates are numerically distinct from any other actually existing individual, there is no concern about the consistency of such quasi-multiverses.

Plantingan Modal Realism does allow overlap among possible worlds. In some possible worlds Socrates—the very Socrates that was married to Xantippe—was not married at all. “For clearly every possible world including Socrates being a carpenter also includes Socrates existing; each such world is such that, if it had been actual, Socrates would have existed. So Socrates exists in many possible worlds.”²¹

Of course there are also worlds in which Aristotle exists and is a Stoic philosopher and others in which Plato exists and is a weightlifter. Indeed, every person, number, particle, wave, lepton, spirit, property, proposition, and state of affairs exists in countless other possible worlds.

The existence of individuals across countless worlds makes at least some multiverses impossible. There is a world w in which Socrates is married to Xantippe and a world w' in which Socrates is not married to Xantippe. But there could be no multiverse including both w and w' . And generally there are no multiverses that locate individual persons, particles, leptons, waves, or spirits in multiple universes. And there are other worries about properties, propositions, and states of affairs—things existing in every possible world—requiring additional restrictions on the multiverses that are possible for *Plantingan Modal Realism*.

According to *Theistic Modal Realism*, there are no genuine multiverses, since possible worlds are individuated spatiotemporally. So there are no single worlds that include spatiotemporally isolated island universes. But it is not obvious that *Plantingan Modal Realism* does any better. It is not obvious, for instance, that *Plantingan Modal Realism* can consistently represent the kinds of worlds required for a multiverse solution to the *Less-than-Best Problem*.²²

8.9 TURNER'S MULTIVERSE SOLUTION

Donald Turner's multiverse solution to the *Less than Best Problem* assumes a Plantingan modal metaphysics according to which possible worlds are maximally consistent states of affairs.

Other philosophers treat possible worlds as abstract objects, as maximal or complete possible states of affairs. On this view the word 'world' is ambiguous. It is sometimes used to refer to maximal possible states of affairs and it is sometimes used to refer to a concrete instantiation of such a way that things could be. Here, the word 'world' will be restricted to maximal possible states of affairs. In this sense possible worlds necessarily exist; thus we speak not of creating a possible world, but of actualizing a possible world which will involve creating an instantiation of that world . . . A universe will be the instantiation of a possible world.²³

But according to Turner, there are both *simple possible worlds* and *complex possible worlds*.

Let us call a possible world with a single maximal spatiotemporal aggregate a 'simple world' and call a possible world with multiple spatiotemporal aggregates a 'complex world.' . . . A cosmos [or universe] then will be the instantiation of a simple possible world. Let us call the instantiation of a complex world a 'multiverse.'²⁴

Multiple maximal spatiotemporal aggregates are collections of spatiotemporally isolated universes or what Turner calls a "multiverse" or "cosmoi." These cosmoi are the instantiations or actualizations of a complex world. Here's Turner.

Perhaps all good possible universes exist because it would be best if reality were that way. By itself the fact that it would be best if reality were a certain way does not seem to be a good explanation for why reality is that way. But if a wholly good and omnipotent God exists, then the fact that it would be best if created reality were a certain way does explain why created reality would be that way. The source of selection from among possible universe ensembles would be the possible universe ensemble that would be best. Thus I claim that God ought to actualize that complex possible world which contains cosmoi corresponding to every simple possible world above some cut-off line—for example, every simple possible world with a favorable balance of good over evil.²⁵

There is something *prima facie* unusual in the suggestion that the actual world includes cosmoi that correspond to every simple possible world that is on balance good. According to *Plantingan Modal Realism*, there is a

maximal or saturated set of propositions S corresponding to each possible world w . The set S is just the complete description of w . But then for any world w' distinct from w there is a saturated set of propositions S' such that S' is inconsistent with S . Turner's proposal that there actually exists a complex world seems to entail that any number of logically inconsistent propositions are all actually true. That of course is *prima facie* impossible. Plantinga offers a similar argument.

Of course *the actual world* is one of the possible worlds; it is the maximal possible state of affairs that is actual, that has the distinction of actually obtaining. Obviously *at least* one possible world obtains. Equally obviously *at most* one obtains; for suppose two worlds w and w^* both obtained. Since w and w^* are distinct worlds there will be some state of affairs S such that w includes S and w^* precludes S . But then if both w and w^* are actual S both obtains and does not obtain; and this, as they say, is repugnant to the intellect.²⁶

Turner does not address the question of how logical contradiction is avoided except to note that individual universes in the multiverse are spatiotemporally isolated. He seems to have in mind that truth in the actual world is better understood as *truth-at-a-cosmos* in the actual world. And since no cosmos can include inconsistent states of affairs, it should be clear that the actual multiverse is not itself a single (super) cosmos and that cosmoi in the multiverse do not overlap.

Turner's Multiverse Solution provides an interesting solution to the *Less-than-Best Problem*. Turner assumes that our universe is among the possible universes that are on balance good and that a perfect being ought to actualize every universe that is on balance good. Of course, if a perfect being would actualize the best possible world, then he must actualize every universe that is either on balance good or on balance neutral. But every universe that is on balance good or neutral is actualized only if the total sum of value M_v in the actual multiverse is as great as possible. And for every actual evil event, object, or state of affairs, $e_1 \ \& \ e_2 \ \& \ \dots \ \& \ e_n$, in the multiverse, it is necessarily true that $\sim(e_1 \ \& \ e_2 \ \& \ \dots \ \& \ e_n)$ only if the sum total of actual value is *less than* M_v .

So it is necessarily true that a perfect being prevents a single instance of evil only if the sum total of actual value is not as great as possible. We arrive at the conclusion that the actual multiverse includes the greatest possible amount of overall value M_v and that every instance of evil is necessary to the actualization of M_v .

If there is an infinite sequence of improving worlds, then every universe in the sequence that is on balance good or neutral is a member of the actual multiverse. And every event, object, and state of affairs that occurs, exists, and obtains in every member of the actual multiverse—including every event, object, and state of affairs in our particular universe—is necessary to

the realization of the greatest amount of overall value M_v . That concludes *Turner's Multiverse Solution* to the *Less-than-Best Problem*. A perfect being actualized a multiverse that is the best possible and every instance of evil in the multiverse is an instance of justified evil.

8.10 ARE THERE COMPLEX POSSIBLE WORLDS?

We noted earlier that among the properties of states of affairs is the modal property of being possibly maximal and consistent. And *Plantingan Modal Realism* maintains that possible worlds just are maximally consistent states of affairs. Let w be a maximally consistent state of affairs that is on balance good. According to Turner, w “corresponds to” a cosmos in a complex world. “I claim that God ought to actualize that complex possible world which contains cosmoi corresponding to every simple possible world above some cut-off line—for example, every simple possible world with a favorable balance of good over evil.”²⁷

It is not entirely clear how a complex possible world is supposed to *contain* a cosmos. For Turner, possible worlds are unactualized maximal states of affairs. But a cosmos is the instantiation of a simple possible world. It is confusing to speak of a uninstantiated maximal state of affairs *containing* an instantiated maximal state of affairs.

What Turner is suggesting, presumably, is that there is a complex world W that includes many spatiotemporally isolated simple worlds w . Indeed, there is alleged to be a complex world W that includes *every* on-balance good, simple world w . But how is this possible? No simple world w can be both included in complex world W and not included in complex world W . Turner might be supposing that there's some complex world W that includes every simple on-balance good world w . This entails that there are no on-balance simple worlds that are not included in a multiverse W . Call that the *Wonderful Complex World* assumption.

Perhaps Turner has in mind that for every on-balance good, simple world w there is a nonidentical and qualitatively nearly indiscernible world w' that is included in some complex world W . Perhaps the only differences between w and w' are some minor qualitative properties of some elementary particles. There is perhaps some lepton in w that differs only in minor qualitative properties from a lepton in w' . On this view there are many maximally consistent states of affairs w' that are qualitatively nearly indiscernible from simple worlds w , every world w' is on balance good, and every w' overlaps simple worlds w with respect to every necessarily existing being and some contingently existing beings. Turner might be assuming that every world w' is included in W . This entails that there are no w' that are not included in multiverse W . Call that the *Wonderful Complex Indiscernible World* assumption.

Which of these assumptions is more plausible? The *Wonderful Complex World* assumption seems implausible. Why believe that every simple

on-balance good world is included in some single multiverse W ? Why not believe instead that the simple on-balance good worlds are spread out among many multiverses or included in no multiverses at all? Obviously these cannot all be true.

But the *Wonderful Complex Indiscernible World* assumption is not any more plausible. Why believe that, for every simple on-balance good world w , there is some nearly indiscernible world w' that is included in some single multiverse W ? Why not believe instead that the nearly indiscernible on-balance good worlds are spread out among many multiverses or included in no multiverses at all? Obviously, these cannot all be true.

Turner's Multiverse Solution might best be understood as advancing the weak thesis that the *Wonderful Complex World* assumption is an epistemic possibility. It doesn't seem unfair to propose that, for all we know, the *Wonderful Complex World* assumption is true. Indeed, it does not seem unfair to propose that, for all we know, our world is a wonderful complex world.

8.11 ISLAND UNIVERSES AND THE BEST MULTIVERSE

There is a simple argument that there is a best multiverse. The argument assumes that every universe or cosmos is either on balance good, on balance bad, or on balance neutral.²⁸ Let U be the set of all on-balance good universes and all on-balance neutral universes. Let U^* be the set of all on-balance bad universes. Suppose a perfect being actualizes a multiverse W that includes every member of U . The standard claim is that W is the best possible world.

Suppose for *reductio* that W is not the best possible world. In that case some member u' of U^* is such that the value of $u' + W (= W^*)$ is at least as great as the value of W . Of course, the value of W^* is at least as great as W only if u' is not on balance bad. But every member of U^* is on balance bad, so we can be sure that u' is also on balance bad. Therefore W^* is not at least as great as W . So W is the best possible world.

The argument is evidently too simple. The most salient problem is that there is no guarantee that there is such a multiverse W . There is no guarantee that the *Wonderful Complex World* assumption is true. But there is a larger worry. There is a guarantee that the universes in U are *compossible*. We assumed that the universes in U are all on balance good or neutral. But it is impossible that any universes in U should form the spatiotemporally isolated island universes of W unless no two universes in U overlap with respect to persons, events, objects, or states of affairs, among many other things.

Suppose, for instance, there are two universes u and u' in U that share some hydrogen atoms in common. Since universes that overlap in any respect are not compossible, it is impossible that u and u' are island universes in W . But then there is no possible world W in which every member u of U is actualized.

There would be little to worry about if possible worlds simply did not overlap at all. But there is very good reason to believe that there is overlap

among the universes that are on balance good. Suppose the actual universe u is an on-balance good universe in U . Now consider whether there is a universe u' exactly like u except that some rational and sentient beings in u are slightly better off in u' . It is difficult to deny that some actual rational and sentient beings might have been slightly better off. But then, if we take this conclusion at face value, there are at least members of U that overlap with respect to some rational and sentient beings. Universes u and u' are therefore not compossible. We can state the restriction on nonoverlapping, compossible universes generally. For any universes u and u' of U , u and u' are compossible only if u and u' do not overlap.

The generalization is immensely problematic for the position that there is some world W at which every u of U is actualized. The problem is that every *necessarily existing being* is in every universe in U , and so every universe in U overlaps every other. The set of necessarily existing beings will include properties, sets, states of affairs, propositions, God, numbers, and so forth. Consider the true *de re* necessity that there is something such that necessarily that thing is identical to the property of being red. The property of being red itself has different properties in different worlds. In some worlds the property of being red has the property of not being instantiated. In other possible worlds it has the property of being multiply instantiated. But there is obviously no multiverse that includes an island universe u where the property of being red has the property of not being instantiated and another island universe u' in which the *very same* property of being red has the property of being multiply instantiated. So those universes are not compossible.

Consider also the true *de re* necessity that there is some being such that necessarily that being is identical to the perfect being. In some worlds that perfect being has the property of always acting providentially. In other worlds that perfect being has the property of rarely acting providentially. But there is obviously no world that includes an island universe u where a perfect being has the property of always acting providentially and another island universe u' in which the *very same* perfect being has the property of rarely acting providentially. So those universes are not compossible.

One resolution of these difficulties might urge that we index the properties of perfect beings and properties to worlds. We should then identify the property of always acting providentially with the property of always acting providentially in w . A perfect being might have both the property of always acting providentially in w and the property of rarely acting providentially in w . Similarly, we should identify the property of not being instantiated with the property of not being instantiated in w . The property of being red might instantiate both the property of not being instantiated in w and the property of being multiply instantiated in w' . But it is evident that these properties are not identical. They are not even mutually entailing. The property of always acting providentially, for

instance, is not identical to the property of always acting providentially in w . The latter is an essential property that perfect beings instantiate in every possible world. The former is a contingent property that perfect beings instantiate in some worlds but not others.²⁹ Even in worlds where a perfect being rarely acts providentially, he instantiates the property of always acting providentially in w .

Every on-balance good or neutral universe overlaps with every other on-balance good or neutral universe. So it is not obvious how more than one universe u of U might be in a single multiverse W . But if there are no multiverses at all, then there is obviously no best multiverse.

8.12 POINTLESS EVIL, NECESSITARIANISM, AND FATALISTIC COSMOI

Suppose a perfect being actualized the multiverse W . Consider any cosmos u in the actual multiverse W that contains total good u_G and total evil u_E . Since u is a member of the actual multiverse, we know that $(u_G - u_E) > 0$ or that u is on balance good. Now consider some amount of evil $u_{E'} = \frac{1}{2}(u_G - u_E)$ that is causally and logically independent of every event, object, and state of affairs in u . The universe u' that results from adding the evil $u_{E'}$ to the universe u is also a member of the actual multiverse. We know that u' is also on balance good since the overall value of $u' = (u_G - (u_E + u_{E'})) > 0$. The universe u' is on balance good and every universe that is on balance good is a member of the actual multiverse.

So there is a member u' of the actual multiverse that contains at least some evil $u_{E'}$ that is *causally and logically independent* of every event, object, and state of affairs in u' . But then the evil $u_{E'}$ obviously serves no purpose in u' . It is perfectly possible to remove $u_{E'}$ from u' without the loss of any positive value in u' .

Since a perfect being might have prevented $u_{E'}$ in u' without any moral cost, the standard account of gratuitous evil would categorize $u_{E'}$ as an instance of gratuitous evil. But *Turner's Multiverse Solution* entails that $u_{E'}$ is not an instance of gratuitous evil. According to *Turner's Multiverse Solution*, a perfect being cannot prevent $u_{E'}$ from occurring in the actual multiverse without either failing to actualize u' or replacing u' with an on-balance bad world u'' . But both failing to actualize u' and substituting u'' for u' in the actual multiverse entail that the total amount of actual value is less than the greatest possible amount of value M_v . Since a perfect being must actualize the best possible complex world, it is *impossible* that a perfect being prevents $u_{E'}$.

Suppose $u_{E'}$ is William Rowe's well-known isolated and painful death of a fawn. The isolated and painful death is justified, according to *Turner's Multiverse Solution*, if $u_{E'}$ occurs in some world that is on balance good. A perfect being could not prevent the isolated and painful death of the

fawn without failing to actualize a world that is on balance good. But it is impossible that a perfect being should fail to actualize a world that is on balance good. Therefore it is impossible to prevent the isolated and painful death of the fawn. Indeed, the isolated and painful death of the fawn cannot be shortened or modified in any way without actualizing a less-than-best multiverse. And that's impossible.

Turner's Multiverse Solution in fact entails that every instance of actual evil is necessary to the actualization of the best possible multiverse. A perfect being is therefore justified in permitting every instance of actual evil. But the multiverse solution to the problem of evil generalizes in very problematic ways. Let u_E be a proposition stating that there exists an instance of actual evil, let M_v be the total value of the actual multiverse, and let \Box represent logical necessity. Finally, let AM_v represent the proposition that a perfect being brings about the total value of the actual multiverse. The response to the problem of evil in *Turner's Multiverse Solution* is the following argument.

1. $\Box (AM_v \supset u_E)$
2. $\Box AM_v$
3. $\therefore \Box u_E$

According to premise (1), if every possible world that is on balance good is actualized or (equivalently) the greatest total value is actualized, then some evil is actualized. Premise (2) follows from the assumption that a perfect being must actualize the best possible multiverse or the greatest total value. According to premise (2), it is necessary that a perfect being actualizes every possible world that is on balance good. But then (3) follows straightforwardly. The conclusion states that necessarily the instance of evil u_E is actual.

Of course the argument generalizes to every instance of actual evil, and every actual evil is therefore justified evil. But the argument also generalizes to every event, object, and state of affairs that occurs, exists, and obtains in the actual multiverse. *Turner's Multiverse Solution* entails *Necessitarianism*. Necessitarianism is the (false) position that there is exactly one possible world. The thesis entails the equally implausible philosophical thesis known as fatalism. According to fatalists, everything that does occur unavoidably occurs. But it is consistent with fatalism that there should be many possible worlds which only a divine being could bring about. Necessitarianism is the far more austere thesis that not even the most insignificant event could have been different.³⁰

Let p be a true proposition stating that Smith scratches his left ear on Thursday. *Turner's Multiverse Solution* entails that necessarily Smith scratches his left ear on Thursday. And in general every event, object, and state of affairs in the actual multiverse necessarily occurs, exists, and obtains.

- 1'. $\Box (AM_v \supset p)$
- 2'. $\Box AM_v$
- 3'. $\therefore \Box p$

We arrive at the incredible conclusion that necessitarianism is true. The actual multiverse is a fatalistic complex world. Everything that does happen in the actual multiverse—no matter how insignificant—*necessarily happens* in the actual multiverse. Everything that exists in the actual multiverse necessarily exists. And everything that obtains in the actual universe necessarily obtains. The bizarre consequence of *Turner's Multiverse Solution* is that the actual complex world is the exclusive possible world. Everything that's possible is actual.

Suppose for *reductio ad absurdum* there were some possible world w and some state of affairs p in w that was not actual. It would then be true at the actual complex world that $\sim p$ and $\diamond p$. But a perfect being could not bring about p without actualizing a less than best multiverse. That's impossible. So we know that we know that $\sim p$ only if $\Box \sim p$ or $\sim \diamond p$. But then we have derived the contradiction $\diamond p$ and $\sim \diamond p$. Therefore there is no possible world w and state of affairs p in w that is not actual. And it follows that everything that is possible is actual.

Of course the necessitarian conclusion is wildly implausible. In necessitarian worlds there is obviously no free will and no moral responsibility. In necessitarian worlds there is no agency, no basis for self-respect, or moral praise or blame. And aside from the moral costs of *Turner's Multiverse Solution*, there is the bizarre fatalistic metaphysical consequence. But certainly the limits of logical possibility are not reached in the actual world. It is fair to conclude that *Turner's Multiverse Solution* provides a costly and inadequate response to the *Less-than-Best Problem*.

8.13 INTERLUDE: PARFIT'S ALL-WORLDS HYPOTHESIS

We know that among possible worlds there are some that are complex worlds and some that are simple worlds. An actualized complex world is a cosmoi or multiverse. But consider the complex world W_A that includes *every* maximal spatiotemporal aggregate—every independent universe—and also every aggregate of maximal spatiotemporal aggregates—every independent cosmoi or multiverse. The actualization of the world W_A is the instantiation of every possible world.

Derek Parfit and Robert Nozick have each proposed the hypothesis that W_A is actual. Parfit calls that the *All-Worlds Hypothesis* and Nozick calls it the *Fecundity Assumption*. Every universe and multiverse in W_A corresponds to a possible world, and every possible world corresponds to some universe or multiverse in W_A . The hypothesis that Nozick and Parfit have in mind is that every possible world is actual.³¹

Parfit urges that the *Less-than-Best Problem* is resolved under the assumption of the *All-Worlds Hypothesis*.

. . . Suppose, most simply, that *all* possible universes were actual. [The question ‘Why is the Universe as it is?’] would then disappear. If ours is the only actual universe, it makes sense to ask ‘Why is the Universe the way it is?’ since we are then asking ‘Out of all of the possibilities, why is this the one that is actual?’ But if all possibilities were actual, there would be no such question. Nor could we sensibly ask, ‘Why is our Universe the one it is?’ That would be like asking ‘Why are *we* who we are?’ or ‘Why is it now the time that it is?’ And it would not be surprising that our universe was one of those where life is possible.³²

But could a perfectly good being have actualized every possible world or W_A ? It certainly seems true that actualizing W_A helps to explain why there is anything at all.

. . . this [All-Worlds Hypothesis] would also make question (1), [‘Why does the Universe exist at all?’], less puzzling. If all possibilities were actual this would need less explanation than if only one was actual. But we could still ask, ‘Why is anything actual?’ ‘Why is there anything rather than nothing?’³³

Nozick goes even further in suggesting that among the actualized possible worlds we should countenance one consisting in nothing at all. “Consider the question ‘why isn’t there nothing?’ There *is* nothing—that is one of the separate possibilities that is realized . . . Why is there something rather than nothing? There isn’t. There’s both.”³⁴

But suppose it is argued that in actualizing W_A a perfect being fails to actualize the world consisting in every cosmos that is on balance good. In fact the world W_g consisting in every cosmos that is on balance good is a part of W_A . And it is true at W_g that every actual cosmos is on balance good. So a perfect being that actualizes W_A does not fail to actualize the world W_g consisting in every cosmos that is on balance good. Of course a perfect being that actualizes W_A also does not fail to actualize the world W_b consisting in every cosmos that is on balance bad. And it is true at W_b that every actual cosmos is on balance bad.

It is important to keep in mind that W_g and W_b are individual worlds in the set of all possible worlds. A theistic *All-Worlds Hypothesis* would entail that W_g and W_b are both actual. From the point of view of W_A , it is true that a perfect being actualized every possible universe and multiverse. If the best way to determine whether a perfect being exists is to consider the point of view of every possible world, then the *All-Worlds Hypothesis* is clearly not compatible with the existence of a perfect being. The theistic view of the *All-Worlds Hypothesis* entails, among other things, the incredible consequence

that a perfect being actualized every world that is on balance bad and also that a perfect being actualized nothing at all.

8.14 INTERLUDE: INFINITELY VALUABLE WORLDS

The argument against *Turner's Multiverse Solution* to the *Less-than-Best Problem* seems to depend on the assumption that the total value M_v of the actual multiverse is finite and additive. But the actual multiverse consists in every possible cosmos that is on balance good. So it's extremely unlikely that the total value of the actual multiverse is finite.

Reconsider the argument against *Turner's Multiverse Solution*. We let p be a true proposition stating that Smith scratches his left ear on Thursday. M_v is the total value of the actual multiverse and represents logical necessity. Further, AM_v represents the proposition that a perfect being brings about the total value of the actual multiverse. *Turner's Multiverse Solution* entails that necessarily Smith scratches his left ear on Thursday.

- 1'. $\Box (AM_v \supset p)$
- 2'. $\Box AM_v$
- 3'. $\therefore \Box p$

And we arrived at the general conclusion that everything that happens in the actual multiverse *necessarily happens* in the actual multiverse.

But consider this plausible response. M_v is an infinite positive value only if premise (1') in the argument is false. Let M_v be some infinite positive value ∞ and let v be the value of the set of worlds at which p is true. It follows that $M_v = \infty$ only if $(M_v - v) = \infty$. Subtracting the value of the worlds at which p is true from M_v does not lessen the value of M_v . But then a perfect being might realize the greatest possible value M_v and actualize no p -worlds at all. But then premise (1') is false.

The response assumes that the correct representation of the infinite value in M_v can be found in standard Cantorian infinities. But it is well known that addition and subtraction are not well defined for standard Cantorian infinities. Roy Sorensen observes,

Unlike finite numbers, infinite numbers are reflexive: adding one does not increase them. For instance $\{1, 2, 3, \dots\}$ can be put into a one-to-one correspondence with $\{0, 1, 2, \dots\}$. More dramatically even the addition of an infinite set of new members need not increase the size of the original set: the even numbers can be put into a one-to-one correspondence with the natural numbers \dots . Thus subtracting the infinite set of odd numbers from the set of natural numbers yields an equally large set \dots . A tycoon who has a dollar for each natural number can afford to give every other dollar to the government. Indeed a tax rate that soaks the rich for 99 out of 100 dollars leaves the *infinitaire* equally rich.³⁵

The Cantorian representation of infinite value has some obviously counterintuitive consequences. In particular the representation does not properly reflect the aggregation of value. Compare, for instance, the sequences in worlds w_1 and w_2 of temporal locations that are loci of value. Assume that time is discrete and has no beginning or end. Suppose that the two worlds w_1 and w_2 differ with respect to the goodness located at individual times as follows.

$$w_1 \dots, 10, 10, 10, 10, 10, 10, 10, 10, 10, \dots$$

$$w_2 \dots, 1, 1, 1, 1, 1, 1, 1, 1, 1, \dots$$

World w_1 certainly appears on balance better than w_2 . But this is not true under a Cantorian representation. For any Cantorian infinite n , it is true that $(n \times 10) = (n \times 1)$, and we are led to conclude that the total value of w_1 equals the total value of w_2 .³⁶

There are of course nonstandard mathematical representations of infinite value according to which addition and subtraction of infinite numbers is well defined. In fact, nonstandard representations make all of the simple operations of arithmetic well defined for infinite numbers. For instance, if the sum of value in w_2 is an infinite integer n , then the addition of one more unit of value on the nonstandard representation is the larger number $n + 1$. So a nonstandard approach gets the intuitive result that w_1 is better than w_2 .³⁷ Nonstandard approaches to the infinite have been well received since at least the mid-sixties.³⁸ One fascinating nonstandard approach is John Conway's analysis of *surreal* numbers.³⁹ Conway identifies every number with two sets of previously constructed numbers: a left set and a right set. No member of the left set is greater than or equal to any member of the right set. The constructed number lies between the members of the left set and the members of the right set. For instance, Conway begins the construction with the number whose left set and right set is empty, $\langle \emptyset, \emptyset \rangle$. This of course is identified with 0. The next number constructed is $\langle \{0\}, \emptyset \rangle$ and is called 1, and naturally $\langle \{1\}, \{0\} \rangle$ is called 2, and so on. After infinitely many stages we reach the first infinite number ω whose left set is the natural numbers and whose right set is empty, $\langle \{0, 1, 2, 3, \dots\}, \emptyset \rangle$. At the next stage we reach $\omega + 1 = \langle 0, 1, 2, 3, \dots, \omega, \emptyset \rangle$ and up to ω^2 and ω^ω , and so on. The resulting system of numbers is closed under addition, subtraction, multiplication, division, and so on. And every number is greater than, less than, or equal to every other.

It is not difficult to resolve the problems presented by the infinite value of multiverses with a representation in surreal numbers. Recall that M_v is some infinite positive value ∞ and v is the value of the set of worlds at which p is true. The problem for Cantorian representations was that $M_v = \infty$ only if $(M_v - v) = \infty$. But of course this is not true for the representation in surreal numbers. For surreal infinites, subtracting the value of the worlds at which p is true from M_v does lessen the value of M_v . But then a perfect being cannot

realize the greatest possible value M_v and fail to actualize any p-worlds. So we have no basis for rejecting premise (1').

There are other approaches to determining the relative goodness of infinitely valuable worlds. Shelly Kagan and Peter Vallentyne propose the additive metaprinciple SBI1, for instance.

SBI1. If (1) w_1 and w_2 have exactly the same locations and (2) for any finite set of locations there is a (restricted) finite expansion and some positive number k such that, relative to all further finite expansions, w_1 is k -better than w_2 , then w_1 is better than w_2 .⁴⁰

The intuitive idea is that w_1 is better than w_2 if there is some finite sequence of value locations after which the addition of any further finite sequence of value locations sums to a greater value in w_1 than in w_2 .

It is a simple procedure to derive an intuitive metaprinciple applicable to *complex worlds* w_1 and w_2 containing infinitely many universes as their location points. Restricting SBI1 to complex worlds, we arrive at SBI2.

SBI2. If (1) w_1 and w_2 are complex worlds that have exactly the same locations and (2) for any finite set of locations there is a (restricted) finite expansion and some positive number k such that, relative to all further finite expansions, w_1 is k -better than w_2 , then w_1 is better than w_2 .

According to the metaprinciple SBI2, the world that contains every on-balance good universe is the best complex world. A complex world W having an on-balance good universe at every value location is certain to have some finite expansion and some positive k such that relative to all further finite expansions in any complex world $W' \neq W$, W is k -better than W' . It is easy to see that for any relevant complex world W' distinct from W , W' will contain infinitely many universes *none* of which is on balance good. If we let the value of an on-balance good world equal 1 and the value of an on-balance bad world equal 0, it's evident that, according to SBI2, W is better than all such W'

$W \dots, 1, 1, 1, 1, 1, 1, 1, 1, 1, \dots$

$W' \dots, 0, 0, 0, 0, 0, 0, 0, 0, 0, \dots$

Every universe in W has some value k greater than 0, and each universe in W will therefore be at least k -better than the corresponding universe in W'

There are certainly alternative ways to represent the relative goodness of infinitely valuable complex worlds. Turner, for instance, makes the following suggestion.

So how does God choose which multiverse to create? Recall . . . that God plus the universe is in some sense no better than God alone, and yet God creates. While the cardinality of the rational numbers is the

same as the cardinality of the integers there is also an intuitive sense in which there are more rational numbers, since the integers are a proper subset of the rational numbers. . . . Rather than trying to look at the numerical value of God's creation, we must look at each simple possible world individually. God will create a cosmos corresponding to that simple possible world if it is better that it exists than not.⁴¹

But SBI2 offers a principled approach to representing the relative goodness of infinitely valuable worlds. Suppose we return again to the argument against *Turner's Multiverse Solution*.

- 1'. $\Box (AM_v \supset p)$
- 2'. $\Box AM_v$
- 3'. $\therefore \Box p$

From (1') and (2') we arrived at the general conclusion that the actual multiverse is a necessitarian world or a fatalistic cosmos. The response to this argument against *Turner's Multiverse Solution* claimed that subtracting the value of the worlds at which p is true from M_v does not lessen the value of M_v . But that response fails. The metaprinciple SBI2 entails that a cosmos consisting in every universe that is on balance good is both *infinitely valuable and more valuable than* any cosmos that consists in every *non- p universe* that is on balance good. Subtracting the p -universes from M_v does lessen the value of M_v . So *Turner's Multiverse Solution* does have the implausible consequence that the actual multiverse is a fatalistic cosmos.

8.15 HUDSON'S HYPERSPACE SOLUTION

According to Hudson, there are good metaphysical reasons to believe that the actual world is a *plenitudinous hyperspace*. A plenitudinous hyperspace is a collection of many independent three-dimensional subregions in a connected four-dimensional manifold. Each subregion is located at a determinate distance from the others, but there is no *direction* at which any subregion is located from any other. There is no fourth dimension within any region; rather, each three-space region is embedded in four-space. Further, each region is fully independent and nonoverlapping. The regions might be governed by different causal laws, contain only silicon-based beings, or silicon- and carbon-based beings, contain no inhabitants at all, and so on. And everything in a three-dimensional region is confined—though not necessarily confined—to its own three-dimensional cross section of space.

Compare a plenitudinous three-dimensional space that is a collection of many independent two-dimensional subregions. Let each two-dimensional subregion be called a *Flatland*.

The two-dimensional inhabitants of [some] Flatland may move left and right or forth and back, but not up and down (at least not by their own power). [Suppose a] hermit [in some Flatland] prides himself on keeping at least eight inches away from any other polygon. Alas our hermit does not realize that the plane on which he lives and moves is but one of an uncountably infinite stack of such planes. Our unfortunate hermit is embedded in three-space and has no idea that he is . . . only an inch away from another hermit similarly confined to her plane (i.e. confined to a plane parallel to and an inch away from our hermit's. Our hermit can acquire no evidence of this proximity through investigation of his own, however, and so never becomes anxious about his condition . . . Now suppose you and I are embedded in four-space, yet live and move about in our own three-space cross-section. This supposition, I maintain, is metaphysically possible.⁴²

On perfect analogy with the Flatlanders, there might be stacked uncountably many nonoverlapping three-spaces embedded in four-dimensional space. Indeed, there might be inhabitants in uncountably many three-dimensional subregions closer to you than any inhabitant in your own subregion. Of course, you cannot get to them on your own and you cannot so much as point in their direction. On the other hand, Hudson observes that some friendly four-spacer might help you reach the inhabitants in some other three-space subregion. Compare: we three-spacers could move the two-dimensional hermit from one Flatland and into another. But as Hudson notes it would be extremely difficult to return him to his own plane. Recall there are uncountably many two-dimensional planes in three-space.⁴³

According to Hudson, the *Less-than-Best Problem* presents theists with good reason to conclude that a perfect being actualized a plenitudinous hyperspace. Leibnizians, we know, claim that a perfect being *must* actualize the best possible world. A plenitudinous hyperspace provides a good sense in which a perfect being might have actualized the best possible world.

. . . I am suggesting . . . that the many independent regions of a plenitudinous hyperspace provide [the hyperspace] theorist with the resources to affirm a perfectly good sense in which God creates the best world and our own world is not the best. The sense in question amounts to the double claim that at least one of the independent three-dimensional subregions of hyperspace is as valuable as any three-dimensional subregion could be, and that the particular three-space in which we find ourselves is not the fortunate one . . . [P]lenitudinous hyperspace . . . also provides the resources to maintain a . . . sense in which God creates absolutely every world worth creating, even if their number is indenumerable.⁴⁴

Hudson's supposition is that the actual plenitudinous hyperspace includes our three-dimensional region and many other three-space regions, including one that instantiates the best possible world.

We might have expected instead a plenitudinous hyperspace that included *only the most valuable* three-dimensional subregions.⁴⁵ But there is the obvious response that a perfect being has, in a sense, actualized every world worth actualizing, including the most valuable worlds. So for every world worth actualizing there is a three-dimensional subregion where, in a sense, that world is instantiated. The total value of the actual concrete subregions in four-space is therefore as great as it could be.⁴⁶

But suppose that there is no best possible world and no set of best possible worlds. Suppose, along with Aquinas, that there are infinitely many improving worlds. Here is Hudson.

. . . grant that there is a great infinity of worlds none of which is unsurpassable. Once again the plenitudinous hyperspace theorist can affirm that God creates an infinity of worlds (beginning with the very first world or set of worlds . . . that are worth creating), even though each is surpassable. In this case the familiar objection that if God were to create a surpassable world then God's creation and God's character could both be surpassed would not longer be successful, since that objection presupposed that God's creative activity is limited to exactly one world.⁴⁷

The hypothesis of a plenitudinous hyperspace presents a clear solution to the *Less-than-Best Problem*. The subregion of hyperspace that we call our world is less than the best region. But since a perfect being can, in a sense, actualize every world that is worth actualizing there is an actual subregion corresponding to every possible world worth actualizing. But then the actual world is a plenitudinous hyperspace that has the greatest total value possible. The actual plenitudinous hyperspace is not a less-than-best world.

The supposition that there are infinitely many improving worlds does not weaken Hudson's solution to the *Less-than-Best Problem*. The actual plenitudinous hyperspace consists in every one of the infinitely many improving worlds that is worth actualizing. It follows again that the actual world is a plenitudinous hyperspace having the greatest total value possible. And again the perfect being did not actualize a less-than-best world.

8.16 PLENITUDINOUS HYPERSPACE: SOME INITIAL WORRIES

In what sense could a plenitudinous hyperspace be the best possible world? Hudson resists the idea that each three-dimensional subregion is a possible world.

The plenitudinous hyperspace theorist . . . is in the remarkable position of being able to maintain that there is a *perfectly serviceable sense* in which God creates more than one world. We have to be careful though. Traditionally ‘world’ in this discussion is short for ‘possible world’ and in talking of other worlds we are talking of maximal alternatives to the actual world. I am not currently suggesting that the proponent of a plenitudinous hyperspace should maintain that the many distinct and independent regions offered by his metaphysics are ‘ways our world could have been’ . . . ⁴⁸

So we are supposed to have reason to believe that the actual world is a plenitudinous hyperspace whose independent three-dimensional subregions are not themselves instantiations of any possible worlds. Here again is Hudson.

The sense in [which God creates the best world] amounts to the double claim that at least one of the independent three-dimensional subregions of hyperspace is as valuable as any three-dimensional subregion could be, and that the particular three-space in which we find ourselves is not the fortunate one. . . . [Plenitudinous hyperspace also] provides the resources to maintain a straightforward sense in which God creates absolutely every world worth creating, even if their number is indenumerable.⁴⁹

But then Hudson’s position is emphatically *not* that God has created a possible world whose subregions are *duplicates* of every on-balance good world. In fact, the three-dimensional subregions are not instantiated worlds at all. Hudson’s position is rather that we have reason to believe there’s a possible world containing infinitely many subregions whose total value is greater than the total value of any other possible world.

But this assertion does not reply to the possibility that there is no best possible world; it simply denies that there is an infinite hierarchy of possible worlds. It claims that there is a single world—the actual world—that contains infinitely many subregions whose total value is greater than the total value of any other possible world. It is clear that this is not equivalent to the claim that God has *actualized every world* worth actualizing, since the subregions are not themselves possible worlds. So for all we are told there are infinitely many possible worlds that include a plenitudinous hyperspace no one of which is the best possible world.

8.17 HYPERSPACE, NECESSITARIANISM, AND DIVINE FREEDOM

The *Less-than-Best Problem* is based on the Leibnizian thesis that an essentially perfectly good being could not actualize any less-than-best world.

So a perfect being that can actualize a plenitudinous hyperspace *must*, in a sense, actualize every on-balance good world or every world that is worth actualizing. Strictly, he must actualize the possible world that includes the most valuable, perhaps infinitely large, plenitudinous hyperspace. But a perfect being that *must* actualize the best plenitudinous hyperspace lacks the attribute of divine freedom. There is no other set of subregions that a perfect being might have actualized instead. But according to Hudson, a perfect being that must actualize the best plenitudinous hyperspace would not *completely lack* the attribute of divine freedom.

. . . Accordingly it would not be in God's power to create regions not worth creating nor to refrain from creating regions worth creating. God's freedom would not be completely curtailed, however, since *God might still enjoy a fair amount of significant freedom regarding his interaction with the denizens of those created regions. . . .*⁵⁰

The suggestion is that a perfect being would not be free with respect to the decision concerning the worlds to actualize, but that he would be free with respect to his interactions with the inhabitants of those created regions. But this claim is false. A perfect being that must actualize the best plenitudinous hyperspace is not free with respect to his interactions with the denizens of the created regions. A perfect being that must actualize the best plenitudinous hyperspace has no freedom at all.

Every event, object, and state of affairs that occurs, exists, and obtains in the actual plenitudinous hyperspace *necessarily* occurs, exists, and obtains in the actual plenitudinous hyperspace. Hudson's plenitudinous hyperspace is a necessitarian hyperspace.

Let P_v be the total value of our actual plenitudinous hyperspace and let \Box represent logical necessity. Let AP_v symbolize the proposition that a perfect being brings about the total value of our actual plenitudinous hyperspace. Suppose p is a true proposition stating that God makes a promise to Abraham on Thursday. *Hudson's Hyperspace Solution* entails that *necessarily* God makes a promise to Abraham on Thursday. And in general every event, object, and state of affairs in the actual plenitudinous hyperspace necessarily occurs, exists, and obtains. The argument is straightforward.

1. $\Box (AP_v \supset p)$
2. $\Box AP_v$
3. $\therefore \Box p$

And we arrive at the conclusion that necessarily God makes a promise to Abraham on Thursday. The argument generalizes to all of God's interactions—however insignificant—with the inhabitants of plenitudinous hyperspace. *Hudson's Hyperspace Solution* entails that there is no divine

freedom at all. Indeed, everything that happens in the actual plenitudinous hyperspace *necessarily happens* there.

Hudson might wish to deny premise (1). Suppose for *reductio ad absurdum* that it is possible that God brings about the total value of our actual plenitudinous hyperspace P_v and does not actualize a p-world. It follows that p-worlds are not among the possible worlds worth actualizing. But we began with the hypothesis that God actualized a p-world. We arrive at the conclusion that p-worlds are both worth actualizing and not worth actualizing. And that of course is impossible.

Hudson might wish to deny premise (2). But if premise (2) is false, then a perfect being can actualize a plenitudinous hyperspace that contains less than the greatest total value. Of course that obviously begs the question against the Leibnizian assumption. So there is no reasonable basis for denying premises (1) or (2). And premises (1) and (2) uncontroversially entail p.

Hudson's Hyperspace Solution entails that the actual world is the exclusive possible world. In short, everything possible is actual. Suppose for *reductio ad absurdum* that there is some possible world w and some state of affairs p in w that is not actual. In that case it is true at the actual world that $\sim p$ and $\diamond p$. But we know from the foregoing argument that $\sim p$ only if $\sim \diamond p$. And so we have derived a contradiction, $\diamond p$ and $\sim \diamond p$. Therefore there is no possible world w and state of affairs p in w that is not actual. And so everything possible is actual or our world is the only possible world.

These consequences are extremely implausible. *Hudson's Hyperspace Solution* entails that necessitarianism is true. So, of course, there is no divine freedom at all. Indeed, everything that happens in the actual plenitudinous hyperspace necessarily happens in the actual plenitudinous hyperspace. Among the additional consequences is that our actual plenitudinous hyperspace is fatalistic. In a fatalistic hyperspace, finite beings do not enjoy the freedom necessary for agency or moral praise and blame. And in a necessitarian hyperspace, *perfect beings* do not enjoy the freedom necessary for agency or moral praise and blame. And since perfect beings are not moral agents, we reach the untenable theistic position that they are not proper objects of veneration or worship.

Aside from the moral implications of *Hudson's Hyperspace Solution*, there is the bizarre metaphysical consequence that everything that could happen does happen. But of course it's just implausible that the limits of logical possibility are reached in the actual world. It seems fair to conclude that *Hudson's Hyperspace Solution* is not a good response to the *Less-than-Best Problem*.

8.18 CONCLUSIONS

Many-world solutions to the *Less-than-Best Problem* are currently very popular. But the consequences of *Turner's Multiverse Solution* and *Hudson's*

Hyperspace Solution are untenable. The solutions Turner and Hudson propose entail that the actual world is either a necessitarian cosmos or a necessitarian plenitudinous hyperspace. Both solutions entail the incredible view that everything possible is actual. The actual world is the exclusive possible world. Both solutions entail that there is no divine freedom. It should be evident, then, that neither solution is a particularly good theistic response to the *Less-than-Best Problem*. And neither solution is a particularly good response to the problem of no best world.

Theistic modal realism does fare much better. The theistic modal realist solution to the *Less-than-Best Problem* maintains that there is no moral basis for the conclusion that a perfect being would have ensured that our world is the single best possible world. If there is a best possible world, then there are individual inhabitants of a real concrete universe enjoying the best possible experiences. If there is an infinite sequence of improving worlds, then no individual inhabitants of any world are enjoying the best possible experiences. In either case, the *Less-than-Best Problem* has a good theistic solution.

Theistic modal realism is also consistent with the *Principle of Plenitude*. The principle of plenitude entails that at least some of those worlds are so bad that no perfect being could actualize them. But there is an intriguing way for theistic modal realism to solve this problem. Of course there is no noncircular way to dispense with the *Principle of Plenitude*. But we discovered that there are *Lifeguard Situations* in which perfect beings violate no moral requirement in permitting preventable suffering. In *Lifeguard Situations* it is impossible that a perfect being should prevent every instance of preventable suffering in every possible world. We should conclude, then, that theistic modal realism provides the best available solution to the *Less-than-Best Problem*.

Appendix A

Rowe's Formal Argument From Improvability

1. $(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ OAx) \supset$
 $\sim(\exists y)((x < y) \ \& \ \diamond(OAy))$ *Principle B*
2. $\diamond(\exists O)(\exists x)((O \text{ is essentially perfectly good}) \ \& \ OAx)$ Assume for RAA
3. $\diamond(\text{God is essentially perfectly good and } GodAw)$ 2, Instantiate
4. $\diamond\sim(\exists y)((w < y) \ \& \ \diamond(GodAy))$ 1,2, MP
5. $\Box(\forall O)(\forall x)(\exists y)((x < y) \ \& \ \diamond(OAy))$ *No Best World*
6. $\Box(\forall x)(\exists y)((x < y) \ \& \ \diamond(GodAy))$ 5, Instantiate
7. $\Box(\exists y)((w < y) \ \& \ \diamond(GodAy))$ 6, Instantiate 4,7 !@#
8. $\sim\diamond(\exists O)(\exists x)((O \text{ is essentially perfectly good}) \ \& \ OAx)$ 2, RAA
9. $\sim\diamond(\forall O)\sim(\exists x)((O \text{ is essentially perfectly good}) \ \& \ OAx)$ 8, equiv.
10. $\sim\diamond(\forall O)(\forall x)\sim((O \text{ is essentially perfectly good}) \ \& \ \sim(OAx))$ 9, equiv.
11. $\sim\diamond(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \supset \ \sim(OAx))$ 10, equiv.
12. $\Box(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \supset \ \sim(OAx))$ 11 equiv.
13. $\Box(\forall O)(\exists x)((O \text{ is essentially perfectly good}) \ \supset \ (OAx))$
Kretzmann's Conclusion
14. $\diamond(\exists O)((O \text{ is essentially perfectly good})$ Assume for RAA
15. $\diamond((\exists O)(\exists x)(OAx) \ \& \ (\exists O)(\forall x)\sim(OAx))$ 14,13, 12 MP
16. $\diamond(GodAw \ \& \ \sim GodAw)$ Instantiate 15, !@#
17. $\sim\diamond(\exists O)((O \text{ is essentially perfectly good})$ 14, RAA

Appendix B

Anti-Principle B Proof

1. $\Box(\forall x)((\text{GodAx}) \supset (\exists y)(\sim(\text{GodAy}) \ \& \ (\text{GodAy}) \ \& \ y > x))$ *Hasker's NBW*
2. $\Box(\forall O)(\exists x)((O \text{ is essentially perfectly good}) \supset (OAx))$
Kretzmann's Conclusion
3. $\Diamond(\exists O)((O \text{ is essentially perfectly good}))$ *Coherence of Perfect Beings*
4. $\Diamond(\text{God is essentially perfectly good})$ 3, Instantiation
5. $\Box((\text{God is essentially perfectly good}) \supset (\text{GodAw}))$ 2, Instantiation
6. $\Box(\text{God is essentially perfectly good})$
4, S5, Necessary Existence
7. $\Box(\text{GodAw})$ 5,6, MP
8. $\Box((\text{GodAw}) \supset (\exists y)(\sim(\text{GodAy}) \ \& \ (\text{GodAy}) \ \& \ y > w))$ 1, Instantiation
9. $\Box(\exists y)(\sim(\text{GodAy}) \ \& \ (\text{GodAy}) \ \& \ y > w)$ 7,8 MP
10. $\Box((\text{GodAw}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ (\text{GodAy}) \ \& \ y > w))$ 7,9, Conj.
11. $\therefore \Box(\exists x)((\text{GodAx}) \ \& \ (\exists y)(\sim(\text{GodAy}) \ \& \ \Diamond(\text{GodAy}) \ \& \ y > x))$ 10, EG
12. $\Box(\forall O)(\forall x)((O \text{ is essentially perfectly good}) \ \& \ (OAx)) \supset$
 $\sim(\exists y)((x < y) \ \& \ \Diamond(OAy))$ *Principle B, Assump.*
13. $\Box((\text{God is essentially perfectly good}) \ \& \ (\text{GodAw})) \supset$
 $\sim(\exists y)((w < y) \ \& \ \Diamond(\text{GodAy}))$ 12, Instantiation
14. $\Box(\text{God is essentially perfectly good} \ \& \ (\text{GodAw}))$ 6,7 Conj.
15. $\Box \sim(\exists y)((w < y) \ \& \ \Diamond(\text{GodAy}))$
16. $\Box((\text{GodAw}) \ \& \ \sim(\exists y)((w < y) \ \& \ \Diamond(\text{GodAy})))$ 7,15 Conj.
17. $\therefore \Box(\exists x)((\text{GodAx}) \ \& \ \sim(\exists y)(w > y \ \& \ \Diamond(\text{GodAy})))$ 16, EG,
18. \therefore *Principle B* demands the impossible 17, 11 !@#

Notes

NOTES TO THE INTRODUCTION

1. See Thomas V. Morris, "Introduction," in his *Anselmian Explorations: Essays in Philosophical Theology* (Notre Dame, IN: University of Notre Dame Press, 1987).
2. See Roy Sorensen, "Moral Dilemmas, Thought Experiments and Conflict Vagueness," *Philosophical Studies* 63 (1991), 291–308.
3. Jordan Howard Sobel, *Logic and Theism* (Cambridge: Cambridge University Press, 2004), p. 360, my emphasis.
4. *Ibid.*, p. 361.
5. *Ibid.*, p. 361 ff.
6. J. L. Mackie, "Evil and Omnipotence," in Louis Pojman and Michael Rea, eds., *Philosophy of Religion: An Anthology* (Belmont, CA: Wadsworth, 2003), p. 173.
7. *Ibid.*, pp. 174–75.
8. *Ibid.*, p. 175.
9. See Thomas V. Morris, "The Necessity of God's Goodness," in his *Anselmian Explorations: Essays in Philosophical Theology* (Notre Dame, IN: University of Notre Dame Press, 1987), pp. 42–69.
10. See George Schlesinger, *Religion and Scientific Method* (Dordrecht, Holland: D. Reidel Publishing, 1977), pp. 62–63. Schlesinger argues similarly in *New Perspectives on Old-Time Religion* (Oxford: Oxford University Press, 1988). See also Bruce Reichenbach, "Must God Create the Best Possible World?" *International Philosophical Quarterly* Vol. 19 (1979), pp. 203–12, and his "Basinger on Reichenbach and the Best Possible World," *International Philosophical Quarterly*, Vol. 20 (1980), pp. 343–45.
11. See William Rowe, "The Problem of Evil and Some Varieties of Atheism," collected in Daniel Howard-Snyder, ed., *The Evidential Argument From Evil* (Indianapolis, IN: Indiana University Press, 1996). Emphasis added.
12. See Mark C. Murphy, "A Trilemma for Divine Command Theory," *Faith and Philosophy*, Vol. 19 (2002), pp. 22–31.
13. See Michael Smith, *The Moral Problem* (Oxford: Blackwell Publishers, 1994), p. 40 ff., for a discussion of what Smith calls the platitudes regarding the supervenience of the moral on the nonmoral. See also Frank Jackson, *From Metaphysics to Ethics* (Oxford: Oxford University Press, 1998), p. 119 ff.

NOTES TO CHAPTER 1

1. See Gottfried Leibniz, *Theodicy*, Austin Farrer, ed. (LaSalle, IL: Open Court Press, 1985), sec. 201.

2. I discuss in chapter 5, section 6, a model in which there is an upper bound on the value of worlds, and no world in the sequence reached the upper bound. In this case we would have an infinite series of worlds whose values slowly approximate an unsurpassable value that rapidly decrease from an unsurpassable value.
3. Strictly, since possible worlds necessarily exist, a perfect being must actualize some world or other. If no contingent objects are created, the default world would contain objects that exist necessarily. The default world also includes infinitely many contingent states of affairs.
4. Given the principle of sufficient reason, Leibniz would not find congenial the view that there is a tie for best possible world. The Leibnizian conclusion I note is therefore slightly weaker than Leibniz would likely endorse.
5. Rowe often presents B without explicitly stating that it is a necessary truth about all possible omniscient and omnipotent beings. But he does hold that it is necessary. See his “Can God Be Free?” *Faith and Philosophy* (2002), p. 416.
6. *Ibid.*, p. 410. Given that God exists and that there is a best creatable world, God’s nature as an omnipotent, omniscient, perfectly good being would require him to create that best world. Doing less than the best he can do—create the best creatable world—would be inconsistent with his being the perfect being he is.
7. The arrangement of worlds is not intended to favor a consequentialist ordering over a deontological ordering or some combination of these. It is assumed only that there is a strict ordering over the sequence of worlds.
8. Of course if we assume that a perfect being that “actualizes no world” in fact actualizes a world by omission, then a perfect being must actualize some world or other. The default world contains only those things that necessarily exist.
9. William L. Rowe, “Can God Be Free?” *Faith and Philosophy* (2002), p. 412.
10. There are other moral arguments against *Principle B* that are beyond the scope of the current discussion. See Daniel and Frances Howard-Snyder, “How an Unsurpassable Being Might Create a Surpassable World,” *Faith and Philosophy* (1994), and their “The Real Problem of No Best World,” *Faith and Philosophy* (1996), pp. 422–25; William Wainwright, *Philosophy of Religion* (Belmont, CA: Wadsworth Publishing Company, 1988), p. 90 ff.
11. See Erik Weilenberg, “A Morally Unsurpassable God Must Create the Best,” *Religious Studies* (2004), p. 21.
12. *Ibid.*
13. See Philip L. Quinn, “God, Moral Perfection and Possible Worlds,” in Frederick Sontag and M. Darrol Bryant, eds., *God: The Contemporary Discussion* (New York: The Rose of Sharon Press, 1982), esp. p. 204 ff.
14. The problem is reminiscent of Plantinga’s *McEar* for definitions of omnipotence. See Alvin Plantinga, *God and Other Minds* (Ithaca, NY: Cornell University Press, 1967), p. 170, and Richard LaCroix, “The Impossibility of Defining ‘Omnipotence,’” *Philosophical Studies* (1977), pp. 181–90. If we suppose, for instance, that w is the best actualizable world for O and w is (nonetheless) among the worst worlds, it is difficult to conclude that O actualizes w and O is morally perfect.
15. See Stephen Grover, “Why Only the Best is Good Enough,” *Analysis* (1988), p. 224.
16. Bruce Langtry, “God and the Best,” *Faith and Philosophy*, Vol. 13 (1996), pp. 311–28.

17. See Klaas Kraay, "Rowe's a Priori Argument for Atheism," *Faith and Philosophy*, Vol. 22, No. 2 (2005), pp. 211–34.
18. (2d) is just the contrapositive of (2c).
19. If the *No Best World* hypothesis in (3) is true, then the antecedent of the unintuitive consequence in (2d) is *necessarily* false. So premise (3) trivially entails (2d). But this is no objection to (3). If the antecedent of (2d) is necessarily false, then it is impossible that some world is the best actualizable. But then no omniscient and omnipotent being can actualize a best world.
20. If there is a necessarily existing being it would have to have allowed our world to become actual without actualizing it. But I'm uncertain whether there is any difference between allowing a world to become actual and actualizing it.
21. See Norman Kretzmann, "A Particular Problem of Creation: Why Would God Create This World?" in Scott MacDonald, ed., *Being and Goodness: The Concept of the Good in Metaphysics and Philosophical Theology* (Ithaca, NY: Cornell University Press, 1991), pp. 229–30.
22. *Ibid.*, p. 238.
23. William Hasker, *Providence, Evil, and the Openness of God* (London: Routledge Press, 2004), p. 172.
24. *Ibid.*, pp. 172–73.
25. Thomas V. Morris, "Perfection and Creation," in Eleonore Stump, ed., *Reasoned Faith* (Ithaca, NY: Cornell University Press, 1993), p. 244.
26. Rowe makes a similar observation in response to this objection from Thomas Morris. See his "Can God Be Free?" *Faith and Philosophy* (2002), p. 419 ff.
27. William L. Rowe, *Can God Be Free?* (Oxford: Oxford University Press, 2004), p. 134.
28. Theodore Guleserian, "God and Possible Worlds: The Modal Problem of Evil," Vol. 17, *Noûs* (1983), pp. 221–38.
29. To derive B* from (3), simply disjoin to (3) the proposition that it is not the case that an omnipotent and omniscient being is essentially good and actualizes a world or $\sim((O \text{ is essentially good}) \ \& \ (O \text{ actualizes } x))$.
30. William L. Rowe, *Can God Be Free?* op. cit., p. 89. My italics.
31. See Appendix B for a detailed proof.
32. William L. Rowe, *Can God Be Free?* op. cit., p. 89. My italics.
33. See Chapter 8, sections 2–2.4, for an argument against Pike's claim that some consistently describable states of affairs are so bad that no morally perfect being could actualize them.
34. In formulating Pike's argument, I do not restrict quantification over essentially perfectly good beings or omnipotent beings to Anselmian perfect beings.
35. Nelson Pike, "Omnipotence and God's Ability to Sin," in Louis Pojman, ed., *Philosophy of Religion: An Anthology* (Boston: Wadsworth Publishing Co., 1998), pp. 283–93. Pike does not conclude from this that God does not exist. Rather, Pike's well-known solution to this problem is that were God to act immorally then he would no longer have the title God. Under the assumption that God exists, Pike seems to affirm (i) God exists & $\diamond(\text{God acts immorally})$ and to deny (ii) $\diamond(\text{God exists} \ \& \ \text{God acts immorally})$.
36. David Chalmers, "Does Conceivability Entail Possibility?" in Tamar Szabó Gendler and John Hawthorne, eds., *Conceivability and Possibility* (Oxford: Oxford University Press, 2002). On at least one analysis in Chalmers's discussion, S is ideally conceivable when there is a possible subject for whom S is prima facie conceivable with justification that is undefeatable by better reasoning. See p. 148 ff.

37. William L. Rowe, "Modal Versions of the Ontological Argument," in Melville Y. Stewart, ed., *Philosophy of Religion: An Anthology of Contemporary Views* (Sudbury, UK: Jones and Bartlett Press, 1996), p. 199 ff.

NOTES TO CHAPTER 2

1. The arrangement of worlds is not intended to favor a consequentialist ordering over a deontological ordering or some combination of these. It is assumed only that there is a strict ordering over the sequence of worlds. The strict ordering is transitive, asymmetric, and complete.
2. I remain noncommittal on the modal metaphysics assumed, though it no doubt appears Plantingan.
3. There are many discussions of the problem of no best world. For instance, Frances and Daniel Howard-Snyder, "How an Unsurpassable Being Can Create a Surpassable World," *Faith and Philosophy* (1994), and their "The Real Problem of No Best World," *Faith and Philosophy* (1996), pp. 422–25. See also William Rowe, "The Problem of No Best World," *Faith and Philosophy* (1994), pp. 269–71, and his "Can God Be Free?" *Faith and Philosophy*, Vol. 19, No. 4 (2002), pp. 405–24.
4. It is a matter beyond the scope of this discussion whether a perfectly rational being might have cyclical preferences. It is notable that the problems presented by cyclical preferences are analogous to the problems presented by an infinite sequence of improving options.
5. It can make an important difference whether a world is selected at random. A mixed strategy over the set of worlds might have an infinite expected value, even if each world has a finite value. If such a mixed strategy M is not dominated by another mixed strategy M^* having infinite expected value, then a perfectly rational being should use M .
6. I make no assumptions about the moral distance between world w_n and w_{n+1} except that w_{n+1} is morally better than w_n . The worlds might be ordered in increments of 1,000 or 10,000 (e.g., where w_{n+1} is 1,000 or 10,000 units better than w_n). These assumptions do not affect the argument that follows.
7. John Pollock, "How Do You Maximize Expectation Value?" *Nous* (1983), pp. 409–21.
8. *Ibid.*, p. 415.
9. *Ibid.*, p. 417.
10. *Ibid.*, p. 410.
11. Frank Jackson and Robert Pargetter, "Oughts, Options, and Actualism," *The Philosophical Review* (1986), pp. 233–55.
12. Compare the argument in Chapter 8, section 2.5, *Less-than-Best Problems Resolved*. The moral perfection argument in Chapter 8, section 2.5 generalizes to cases of perfect rationality.
13. Of course it need not be true that mixed strategies have infinite expected value. The infinite expected value of mixed strategies depends on additional assumptions about the distribution of value across worlds. But these assumptions do seem reasonable.
14. J. Howard Sobel, *Logic and Theism: Arguments For and Against Beliefs in God* (Cambridge: Cambridge University Press, 2004), p. 468 ff. The emphasis is mine.
15. *Ibid.*, p. 468, emphasis added.
16. *Ibid.*, p. 469. The quotation in this excerpt is to Roy Sorenson, "Infinite Decision Theory," in Jeff Jordan, ed., *Gambling on God* (Lanham, MD: Rowman and Littlefield Publishers, 1994), pp. 139–60.

17. Cf. Roy Sorensen, "Infinite Decision Theory," in Jeff Jordan, ed., *Gambling on God*, op. cit., p. 147 ff.
18. J. Howard Sobel, *Logic and Theism: Arguments For and Against Beliefs in God*, op. cit., pp. 471–72.

NOTES TO CHAPTER 3

1. See William Rowe, "The Problem of Evil and Some Varieties of Atheism," collected in Daniel Howard-Snyder, ed., *The Evidential Argument From Evil* (Indianapolis: Indiana University Press, 1996), pp. 1–11. My emphasis.
2. The unfortunate locution "the minimum amount of evil necessary for divine purposes D" refers to the least amount of evil such that any greater evil is unnecessary for D. If k is the least amount of evil such that any greater evil is unnecessary for divine purposes, then of course $k-i$ is necessary for D and $k-2i$ is necessary for D and so on for any amount of evil less than k and greater than 0. But k is the total quantity of evil necessary for D. Van Inwagen calls that the minimum evil necessary for D.
3. See Peter van Inwagen, "The Magnitude, Duration, and Distribution of Evil: A Theodicy," in his *God, Knowledge and Mystery: Essays in Philosophical Theology* (Ithaca, NY: Cornell University Press, 1995), p. 103.
4. Peter van Inwagen, "The Problem of Evil, the Problem of Air, and the Problem of Silence," in his *God, Knowledge and Mystery: Essays in Philosophical Theology* (Ithaca, NY: Cornell University Press, 1995), note 11, p. 77.
5. "The Magnitude, Duration, and Distribution of Evil: A Theodicy," op. cit., p. 103.
6. "The Magnitude, Duration, and Distribution of Evil: A Theodicy," op. cit., pp. 103–04.
7. Two points are worth mentioning here. First, the infinite divisibility of the evil between 0 and k might entail that some evils that are imperceptibly small. That conclusion is controversial. Jeff Jordan argues against imperceptible harms or evils. See his "Evil and van Inwagen," *Faith and Philosophy*, Vol. 20 (2003), pp. 236–39. Frank Arntzenius and David McCarthy offer a strong argument in favor of imperceptible harms or evils. See their "Self-Torture and Group Beneficence," *Erkenntnis* 47 (1997), pp. 129–44. Here I remain neutral on the point. Second, it does not affect the *No Minimum* argument whether the infinite series is countable or uncountable.
8. Notice that this version of the *No Minimum Thesis* gives wide scope to the quantifier over increments. We consider a narrow scope reading in the following section.
9. Suppose instead it is urged that 50 turps is necessary for divine purposes and any amount of evil greater than 50 turps is unnecessary for divine purposes. In that case there is a minimum amount of evil such that any greater amount of evil is unnecessary for divine purposes (viz., 50 turps). A perfect being may therefore allow the total amount of evil necessary for divine purposes (viz., 50 turps). And that is perfectly consistent with the standard position on evil.
10. "The Magnitude, Duration, and Distribution of Evil: A Theodicy," op. cit., p. 104.
11. We are here suggesting that it is necessary to divine purposes that there is some amount of evil (or other) greater than k , and there is no amount of evil greater than k such that it is necessary to divine purposes. The suggestion is analogous to the consistent assertion that it is obligatory that some moral agent (or other) saves Smith, and there is no moral agent such that it is obligatory that he saves Smith.

12. "The Problem of Evil, the Problem of Air, and the Problem of Silence," op. cit., note 11, p. 77.
13. "The Magnitude, Duration, and Distribution of Evil: A Theodicy," op. cit., p. 103.
14. The *No Minimum Thesis* entails the *Vague Minimum Thesis* but the converse does not hold.

NMT. There is no amount of evil k_n ($k \geq k_n > 0$) in S such that for *some* admissible precisification, any amount of evil greater than k_n is unnecessary for divine purposes and some amount of evil greater than k_{n-i} is necessary for divine purposes. VMT. There is no amount of evil k_n ($k \geq k_n > 0$) in S such that for *every* admissible precisification, k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes.

Prove NMT entails VMT: Suppose VMT is false. Then there is some k_n and k_{n-i} such that on every admissible precisification k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes. It is true of k_{n-i} that any greater amount of evil is unnecessary for divine purposes. But then it follows from NMT that no amount of evil greater than k_{n-2i} is necessary for divine purposes. But that is false since the amount of evil in k_{n-i} is necessary for divine purposes. Therefore NMT entails VMT.

Prove VMT does not entail NMT: Assume VMT and that, for some admissible precisification, k_n is unnecessary for divine purposes and k_{n-i} is necessary for divine purposes. Contrary to NMT it follows that, for some admissible precisification, any amount of evil greater than k_{n-i} is unnecessary for divine purposes and some amount of evil greater than k_{n-2i} is necessary for divine purposes. So VMT does not entail NMT. The weaker thesis in VMT is true but (as we've seen) the stronger thesis in NMT is false.

15. "The Magnitude, Duration and Distribution of Evil: A Theodicy," op. cit., p. 103.
16. Jeff Jordan, "Evil and van Inwagen," op. cit. Jordan proposes this version of the *No Minimum* thesis and finally rejects it.
17. There is some reason to believe that van Inwagen endorses some degree-theoretic account of vagueness. See, for instance, his *Material Beings* (Ithaca, NY: Cornell University Press, 1990). See esp. pp. 213–34.
18. I am not suggesting that any epistemicist would or does endorse (2f). I am suggesting that (2f) might advance van Inwagen's *No Minimum* argument. The following argument has obvious affinities with Timothy Williamson's antiluminosity argument in his *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000), esp. sections 4.2, 4.3, and 4.6.
19. If the definite description in "on the border of evil unnecessary for divine purposes" is restricted to that amount of evil that is definitely indefinitely unnecessary for divine purposes, then use the indefinite description in "on a border of evil unnecessary for divine purposes" for amounts of evil that are indefinitely indefinitely unnecessary for divine purposes.
20. See John Hawthorne, "Vagueness and the Mind of God," *Philosophical Studies* 122 (2005), pp. 1–25. In a very interesting discussion Hawthorne considers three definitions of omniscience including what I refer to as O_1 . It is O_1 that Hawthorne finds most plausible.
21. Cf. Cian Dorr, "Vagueness Without Ignorance," *Philosophical Perspectives*, Vol. 17 (2003), pp. 83–114. Dorr urges that every omniscient being knows a proposition P if P is true. But as we have noted, this entails that omniscient beings know that k_n is unnecessary for divine purposes even when it is superdefinitely true that k_n is on the borderline between amounts of evil that are necessary for divine purposes and amounts of evil that are unnecessary for divine purposes. And to my ear—though certainly not to Dorr's—this sounds awful.

22. This account is similar to one discussed in Timothy Williamson's in *Vagueness* (London: Routledge, 1994). See the discussion of operator 'definite*', p. 160 ff.

NOTES TO CHAPTER 4

1. See William Rowe, "The Problem of Evil and Some Varieties of Atheism," collected in Daniel Howard-Snyder, ed., *The Evidential Argument From Evil* (Indianapolis: Indiana University Press, 1996), pp. 1–11. My emphasis.
2. See "The Puzzle of the Self-Torturer," in Warren Quinn, *Morality and Action* (Cambridge: Cambridge University Press, 1993), p. 198 ff. Quinn adds to his description that the self-torturer is paid \$10,000.00 for each exchange upward and can advance only one step per week. These stipulations perhaps make the case more realistic, but they obscure the basic problem. The basic problem is most easily seen under the assumption that there is no perceptible difference between each pairwise set of options. A rational agent is therefore permitted to make rational exchanges upward through the entire sequence to the most painful setting.
3. *Ibid.*, p. 198.
4. But compare Quinn's thesis in T with the much weaker thesis in T'.
 T. For all k_n ($k_0 \leq k_n < k$) in S there is some increment i ($i > 0$) such that a rational agent is indifferent between k_{ni} and $k_{(n+1)i}$ and the rational agent strongly prefers k_0 to k .
 In T, k is the least upper bound on the sequence and k is not included in the sequence. According to T', for each setting in the sequence k_n there is *some increment or other* greater than zero such that a rational agent is indifferent between k_{ni} and $k_{(n+1)i}$. T' is false just in case there is always some pairwise option in the sequence such that for any positive increment i a rational agent prefers k_{ni} to $k_{(n+1)i}$.
5. See Frank Arntzenius and David McCarthy, "Self-Torturer and Group Beneficence," *Erkenntnis* 47 (1997), pp. 129–44.
6. *Ibid.*, p. 133, my emphasis.
7. *Ibid.*, p. 137, my emphasis.
8. Assuming that "is painful" is no more than fourth-order vague, the sequence from definitely₃ indefinitely painful to definitely₄ painful is as follows.

D	I	D	I	D	I	D	I	I	D	I	D	I	D	I	D
D	D	I	I	D	D	I	I	I	I	D	D	I	I	D	D
D	D	D	D	I	I	I	I	I	I	I	I	D	D	D	D
I	I	I	I	I	I	I	I	I	D	D	D	D	D	D	D

Definitely ₃	Indefinitely ₄	Indefinitely ₃	Definitely ₄
Indefinitely	Painful	Definitely	Painful
Painful		Painful	

9. I do not consider the fascinating suggestion here that a perfect being might indefinitely prevent indefinite evils.
10. Linda Zagzebski has argued that an omniscient being would be omnibusjective as well, where an omnibusjective being has quasi-direct access to the subjective experiences of moral agents and patients. But it is not obvious that omnibusjectivity guarantees epistemic access to those mental states that moral agents do not themselves have access to. See her *Omnibusjectivity* (unpublished manuscript).

11. See Timothy Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000), p. 97 ff.
12. *Ibid.*, p. 100.
13. See Anthony Bruekner and Oreste Fiocco, "Williams's Anti-Luminosity Argument," *Philosophical Studies* (2002), pp. 288–93.
14. Ram Neta and Guy Rohrbaugh, "Luminosity and the Safety of Knowledge," *Pacific Philosophical Quarterly*, Vol. 85 (2004), pp. 396–406.

NOTES TO CHAPTER 5

1. The operator "it is morally necessary that" is meant to be a near-equivalent to the deontic operator "it is obligatory that." The former is intended to allow that, as William Rowe has urged, there is no distinction between the obligatory and the supererogatory for perfect beings. See William Rowe, *Can God be Free?* (Oxford: Oxford University Press, 2004).
2. We could as well treat possible worlds as distinct from maximally consistent states of affairs or propositions. We could speak of worlds and books on worlds, for instance, as metaphysically distinct. But it is not obvious that they are distinct, and it does facilitate discussion to assume that each world is a maximally consistent set of propositions (or states of affairs). It also simplifies discussion to assume, following Roderick Chisholm and Alvin Plantinga, that states of affairs are identical with propositions. See Alvin Plantinga, *The Nature of Necessity* (Oxford: Oxford University Press, 1974), p. 45, and Roderick Chisholm, "States of Affairs Again," *Noûs* (1971), p. 179.
3. David K. Lewis, *Counterfactuals* (Cambridge, MA: Harvard University Press, 1973), p. 99 ff. It would be interesting to consider the deontic principles governing infinite sequences of improving worlds under the assumption that those sequences include a set of best worlds from the point of view of some worlds and no best world from the point of view of others. Further, we could weaken the assumption of absoluteness to quasi-absoluteness for the *Improvability Argument*. Under the assumption of quasi-absoluteness there is no best world from the standpoint of any world, but the ordering of worlds varies from world to world.
4. Strengthening antecedents is a valid inference for strict conditionals and of course material conditionals. From $(A \supset B)$ it follows immediately that $((A \ \& \ C) \supset B)$. So if necessarily every omnipotent beings can actualize a world, then a necessarily omnipotent and essentially perfectly good being can actualize a world.
5. See Daniel and Frances Howard-Snyder, "How an Unsurpassable God Can Create a Surpassable World," *Faith and Philosophy* (1994), p. 3.
6. See Norman Kretzmann, "A Particular Problem of Creation: Why Would God Create This World?" in Scott MacDonald, ed., *Being and Goodness: The Concept of the Good in Metaphysics and Philosophical Theology* (Ithaca, NY: Cornell University Press, 1991), pp. 229–30.
7. Indeed, (7) is not a theorem in any system of deontic logic that I know about.
8. I agree that there will be infinitely many moral requirements that fulfilled in any case. This does not entail that there are not more moral requirements fulfilled in the latter case than in the former. For some technical worries, see Chapter 8, section 3.6. See also John Conway, *On Numbers and Games* (London: Academic Press, 1976). For an interesting application of Conway's analysis of Pascal's Wager, see Alan Hájek, "Waging War on Pascal's Wager," *The Philosophical Review*, Vol. 112 (2003), 27–56.

NOTES TO CHAPTER 6

1. See Robert Adams, "Divine Command Metaethics Modified Again," in his *The Virtue of Faith* (Oxford: Oxford University Press, 1987), p. 139 ff. Adams's theory takes ethical wrongness as primitive. He writes:

My new divine command theory of ethical wrongness, then, is that ethical wrongness *is* (i.e., is identical with) the property of being contrary to the commands of a loving God. I regard this as a metaphysically necessary, but not an analytic or *a priori* truth. Because it is not a conceptual analysis, this claim is not relative to a religious sub-community of the larger linguistic community. It purports to be the correct theory of the nature of the ethical wrongness that *everybody* (or almost everybody) is talking about.

Adams does note that the metaphysical identity of being obligatory and being commanded by God differs epistemologically from the metaphysical identity of being water and being H₂O. We don't learn that being obligatory is being commanded by God in the same way that we learn that being water is being H₂O. See Robert Adams note (3*) for a brief discussion of some disanalogies.
2. There is no question that *if* being obligatory is identical to being commanded by God, then it is necessary that being obligatory is identical to being commanded by God. If the antecedent of that conditional is true, then all agree that we cannot discover that being obligatory is not identical to being commanded by God. But that antecedent is just what utilitarians and ethical egoists claim is false. Their claim is that we have made no such discovery. And there certainly is legitimate dispute (witness the current discussion of Murphy's argument against property-identical divine command theory) over whether it has been discovered that being obligatory is identical to being commanded by God.
3. See Robert Adams, "Divine Command Metaethics Modified Again," *op. cit.*, and William Alston, "Some Suggestions for Divine Command Theorists," in Michael Beatty, ed., *Christian Theism and the Problems of Philosophy* (Notre Dame, IN: University of Notre Dame Press, 1990).
4. See Mark C. Murphy, "A Trilemma for Divine Command Theory," *Faith and Philosophy*, Vol. 19 (2002), pp. 22–31.
5. See Michael Smith, *The Moral Problem* (Oxford: Blackwell Publishers, 1994), p. 40 ff., for a discussion of what Smith calls the platitudes regarding the supervenience of the moral on the nonmoral. See also Frank Jackson, *From Metaphysics to Ethics* (Oxford: Oxford University Press, 1998), p. 119 ff.
6. See Mark C. Murphy, "A Trilemma for Divine Command Theory," *ibid.*, p. 23. I do not press the point here, but it is not at all obvious why divine freedom entails that God's commands are not entirely fixed by the nonmoral facts. Suppose that among the nonmoral facts that fix what God does are facts describing what God happens to desire, wish, or want. It would then be true that God's commands vary in accordance with his wishes and wants and that God's commands are entirely fixed by nonmoral facts. And that presents no obvious obstacle to divine freedom.
7. It is assumed here that moral features *strongly* supervene on nonmoral features. The assumption can only help Murphy's argument against property-identical DCT. Following Jaegwon Kim, we will say that a set of properties A strongly supervenes on a set of properties B if and only if necessarily, for any object x and any property F in A, if x has F then there exists a property G in B such that x has G and necessarily if any y has G then it has F.

See Jaegwon Kim, "Concepts of Supervenience," in his *Supervenience and the Mind: Selected Philosophical Essays* (Cambridge: Cambridge University Press, 1993), p. 64.

8. See Mark C. Murphy, "A Trilemma for Divine Command Theory," op. cit., p. 25. Murphy's emphasis. Murphy actually uses the abbreviation "DCT." To distinguish traditional versions of divine command theory from Robert Adams's modified version, I use the abbreviation "PDCT." For continuity I make this minor alteration in Murphy's text.
9. See Mark C. Murphy, "A Trilemma for Divine Command Theory," op. cit., pp. 29–30. Murphy's emphasis.
10. It is not at all obvious why we would want to say "the property that distinguishes the required ritual from the nonrequired ritual in each world is being commanded by God." But the assumption seems to be that the *Free Command Thesis* requires that being commanded by God be among the nonmoral properties distinguishing worlds in which one ritual is obligatory and worlds in which another ritual is obligatory. Indeed, it is possible—*pace* Murphy—that God's commands are among those nonmoral facts. But there are other possibilities that would serve as well. Worlds that vary in their obligatory rituals might be worlds in which nonmoral facts about God's *wishes or wants* are different. God wishes to command one ritual in one world and wishes to command another in other worlds. In that case, facts about God's wishes or wants are among the nonmoral facts that distinguish worlds containing differences in required ritual. This is perfectly compatible with the *Free Command Thesis*.
11. Compare Frank Jackson *From Metaphysics to Ethics* (Oxford: Oxford University Press, 1998), pp.118–25. But if ethical properties are descriptive properties, it does not follow that understanding the meaning of "being obligatory" would reveal that it means being commanded by God. The equivalence is rather the result of an empirical investigation into how the predicate "being obligatory" is correctly applied in the world. There is room for debate about how the predicate is correctly applied among utilitarians, ethical egoists, and divine command theorists. Jackson defends the position that the global supervenience of the ethical on the natural has as a consequence that any sentence about how things are ethically is equivalent to some sentence about how things are descriptively. Though I am not urging that defenders of property-identical DCT should (or should not) adopt such a position, it is true that such a position is open to those who defend property-identical DCT.
12. Would it follow that actions are right because they are commanded by God (and not the converse)? The fact that an action is commanded by God is *one* of the nonmoral facts on which obligation supervenes. So it does not follow that actions are right if God commands those actions, but it does follow that actions are right *only if* God commands them.
13. David K. Lewis, *Counterfactuals* (Cambridge: Harvard University Press, 1973), p. 99 ff. It would be interesting to consider the deontic principles governing infinite sequences of improving worlds under the assumption that those sequences include a set of best worlds from the point of view of some worlds and no best world from the point of view of others. Further, we could weaken the assumption of absoluteness to quasi-absoluteness for the *Improvability Argument*. Under the assumption of quasi-absoluteness there is no best world from the standpoint of any world, but the ordering of worlds varies from world to world.
14. See, for instance, William L. Rowe, *Can God Be Free?* (Oxford: Oxford University Press, 2004), esp. chapters 1 and 2; his "The Problem of Divine Freedom and Perfection," in Eleonore Stump, ed., *Reasoned Faith* (Ithaca,

NY, and London: Cornell University Press, 1993); and “Evil and God’s Freedom in Creation,” *American Philosophical Quarterly*, Vol. 36, No. 2 (1999), pp. 101–13.

15. *Can God Be Free?* op. cit., pp. 17–18.

NOTES TO CHAPTER 7

1. See Theodore Sider, “Hell and Vagueness,” *Faith and Philosophy* 19 (2002), pp. 58–68. My emphasis.
2. *Ibid.*, p. 2.
3. The *Degree of Goodness Argument* is not based on any epistemological assumptions. The repugnant conclusion is that any principle of justice that might be used to distribute rewards and punishments must violate some proportionality condition. A moral agent S uttering n obscenities goes determinately to purgatory and a moral agent S' uttering $n+1$ obscenities goes determinately and eternally to hell. The injustice Sider notes is not that S' did not know that the punishment for uttering $n+1$ obscenities was eternal damnation. The injustice is not that moral agents do not know which principles of justice are being applied to them. To simplify matters let’s assume that everyone knows the punishment for uttering $n+1$ obscenities is eternal damnation and the punishment for uttering n obscenities is purgatory. To simplify further, let’s assume that every agent knows how many obscenities he has uttered.
4. Of course there might be no best or worst moral state. If so, then assume that moral state k_0 is so good that any moral agent that instantiates k_0 goes determinately and eternally to heaven, and the moral state k is so bad that any moral agent that instantiates k goes determinately and eternally to hell.
5. We might have allowed variation in the increments between moral states in order to ensure that no moral state $k_{(n+1)i}$ is definitely worse than k_{ni} . We might have assumed that, for every moral state $k_{(n+1)i}$, there is some increment in evil i ($i > 0$) such that $k_{(n+1)i}$ is not definitely worse than the preceding moral state k_{ni} . But this is not an assumption in Sider’s *Degree of Goodness Argument*, and, in any case, it would not affect the forthcoming discussion.
6. There are theological concerns about when S instantiates an irredeemably evil moral state. If S instantiates an irredeemably evil moral state before the time of judgment, then perhaps S is not beyond the possibility of redemption. We are assuming that, possibly, there is a point at which any agent that instantiates an irredeemably evil moral state is beyond redemption.
7. Sider offers a similar objection. See “Hell and Vagueness,” op. cit., p. 4.
8. It would be a mistake, I think, to abandon (J') altogether. The exception to (J') that we have discussed involves a case in which two moral agents instantiate almost the same moral state but *cannot* be treated in almost the same way. One of the agents is irredeemably evil and so, by hypothesis, cannot be saved. The other agent is borderline irredeemably evil and so, by hypothesis, is not quite beyond salvation. It might be worth considering whether (J') should be restricted to agents that are in nearly the same moral state and *can* be treated in nearly the same way.

NOTES TO CHAPTER 8

1. Phil Quinn, “God, Moral Perfection and Possible Worlds,” in Frederick Sontag and M. Darrol Bryant, eds., *God: The Contemporary Discussion* (New York: Rose of Sharon Press, 1982), p. 212.

2. *Ibid.*, p. 205.
3. Quinn is not especially clear on this issue. He defines an actualizable world as a world that an omnipotent being could actualize. Since that definition is nearly trivial, it remains unclear whether an omnipotent being could actualize every logically possible world. On the other hand, he is explicit in wanting not to decide the issue either way. See Phil Quinn, "God, Moral Perfection and Possible Worlds," *op. cit.*, p. 205 ff.
4. See Daniel Nolan, *David Lewis* (Quebec: McGill-Queen's Press, 2005), p. 55 ff.
5. See Mark Heller, "The Immorality of Modal Realism, Or: How I learned to Stop Worrying and Let the Children Drown," *Philosophical Studies* 114 (2003), pp. 1–22.
6. See John Divers, *Possible Worlds* (New York: Routledge, 2002), p. 46 ff.
7. Anselmian eternalism is assumed here to be compatible with God's omnipresence. Since we stand in a spatiotemporal relation (or a close analogue of a spatiotemporal relation) to a God that is omnipresent, even if that being is atemporal, we are to that extent world-mates with God.
8. See David Lewis, "Anselm and Actuality," in *Philosophical Papers Volume I* (Oxford: Oxford University Press, 1983).
9. See David Lewis, *On the Plurality of Worlds* (Oxford: Blackwell Publishers, 1986), p. 86.
10. *Ibid.*, pp. 87–88.
11. It is not clear that the *Principle of Plenitude* entails that there would be an infinite number of worlds or, as Peter van Inwagen has objected, that there would be more than 17 possible worlds. It is an important problem but I do not address it here. See David Lewis, *On the Plurality of Worlds*, *op. cit.*, p. 86.
12. See Theodore Guleserian, "God and Possible Worlds: The Modal Problem of Evil," *Noûs*, Vol. 17 (1983), pp. 221–38.
13. *Ibid.*, p. 224.
14. See Thomas V. Morris, "The Necessity of God's Goodness," in his *Anselmian Explorations: Essays in Philosophical Theology* (Notre Dame, IN: University of Notre Dame Press, 1987), pp. 42–69.
15. See Theodore Guleserian, "God and Possible Worlds: The Modal Problem of Evil," *Noûs*, Vol. 17 (1983), pp. 221–38.
16. Since the Guleserian argument adopts Alvin Plantinga's modal metaphysics, it is important to note that, *mutatis mutandis*, the very same reply is available to those who endorse Plantinga's form of modal realism.
17. The argument is familiar from *Lifeguard Situations*. Let W be the total set of worlds in which God prevents good and just moral agents from suffering undeservedly. Certainly God is permitted to prevent all of those good and just moral agents from suffering undeservedly. But it is equally clear that $\Box(W \rightarrow \text{Smith suffers undeservedly})$, where ' \Box ' represents broad logical necessity. Since we expect that permission is closed under implication, it is permissible for God to allow Smith to suffer undeservedly and preventably.
18. See David K. Lewis, *On the Plurality of Worlds* (Oxford: Blackwell Publishers, 1986), pp. 81–86. See also John Divers, "The Modal Metaphysics of Alvin Plantinga," Deane-Peter Baker, ed., *Contemporary Philosophy in Focus: Alvin Plantinga* (Cambridge: Cambridge University Press, 2007), p. 17 ff.
19. David K. Lewis, *On the Plurality of Worlds*, *op. cit.*, p. 69. See also pp. 198–209.
20. *Ibid.*, p. 72 ff.
21. See Alvin Plantinga, *The Nature of Necessity* (Oxford: Clarendon Press, 1974), p. 88 ff.

22. These are not the only alternatives, of course. There is, for instance, Philip Bricker's version of pictorial modal realism which is designed to accommodate island universes. See his "Island Universes and the Analysis of Modality," in Gerhard Preyer and Frank Siebelt, eds., *Reality and Humean Supervenience: Essays on the Philosophy of David Lewis* (New York: Rowman & Littlefield, 2001).
23. See Donald Albert Turner, "The Many-Universes Solution to the Problem of Evil," in Richard Gale and Alexander Pruss, eds., *The Existence of God* (United Kingdom: Ashgate Publishers, 2003), p. 145.
24. *Ibid.*, p. 148.
25. *Ibid.*, p. 7.
26. See Alvin Plantinga, *The Nature of Necessity* (Oxford: Clarendon Press, 1974), p. 45 ff.
27. *Ibid.*, p. 7.
28. The argument rejects the Moorean thesis of organic unities and assumes that values are commensurable and additive. But the argument fails even when these are conceded.
29. For Plantinga it's likely that even necessarily co-instantiated properties are not in general identical. The property of being identical to Socrates and the property of being necessarily identical to Socrates are mutually entailing. But since one of them is a modal property and the other is not, Plantinga would very likely not regard them as identical properties. See John Divers, "The Modal Metaphysics of Alvin Plantinga" *op.cit.*, p. 16.
30. See Hud Hudson, *A Materialist Metaphysics of the Person* (Ithaca, NY: Cornell University Press, 2001), pp. 5–6.
31. See Robert Nozick, *Philosophical Explanations* (Cambridge, MA: Harvard University Press, 1981), esp. chap. 2.
32. See Derek Parfit, "Why Does the Universe Exist?" *The Harvard Review of Philosophy*, Vol. 1, No. 1 (1991), 2–5, and also his "The Puzzle of Reality: Why Does the Universe Exist?" in Peter van Inwagen and Dean W. Zimmerman, eds., *Metaphysics: The Big Questions* (Oxford: Blackwell Publishing, 2004), pp. 418–26.
33. *Ibid.*, p. 5.
34. See Robert Nozick, *Philosophical Explanations*, *op. cit.*, p.130.
35. See Roy Sorensen, "Infinite Decision Theory," in Jeff Jordan, ed., *Gambling on God* (Lanham, MD: Rowman & Littlefield, 1994).
36. See Peter Vallentyne and Shelly Kagan, "Infinite Value and Finitely Additive Value Theory," *Journal of Philosophy*, Vol. 94 (1997), pp. 5–26. But see also Mark Nelson, "Utilitarian Eschatology," *American Philosophical Quarterly* (1991), pp. 339–47; Peter Vallentyne, "Utilitarianism and Infinite Utility," *Australasian Journal of Philosophy*, Vol. 71 (1993), 212–17; and Krister Segerberg, "A Neglected Family of Aggregation Problems in Ethics," *Noûs* X (1976), pp. 221–44.
37. See Abraham Robinson, *Non-Standard Analysis* (Amsterdam: North Holland, 1966). It should be noted that the nonstandard approach is unhelpful in cases where there are more than nonstandard infinite positive integers to be summed. For instance, if there are more than nonstandard infinite temporal points in w_1 and w_2 , then we cannot sum their value on either a standard or nonstandard approach. This does seem like an especially pressing problem in this context.
38. At some nonstandard approaches are unfortunately inapplicable in cases where the infinite loci of value exceed any nonstandard infinite number. And there might be worlds in which the number of loci of value is greater than nonstandard infinite. For some of these worries, see "Infinite Value and Finitely Additive Value Theory," *op. cit.*, p. 3 ff.

39. See John Conway, *On Numbers and Games* (London: Academic Press, 1976). For an interesting application of Conway's analysis to Pascal's Wager, see Alan Hájek, "Waging War on Pascal's Wager," *The Philosophical Review*, Vol. 112 (2003), pp. 27–56.
40. See "Infinite Value and Finitely Additive Value Theory," op. cit., p. 11. Kagan and Vallentyne offer other metaprinciples as well and endorse a modified version of SBI1. The restriction in SBI1 requires that no locations are skipped in the expansion.
41. See "The Many-Universes Solution to the Problem of Evil," op. cit., p. 13 ff.
42. See Hud Hudson, *The Metaphysics of Hyperspace* (Oxford: Clarendon Press, 2005), p. 176 ff.
43. Ibid., p. 177.
44. Ibid., p. 166.
45. Ibid., p. 167.
46. Of course we are setting aside the possibility that value among possible worlds is incommensurable or nonadditive and so on. The assumptions are necessary to generate the *Less-than-Best Problem*. In any case, solutions that rely heavily on incommensurability are unconvincing and surmountable. See, for instance, *The Metaphysics of Hyperspace*, op. cit., p. 170 ff.
47. *The Metaphysics of Hyperspace*, op. cit., p. 170.
48. Ibid., p. 166, my emphasis.
49. Ibid., pp. 166–67.
50. *The Metaphysics of Hyperspace*, op. cit., pp. 170–71. The emphasis is mine.

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