ABSTRACT

Modeling Divine Deliberation

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Under the assumption that God deliberates when he decides which world he will create, I set out to build a model for God's deliberation. The first chapter will lay the ground and outline each chapter. From Chapter Two through Six, I will explore various models. These models differ from each other mainly because they represent the relations between God's creative acts and the actualization of the worlds in different manners. Based on these chapters, I will conclude that the only models that are simple, consistent, and adequate at once are ones that rely on the causal connection between God's creative acts and the worlds. Yet these causal models may well be implausible, if we hold onto the conventional notion that creatures have causal power. Our only option left, then, seems to be retreating into modal realism and abolishing the need for God's deliberation. Before the concluding chapter, however, I will spend one chapter arguing that there is no best possible world and the world chosen by God does not have to be better than all other worlds.

Modeling Divine Deliberation

by

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To Xiuchan

CHAPTER ONE

Introduction

For theists in the Abrahamic tradition, our world was created and it is God that has created our world. But how did God create our world?

There are an infinite number of worlds. Unless God creates all the worlds or multiple worlds,[1] he must have chosen one particular world from among infinitely many possible worlds. After making his choice, God also needs to perform an act so that he can thereby bring the chosen world into actuality.[2] So there are two things that God needs to contemplate before taking action: which world he should choose, and which creative act he should perform.[3] In this regard, God's situation is similar to any human agent in a circumstance where she is faced with options and needs to make a practical decision. For example, a human agent considering what to do on Friday night naturally considers what actions he could perform (watching a movie, working on a paper, etc.) and what are the projected outcomes each action brings. It is this similarity that has motivated the current project.

My purpose is to fully explore how God makes his decision. In order to do so, I choose to build a model for it just like one would model the deliberation of a typical human agent. A model for human deliberation normally contains three key components:

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[1] I use "create" and "actualize" interchangeably. I will explain the detail of their meaning below.

[2] A standard Thomistic view is that God's choosing to create a world is identical with God's bringing it into existence. So it is apparent that my project does not fit into that view.

[3] In *Discourse on Metaphysics*, II & III, Leibniz argues that every act of willing by God must have some reason. His explanation for that is that to suppose God's acts of willing to be without reason would take away all of God's love and glory. I agree with Leibniz, and to his assertion I add the further clarification that God is aware of His reason for each of His acts of willing.

alternative acts, projected outcomes of each alternative act, and the relation between each act and its corresponding outcomes. Analogously, the model for God's deliberation will mainly comprise these three elements: divine creative acts (DCAs), the actualization of worlds, and the relation between DCAs and the actualization of worlds. A DCA is an act that is efficacious for actualizing a particular world. For the moment, I assume a one-to-one correspondence between DCAs and worlds: for any world, there is a DCA that is efficacious for actualizing it, and for each DCA, there is a world whose actualization can be brought about by God's performing it.[4]

In the next five chapters, I will experiment with various models. Each model will be defined in terms of its unique way of representing the relation between DCAs and the actualization of worlds. A conditional model uses conditionals to represent their relation. I call such conditionals "deliberative conditionals." I will examine four different conditional models. For example, the strict conditional model will include strict conditionals; the material conditional model will include material conditionals; etc. In each conditional model, the antecedent and consequent of a deliberative conditional are, respectively, a DCA and the actualization of the world corresponding with that DCA. In chapter five, I will consider the possibility of doing without conditionals. I will try to find possible models under the traditional distinction between conditional decision theory and causal decision theory.

Each time I lay out the details of a particular model, I then start evaluating it against certain criteria. These criteria include: consistency, adequacy, and simplicity. Consistency is nothing but logical consistency. For example, in chapter Two, I will argue

[4] In chapter Two, I will explain why the correspondence between DCAs and worlds can be many-to-one, that is, a world can be brought about by different DCAs, yet each DCA is only effective for actualizing one world.

that the deliberative conditionals in a conditional model need to be all true. An implication of this is that the deliberative conditionals are logically consistent with one another. In Chapter Seven, I will argue against Kraay's TM theory by pointing out an inherent inconsistency in his theory. Adequacy, in the present context, basically means that whether we use a set of conditionals or probabilities to represent the relation between DCAs and the actualization of worlds, we should provide a reasonable explanation for the truth of the conditionals if we claim them to be true, or for the values we assign to the probabilities. A model lacking such explanatory support is inadequate. However, as we fill in the flesh and blood of a model, we should avoid unnecessarily complicating the model. This has to do with another criterion—simplicity. Due to its inevitable vagueness, I will hold simplicity as a principle but will avoid using it in any controversial manner.

It should be emphasized that in most circumstances I will not reject or affirm any model on the basis of my own theology. For example, the strict conditional model implies that everything that takes place in the actual world is pre-determined by God's DCA. It is grossly implausible for me, but I will not reject that model on account of this particular reason. It bears emphasizing that I do hold certain basic doctrines about God. After all, it is not possible to model God's deliberation while making no assumptions about God's attributes. These doctrines are strictly limited to the following: (i) God is genuinely free with regard to selecting a world; (ii) God has the power to actualize the selected world; (iii) God's decision to create a particular world enables God to find out, with full certainty, what is about to occur in the actual world; (iv) God necessarily exists; (v) God is omnibenevolent, i.e. God is a loving being; (vi) God does perform miracles and is genuinely free with performing miracles; (vii) God is in time. I stick by the

principle that a good model for divine deliberation should not have counter-intuitive implications. For example, in Chapter Two, I will argue that the strict conditional model implies something that contradicts the highly intuitive claim that a free action at t_1 cannot entail a free action at a future time t_2. To avoid abusing one of our basic faculties, I will stick to an extremely high threshold on what is intuitive and what is counterintuitive.

Several things I need to clarify, before moving to the gist of individual chapters. To begin with, any manner of modeling divine deliberation inevitably distorts its original nature. God is an infinite being with infinite power and infinite knowledge. It is beyond human capacity to fully construe how God contemplates things. The models I will propose all share three "logical moments": first, God selects the world He wishes to actualize[5]; then, based on the deliberative conditionals or whatever we use to represent the relation between DCAs and world actualization, God locates the DCA that is efficacious for bringing His selected world into actuality; during the last moment, God performs the DCA and His selected world is actualized.[6] Does it take so many moments for God to finish all the thinking and action? I doubt so. But this way of modeling is the most natural way that we humans can come up with.[7]

Another thing worth noting has to do with the notion of creation. I take "creation" to be synonymous with "bringing into actuality." After God creates a

[5] The world chosen can be selected from all the possible worlds, or from a restricted group of worlds, depending on whether one holds a notion of feasible worlds and how one defines them.

[6] By postulating these logical moments, I do not necessarily commit myself to the denial of God's immutability. We can model God's deliberation under a metaphorical sense of logical moments.

[7] This way of modeling God's deliberation seems to conflict with the claim that God is immutable in the sense that God never undergoes change. So, either my models will not apply at all in a theology that includes that claim, or they will have to be understood as describing how God appears to us, not how God is in His unknowable essence.

particular world, the entities in that world become actualized, while prior to creation they merely have abstract existence. Here, my models might suggest that creation happens once and for all: God's performing a DCA takes place before actualization and appears to be all that is required for creation. However, according to tradition, besides the creative act in initial creation, God's sustaining efforts towards the Creature count as a subsequent stage of creation.[8] I fully accept the traditional notion of Creation, and I believe that my models are open to that interpretation. Divine creative acts (DCAs) in my models refer to acts that God can perform to bring a certain world into actuality. For traditional theism, it is God's initial creative act (in the traditional sense) and His later conservative acts combined that bring a certain world into actuality. I do not see any problem in identifying DCAs in this context with the combination of the two. Of course, I should also emphasize that my models can equally accommodate a notion of Creation which treats an initial creative act by God as sufficient for the full-blown actualization of the chosen world.

Last of all, I commit myself to a Platonic notion of possible worlds. I further assume that among the infinite number of worlds, only one world is chosen by God to be the actual world. Before God actualizes a world, all the worlds are nothing but maximal consistent propositions, and those propositions are neither true nor false. A proposition is maximal consistent if and only if it is logically consistent and for any proposition p, it either entails p or entails not-p. After God finishes creation, the proposition that constitutes the chosen world becomes true, while the propositions that constitute the other worlds become false. After God conducts the DCA, the actual world means the world

[8] For an explicit assertion of this fact, see Kvanvig's *Stanford Encyclopedia of Philosophy* entry "Creation and Conservation." The URL = <http://plato.stanford.edu/entries/creation-conservation/>.

that gets chosen. But until a world gets chosen and God conducts a DCA, the actual world refers to the realm in which God and abstract entities exist. Below are the summaries of the ensuing chapters.

Chapter Two—The Strict Conditional Model

The strict conditional model, as its name shows, uses strict conditionals to characterize the relation between DCAs and the actualization of worlds. A strict conditional is one whose antecedent necessitates its consequent. So in a strict conditional, it is impossible for its antecedent to be true while its consequent is false. For a deliberative conditional in this model, its antecedent is the statement that God performs a given DCA, and its consequent is the statement that a given world w becomes actualized. For the sake of brevity, I sometimes refer to the antecedent and consequent respectively as a DCA and the actualization of a world, or simply a world.

I start by arguing that all the deliberative conditionals are true. The only situations where one uses false statements for deliberation are those in which either one mistakenly believes them to be true or one knows their falsehood but insists on their usefulness for guiding actions. I argue that God's deliberation does not fall into either type of situation, and therefore, the deliberative conditionals are true. For the same considerations, for any model whose deliberative conditionals can be predicated as true or false, we should treat the deliberative conditionals as true.

Then I evaluate the strict conditional model, arguing that it has two shortcomings. First, there is no way to explain the entailment relation between the DCAs and the actualization of worlds, as posited by the model. The deliberative conditionals are not tautologies, not mathematical truths, not analytical truths, and not a posteriori necessities

(e.g. Water is H_2O) either. The causal connection between the DCAs and the actualization of worlds is also insufficient for explaining the entailment relation, even if we bring in causal laws. So the model is inadequate, since a model that simply posits the truth of its deliberative conditionals is an inadequate one.

The second problem also has to do with the entailment relations between the DCAs and the worlds. I argue that they have a counter-intuitive implication, and hence should be rejected. A DCA in a deliberative conditional entails every truth in the corresponding world, including the truths about what miracles God performs and how he is about to perform them. Because God is a free being, God is free to conduct a DCA, and also free to perform miracles. However, it is counterintuitive to think that a free action at t_1 should entail a free action at t_2.

These two problems compel me to abandon the strict conditional model.

Chapter Three—The Material Conditional Model

In this second model, the deliberative conditionals are material conditionals: their antecedents are DCAs and their consequents are the actualization of corresponding worlds. By definition, a material conditional is true if and only if either the antecedent is false or the consequent is true. This poses problems for this model.

I start by drawing a distinction between two different ways in which one deliberates with material conditionals. The first way is indirect: one first endorses an indicative or subjunctive conditional, and on that basis, endorses the related material conditional. If God's deliberation is in this manner, then the material model has little value of its own. The second way is direct: one endorses a material conditional without

relying on its indicative or subjunctive cousins. My discussion in this chapter focuses on this way.

The second way of using material conditionals in one's deliberation leads one to confusion. I use a human scenario to illustrate this problem, and then point out that it also applies to God's deliberation. Pretend God decides to actualize w_0. Then, any deliberative conditional with w_0 as its consequent is true, no matter what DCA is in its antecedent. God will be confused as to what DCA to choose if God genuinely uses material conditionals as practical guides.

Can God avoid this confusion by finding out the causal connections between DCAs and worlds? Then he can just perform one of those DCAs effective for bringing about the actualization of w_0. I argue that God can't, because knowing the causal connections will not help God identify any particular deliberative conditional as "more true" than the others, unless God uses material conditionals in the first way, that is, indirectly.

The other problem with the material conditional model is that God cannot know the truth of the deliberative conditionals. God is genuinely free with creation. So during his deliberation, he does not know which deliberative conditional has a true antecedent and a true consequent, and which deliberative conditionals have false antecedents and false consequents. Yet, that is the only way to know the deliberative conditionals if we assume that God uses material conditionals for his deliberation in the second way.

These two problems are serious enough for us to give up this model.

Chapter Four—The Indicative Conditional Model

So I turn to the indicative conditional model. The deliberative conditionals of this model are indicative conditionals. Roughly defined, indicative conditionals are conditionals stated in the indicative mood. There are two opposing views about the nature of indicative conditionals (indicatives, in short): view one—indicatives express propositions, and hence have truth value; view two—indicatives do not express propositions, and are neither true nor false. I treat these two views separately.

Even under the supposition that indicatives have truth value, philosophers disagree over whether indicatives are truth-functional or not. Grice and Jackson argue that indicatives are truth-functional except that their assertions should be governed by certain assertability conditions. Using an argument by Edgington, I argue that if we take indicatives to be truth-functional, then we have to agree that they are truth-functional in exactly the same way as material conditionals. So if we take indicatives to be truth-functional, then an indicative conditional model will not be significantly different from a material conditional model. I also examine Jackson's argument for the truth-functionality of indicatives and argue that it fails.

Certain philosophers, like Stalnaker and J. R. Williams, defend the view that indicatives have truth value yet are not truth-functional. Both Stalnaker and Williams defend a possible worlds semantics for indicatives (as well as for subjunctives, though the focus here is on indicatives). Following Bennett, I use a Gibbardian stand-off case to refute their view. But I will raise a new Gibbardian stand-off case that I think is superior to the ones currently available.

So I endorse the view that indicatives do not have truth value, or rather, ordinary indicatives do not have truth value. Certain indicatives are necessarily true, and Bennett calls such indicatives "independent conditionals." I argue that we have no reason to treat the deliberative conditionals in a model for divine deliberation as independent conditionals. Under the supposition that indicatives lack truth value, the common view is that indicatives serve to express their speakers' confidence in the high probabilities of the consequents conditional upon their antecedents. Therefore, when S asserts "P→Q," S's assertion indicates her confidence that Q is highly probable given P. I argue that should we adopt this view concerning the deliberative conditionals as we model divine deliberation, we had better treat God's assertion of a deliberative conditional "a→w" as indicating God's confidence that w is *certain* given a, instead of w being merely *highly probable* given a.

Therefore, under the view that indicative conditionals lack truth value, we do seem to have a model for God's deliberation. What is unique to this model is that its deliberative conditionals are indicatives, and for each deliberative conditional, its consequent is certain given its antecedent. In Chapter Five, I will compare this indicative conditional model with the model to be built under the conditional decision theory.

Chapter Five—The Subjunctive Conditional Model

The deliberative conditionals of the model in this chapter are subjunctives. Lacking a better definition, I define subjunctives as conditionals stated in the subjunctive mood such that they have would-clauses as consequents. Except for very few people like Edgington, the literature normally treats subjunctives as typically having truth value. So

given our assumption, all the deliberative conditionals are true and are consistent with one another.

According to our principle of adequacy, we need to provide a satisfactory explanation for the truth of the deliberative conditionals. But I argue that such an explanation is hard to find. I dub my conclusion "the grounding objection," after Adams's objection to the Molinist doctrine of middle knowledge. I treat grounding as synonymous with truth-making, and relying on current literature, I list three ways of grounding or truth-making.

I survey four different attempts to tackle this objection, all of which are inspired by responses to Adams's grounding objection: the Plantingean approach, the Freddosoan approach, the God's contingent act of will approach, and the semantics approach.

Both the Plantingean and the Freddosoan approach are trivial truth-making and question-begging. They also fail to satisfy Hasker's intuition that conditional truths should be grounded in categorical states of affairs. The Plantingean approach treats the truth of the deliberative conditionals as brute facts, while the Freddosoan approach compares the grounding of subjunctives to that of future contingents.

Next I treat the attempt to ground the deliberative conditionals upon God's contingent acts of will. I argue that this attempt rests on a misunderstanding of grounding, and can lead to a vicious endless regress.

The last approach suggests grounding the deliberative conditionals in terms of the semantics for subjunctives. I first deal with the classical Lewis-Stalnaker possible worlds semantics, and argue that to adopt their semantics makes one vulnerable to a "locality" objection. The possible worlds semantics deals with the truth of a subjunctive in a

particular world, yet during God's deliberation, which world is the actual world is not determined yet. One cannot save this attempted grounding by claiming that the deliberative conditionals are all true in all the feasible worlds, because that still does not explain why they are true in the actual world, i.e. the world in which God deliberates. Then, I look at a major alternative to the possible worlds semantics: the Goodman style "support" theory. I argue that using this theory to ground the deliberative conditionals equally subjects us to the locality objection.

Therefore, all the conceivable approaches towards grounding the deliberative conditionals in the subjunctive model fail, unless we adopt Edgington's position that subjunctive conditionals lack truth value. A subjunctive model that results from Edgington's interpretation of subjunctives is not significantly different from the indicative conditional model from Chapter Three.

Chapter Six—Decision Theories

Chapters two through five show that except for indicative conditionals, neither strict conditionals, nor material, nor subjunctive conditionals are good candidates for representing the relation between DCAs and the actualization of worlds. In this chapter I search for the possibility of doing the job without using conditionals. Contemporary research on decision theory has provided us with two different decision theories: conditional and causal decision theory. Traditionally, conditional decision theorists use conditional probabilities in the calculation of expected utilities, while early causal decision theorists urge the use of subjunctives instead, although later causal decision theorists do without subjunctives. I examine the positions of the two camps respectively and try to find a satisfactory proposal about modeling divine deliberation.

Under conditional decision theory, the expected utility of a given act, U(a), equals $p_1d_1 + p_2d_2 + p_3d_3 + \ldots + p_nd_n$. Here d_i stands for the expected desirability (or utility) of the ith outcome, S_i, of a; p_i stands for the probability the agent attributes to S_i given the assumption that she is going to perform a. So p_i can be written as $P(S_i/a)$. We already stipulated that each DCA corresponds with one world, i.e. a given DCA a_i is causally efficacious to bring about the actualization of a certain world w_i. So the expected utility of a given DCA, $U(a_i)$, equals $P(w_i/a_i)U(w_i) + \ldots$. I argue that $P(w_i/a_i)$ should be treated as 1, and therefore, $U(a_i)$ simply equals $U(w_i)$. There is, however, a reason to worry that $P(w_i/a_i)$ is undefined for all the DCAs: by the RATIO analysis, $P(w_i/a_i) = P(a_i \& w_i)/P(a_i)$; both $P(a_i \& w_i)$ and $P(a_i)$ are undefined during God's deliberation; so it seems that $P(w_i/a_i)$ is also undefined for God. However, with an argument from Hajek, I argue that we should not treat the RATIO analysis as definitional. That means that even though both $P(a_i \& w_i)$ and $P(a_i)$ are undefined, we may still hold $P(w_i/a_i)$ as 1 for God. At this point, it seems that the model is finished. However, just because we have to treat the conditional probabilities in the model as 1 does not mean we can actually make them to be 1. So running out of alternative explanations for the probabilities being 1, I argue that they have to be explained in terms of the causal connections between DCAs and worlds. But using that explanation will turn the model into a causal model, rather than a model under conditional decision theory.

Then I turn to causal decision theory. I canvass the major versions that are currently available: Stalnaker, Gibbard & Harper, Skyrms, and David Lewis. Both the versions by Stalnaker and Gibbard & Harper consist of subjunctive conditionals. So using either of them will commit us to a subjunctive model. I then examine Skyrms's and

Lewis's versions. Under Skyrms's version, $U(a_i) = \sum_i P(w_i/a_i)\ U(w_i)$, and $P(w_i/a_i)$ here stands for the causal propensity of a given DCA a_i. According to Lewis, $U(a_i) = \sum_i P(k_i)\ U(w_i)$, k_i being a maximally specific proposition describing how the things the agent, i.e. God, cares about do and do not depend on the act in issue, i.e. a_i. A common feature of the applications of Skyrms's and Lewis's decision theories in this context is that the relation between DCAs and the actualization of their corresponding worlds, as it is represented by God during His deliberation, ultimately boils down to a causal relation.

Therefore, under causal decision theory, we do have a consistent model, and the model that results is arguably equivalent to the model we built in chapter four with indicative conditionals and the model built under conditional decision theory. These models are different variants of the same generic causal model based on the causal connections between DCAs and worlds.

Chapter Seven—Which World Gets Chosen?

In Chapters Two through Six, I concentrated on the relation between DCAs and the actualization of worlds. In this chapter, my emphasis is upon another element: the actualization of worlds. I try to answer this important question: Which world will God choose to actualize?

Some people believe that there is a unique best world. I call this view OBW ("one best world"). Some other people believe that there are many best worlds. I dub this view MBW ("many best worlds"). The only logical alternative of these two views is called NBW ("no best world"), i.e. the doctrine that there is no best world, one or many. Klaas Kraay defends OBW. O'Connor advocates MBW. I examine their arguments and argue that their arguments are either inconsistent or involve a false premise.

Klaas Kraay is a modern defendant of OBW.[9] He argues that there is a theistic multiverse (TM) that is composed of all the universes that are worth creating, and TM is *the* best world, hence the world God chooses to actualize. But I argue that given Kraay's definition of TM, TM does not exist; or put differently, no world can satisfy his definition. So, Kraay is inconsistent with himself. I also look over Leibniz' argument for OBW, and refute it, too.

O'Connor is a proponent of MBW.[10] He argues that there are an infinite number of infinitely good worlds, and the values of these worlds are on a par with each other, and that God chooses one from these worlds. These worlds are multiverses, have an infinite number of creatures, and share some other features. One of these worlds comprises all the creation-worthy universes, while the rest do not. I argue that O'Connor's argument should be refuted. First of all, contrary to O'Connor's assertion, the worlds with infinite value are not on a par with one another. Using O'Connor's three-dimensional measurement of the value of worlds, I argue that one world with infinite value may well be superior to another world with infinite value. The second problem lies in O'Connor's proposal that the selected world for creation is to have infinite value by having an infinite number of objects. I interpret him as referring to concrete objects. But there cannot be an infinite number of concrete objects in reality, as William Craig has aptly shown. So, O'Connor's argument fails.

With Kraay and O'Connor's theories rejected, I provide two arguments of my own for the doctrine of NBW. One of them is inspired by Kraay's TM theory. The other

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[9] Kraay, "Theism, Possible worlds, and the Multiverse," *Philosophical Studies* 147, (November, 2010): 355-368.

[10] O'Connor, "Theism and the Scope of Contingency," in *Oxford Studies in Philosophy of Religion* Vol. 1, edited by Jonathan Kvanvig, Oxford, UK: Oxford University Press, 2008, 134-149.

is based on O'Connor's three-dimensional measurement of worlds' values. So, no world or worlds are more valuable than all the other worlds. But, I continue to argue that that does not constitute a problem for God. God is a perfect being, but that does not commit him to actualizing the best possible world. I endorse Adams's account of creation which includes God's gracious love as one of God's motives in pursuing creation.

Conclusion

From Chapters Two, Three, and Five we saw that a strict, material, and subjunctive model each faces serious problems. Chapter Four shows that an indicative model seems to work. In Chapter Six, we have a model built under conditional decision theory which is essentially no different from the indicative conditional model. These two models, furthermore, are essentially nothing but two variants of the model built with causal decision theory. In all these models, God's DCAs and worlds are connected via conditional probabilities which are explained in terms of the causal connections between DCAs and worlds. So they are all causal models. However, can we use a model like these to model God's deliberation? If we adopt one of these causal models, we will have to admit that by performing a DCA, God causes the actualization of the chosen world. That will further commit us to endorsing the claim that God is causally responsible for every single truth in the chosen world. But that view implies occasionalism, the highly implausible doctrine that God is the only genuine cause and no creature is ever a genuine cause. I think the only option left for us, in order to preserve the causal models, is to abandon the view that worlds are maximal consistent propositions. But where will that lead us? Lewisian realism is an option, although it is hard to defend.

CHAPTER TWO

The Strict Conditional Model

In a conditional model, the agent deliberates with conditionals. The conditionals serve to connect the alternative acts and their projected consequences. For example, when I consider what to do on Friday night, I may see myself facing two options: watching a movie in the cinema, or going to the gym. I then picture the outcomes of either option in my head: if I go watch a movie in the cinema, I will be able to see that newly released movie by my favorite director, while if I go to the gym, I will have a chance to exercise my muscles and get healthier. But notice that when I deliberate in this way, I am already committing myself to a conditional model since I am using certain conditionals to describe the outcomes of my two options. Of course, I can also choose not to use conditionals for my deliberation.

There are all kinds of conditionals available for use. These different conditionals have different natures. In an agent's deliberation a conditional serves to connect a possible act and its projected consequence. So using different kinds of conditionals in deliberation reflects the agents' different interpretations of their circumstances and carries different implications. The same is true of God's deliberation, too. When we build a model for God's deliberation leading towards creation, we also need devices to represent the connections between the alternative acts and their projected consequences. I will experiment with various ways of constructing such devices. In the first four chapters, I will deal with four different kinds of conditionals. In this chapter I will focus on the possibility of using strict conditionals to build a model. Since the representing work is

undertaken by conditionals, I will label the current model as a conditional model. Moreover, I call it a strict conditional model because the conditionals used are strict conditionals.

In the remainder of this chapter I will explain what the strict conditional model looks like, and how God uses it for his deliberation. Then I will provide two reasons why I think this model is highly problematic. On that basis, I will conclude that we should reject the strict conditional model as a candidate for modeling God's deliberation.

I. The Strict Conditional Model

A model for practical deliberation includes three essential elements: alternative acts, their projected outcomes, and whatever is used to connect the two. In a model for God's deliberation, the alternative acts are divine creative acts, in short, DCAs. The projected outcomes of the DCAs are the actualization of worlds. What connect the DCAs and the actualization of worlds, in the current model, are strict conditionals. These conditionals are called deliberative conditionals because they are used for deliberation.

A deliberative conditional is like the following:

God performs a —3 world w will be actualized.

The "—3" serves as the connective for strict conditionals. The antecedent is the statement that God performs a given DCA a. The consequent refers to the actualization of a particular world w. It is tempting to assume a one-to-one correspondence between divine creative acts and worlds: each DCA corresponds to one unique world, and vice versa, for the mere reason that that assumption lends the model an orderly look. But one world may well associate with multiple DCAs, since it is entirely possible that God can

perform any one of a group of DCAs in order to actualize a given world.[1] However, it is mistaken to think that the same DCA can be performed to actualize multiple worlds. I assume that there is only one world that gets actualized, which is our world. Other than our world, there are infinitely many other worlds, but none of those worlds are ever actualized. So imagine two deliberative conditionals sharing the same DCA in their antecedents. They will not help God decide which DCA to perform in order to actualize a unique world.

Given the standard interpretation of strict implication, p —3 q means p entails q, i.e. it is impossible that p is true while q is false. This, further, is logically equivalent to □(p⊃q). □ is the symbol for the modal modifier "necessarily," and ⊃ is the operator for material implication. Stripped of its context, the term "necessarily" is open to various readings. But here, it simply denotes metaphysical necessity, which is definable in terms of possible worlds. So, p —3 q can be interpreted as saying that in every possible world in which p is true, q is also true; or put in another way, there is no world in which p is true while q is false. Therefore, with the afore-mentioned deliberative conditional, we can say that its antecedent entails its consequent, or that it is impossible that God performs act a while world w does not get actualized. Since w will be actualized is

[1] A worry is that since worlds are maximal consistent propositions, each of them also entails a proposition describing the exact DCA that brings it into actuality, which undercuts the possibility of one world being actualizable by multiple DCAs and the need for God to deliberate over which DCA to perform once he has chosen a world to create. In my opinion, worlds do not include propositions describing the DCAs that bring them into actuality. Under the Platonist view which I subscribe to, only one world is the actual world. Despite the truth that each world is actual for itself, there is only one actual world. So the worlds that do not get actualized lack propositions indicating them being actualized. Besides, since we have assumed that God is free to decide which world he will create, it is genuinely indeterminate which world is the actual world while God is deliberating. Hence, in the phase of God's deliberation, worlds are not really maximal because none of them entails the proposition specifying whether each of them is to be selected or not. It is God's decision as to which world to create and which DCA to perform that generates those propositions and renders worlds maximal in the literal sense.

synonymous with w will be true, that deliberative conditional can be briefly referred to as "a entails w."[2]

Now we have gone over the three key elements of the model. Turning to the most important question, how does God use the model for his deliberation? I think there are three logical moments that God undergoes in turn: God first compares the worlds feasible for creation, i.e. the worlds that are mentioned in the consequents of the deliberative conditionals, and picks one world for creation; then God identifies the deliberative conditional whose consequent denotes the actualization of the chosen world; at last, God performs the divine creative act in the antecedent of the same deliberative conditional, and the chosen world starts to become actual.

It is worth emphasizing that the actual world always exists. God is a necessary being. So God necessarily exists. Therefore, the actual world, as the "receptacle" of God's existence, necessarily exists because God's existence presupposes a world. But before God's creation, the actual world has a limited population: God along with abstract entities like propositions, properties, and essences. God is the only concrete member of the population. Once God's creation starts, other concrete beings start rolling in: angels, humans, mountains, animals, and so forth. God's decision to create a particular world also determines which world is going to be the actual world, or put differently, which maximal consistent proposition is going to be true of the actual world. Because we assume God's creation to be genuinely free, before God's decision to create, it is genuinely undetermined which world is going to be the actual world. Any feasible world

[2] To say a world is actual is an alternative way of saying that world is true, under the assumption that worlds are maximal consistent propositions.

could have been the actual world, and the actual world could have developed into any one of the feasible worlds.

I treat creation and actualization synonymously. To create a world is nothing other than to actualize a world. The chosen world, as an abstract big chunk of proposition, becomes real. Properties get exemplified; individual essences become instantiated; the component propositions of the chosen world become true. I see these as a process of actualizing, and creation consists of a wide range of actualization.

Thus I have introduced the main components and features of the strict conditional model. From my introduction, it seems that the model does provide us with a consistent picture of creation. However, in what follows, I shall provide two reasons for my conclusion that we should reject this model. The first reason is that we have no way to account for the entailment relations between DCAs and worlds. The second reason is that it is highly implausible to think that there are such entailment relations between DCAs and worlds.

II. The Entailment Relations Are Hard to Explain

The deliberative conditionals should all be true. There are only two possible situations in which one deliberates with false conditionals.[3] Either one does not know those conditionals are false and mistakenly thinks that they are true, or one knows they are false but thinks that using those conditionals for deliberation will help her reach the right decision. Neither of these situations applies to God. Being omniscient, it is impossible for God to mistakenly take a false proposition to be true. Moreover, there is no reason to think that God should treat a group of false propositions as useful guides for

[3] An exception is when the deliberative conditionals cannot have truth value, such as indicative conditionals which I will discuss in Chapter Four.

his practical decision. This happens only when God knows what the real connections between DCAs and worlds are and yet thinks that using a group of false representations of their connections will enable him to reach the same decision as he would have using the true representations. But when we build a model for God's deliberation, we need not digress this far. Why don't we simply use propositions that accurately represent the connections between DCAs and worlds? There is no reason to think that such propositions do not exist.

So we should agree that the deliberative conditionals are all true. Because they denote the entailment relations between DCAs and worlds, their truth means those entailment relations do obtain. But the question is: why should we think that those entailment relations obtain? It seems that we should provide a good explanation.

Can we simply stipulate that those deliberative conditionals are true, without providing any explanation? We can, but that will reflect on the model. A model that furnishes no explanation for the truth of its deliberative conditionals is not as adequate as a model which does. So providing an explanation will help make the model more informative and hence more adequate. Besides, the reason we build a model is to help us understand something complex. So we should try our best to make the elements of a model easy to understand. But something posited with no explanation is probably not easy to understand. Of course, there is always an end to explanation. I think that the last stage of explanation should only have familiar elements doing the work.

So let's try to explain the truth of the deliberative conditionals. We can draw a comparison between our deliberative conditionals and ordinary necessary truths. Notice that the antecedents of our deliberative conditionals are divine creative acts and their

consequents are world actualizations. First, our deliberative conditionals are not explicit logical truths like "p entails p" or "p entails p V q," and they are much less likely to be mathematical truths. Deliberative conditionals, as they are, do not report logical rules, and neither do they instantiate any general logical rule. Second, they do not seem to be implicit logical truths, either. Implicit logical truths have their necessity based on the meaning of terms or phrases. An implicit logical truth can go like this: "If Jane is more than five years old and Tom is older than Jane, then Tom is more than five years old." One cannot find a trace of implicit logical truths like this in the deliberative conditionals. The meanings of the terms within deliberative conditionals do not seem to involve or overlap with each other. Third, the deliberative conditionals are not *a posteriori* necessary truths like "water is H_2O" or "every object with color has spatial extension." Empirical research does not tell us and can never tell us about the entailment relation between DCAs and the actualization of worlds. But if our deliberative conditionals do not fall into any of the three kinds of necessary truths, then where exactly is their necessity from?

Can we appeal to God's essence or essential properties to explain the truth of the deliberative conditionals? Evidently, we cannot simply say that God's essence is *such that* the deliberative conditionals are true. An explanation like that is mysterious and uninformative. We can make similar claims about all necessary truths. For example, we can say that God's essence is such that necessarily, if a number is larger than ten, then it is larger than nine. So in order to arrive at a real explanation for the deliberative conditionals, we need to point out a specific property owned by God that accounts for their truth. I don't think such properties can ever be found.

How about the causal connections between DCAs and worlds? If their causal connections prove to be strict implications, then we do have a good explanation for the deliberative conditionals. Quite naturally, when God selects a world and then performs a DCA so that he can actualize the selected world, God picks a DCA that is efficacious for bringing about the actualization of the selected world. No matter what conditionals or propositions we use to bridge the gap between DCAs and worlds, the DCAs and their corresponding worlds should be causally connected. It would be absurd to think that God performs a DCA that implies (in whatever manner) the actualization of a particular world yet that DCA does not cause the actualization of the latter. However, the causal connection is insufficient to account for the deliberative conditionals, which are necessary truths.

Normally, when we ascribe a causal connection to two events, we do not thereby conclude that the cause entails the effect.[4] For example, I hit the switch and the light is on. So my hitting the switch is the cause of the light being turned on. But it is clearly possible that I hit the switch and the light is not turned on. In an alternate world, I hit the switch yet the light is not on because the loop is broken somewhere, or the light bulb explodes due to a lightning strike the very moment I hit the switch. The possibilities that these can happen are sufficient to show that my hitting the switch does not entail the light being turned on. Can we get an entailment relation between the cause and the effect by

[4] In history, Jonathan Edwards argues that causal relations are necessitating, viz. causes necessitate the occurrence of their consequences. One of his arguments goes like this (84): Suppose event B is caused by event A, but is not necessarily connected with it. Thus, B might have followed A and B might not have followed A. Then why did B follow A rather than not? What is the cause of that? Apparently A must not be the cause for that, because on another occasion, *ceteris paribus*, B might not have followed A. It then seems that we can't find its cause, which is bad because supposedly every contingent thing has a cause. Thus the supposition that B is caused by A without being necessarily connected with it is false. Therefore, causes and their results are necessarily connected. See Jonathan Edwards, *Freedom of the Will*, New York, NY: Cosimo, Inc, 2007, Part II, Section 3 & 8. I find his argument question-begging.

specifying the cause and the effect? For example, the entire state of the world at the time of my hitting the light causes, and also entails, the entire state of the world at the time of the light being turned on. Enhancing the level of specificity does seem to bring us causal necessity. But causal necessity is not equivalent to metaphysical necessity. Suppose we have two events p and q, and also suppose that given the laws of nature, p causes q. But this does not guarantee that p entails q. God may perform a miracle such that while the laws remain the same, p fails to bring about q. To illustrate this claim, let's look at the following claim:

> (W) Under the normal atmospheric pressure, heating the water to 100 Celsius degrees will cause the water to boil.

W is a law of nature. But heating the water to 100 Celsius degrees under the normal atmospheric pressure does not entail that the water boils. It is possible for God to intervene by preventing the water from boiling. However, if we add the qualifications that God performs no miracles and that laws of nature are not stochastic, we do seem to have an entailment relation between the cause and effect in issue. And that is the only way, I think, to obtain a necessitating relation in any causal relation.

Therefore, we can indeed explain the entailment relation between the DCAs and the worlds by appealing to their causal connection, so long as we can add the relevant laws of nature and the qualifier that God does not perform miracles to breach those laws of nature. Take the deliberative conditional a —3 w for an example, a being a DCA and w being its corresponding world. To make the entailment relation between a and w more salient, we can revise the deliberative conditional into

(God performs a & the laws of nature of w & God performs no miracles) —3 (w becomes actual).

However, it is disputable whether in each feasible world there are laws of nature that govern God's creative acts as such. It is difficult to disprove the existence of such laws, but it is also difficult to prove their existence. So it seems rather ad hoc to simply posit their existence. To make the problem worse, not all the laws are as strict as W. Some laws of nature are purely probabilistic. How can we prove that the laws of nature in a given world that govern God's creative acts are not probabilistic? If we cannot rule out the possibility of the laws being probabilistic, then we cannot assert the existence of the entailment relations even with the qualification that God performs no miracles to break the laws.

In summary, the truth of the deliberative conditionals forms an insurmountable road block as we proceed to finish the construction of the model to make it adequate. We have discovered that the necessitating relations between DCAs and worlds are not similar to any known necessities, and cannot be explained in terms of God's essence or God's property or in terms of the causal connections between DCAs and worlds. The failure to explain the truth of the deliberative conditionals leaves the model inadequate and hence defective. In the next section, I will further argue that not only are the entailment relations unexplainable, they are also implausible. In other words, we shouldn't believe that God's creative acts entail the actualization of worlds.

III. The Entailment Relations Are Implausible

The deliberative conditionals are true. According to these conditionals, God's performing DCAs entails the actualization of worlds, and it is impossible that God

performs a DCA while no world gets actualized. But I shall argue that such entailment relations are implausible.

Here goes my argument. Given our assumption, God is free to decide which DCA to perform, and God is also free to decide whether to perform a certain DCA or not. On the other hand, as a free being, God is also free to decide whether to perform miracles or not and when to perform miracles. So God's performing a DCA is free, and God's performing miracles is also free. However, it is implausible to think that a free action by an agent S at time t_1 should entail another free action by S at a future time t_2. God's performing miracles is supposed to take place at future times relative to God's performing a DCA. Therefore, it is implausible to think that God's performing a DCA should entail God's performing miracles. If the deliberative conditionals are true, then we have to think that DCAs do entail miracles. Therefore, it is implausible to think that the deliberative conditionals are true.

The antecedent of a deliberative conditional is that God performs a given DCA, and its consequent is that a given world w gets actualized. That w gets actualized means that the propositions that constitute w are true. So a deliberative conditional, in effect, states that God's performing a given DCA entails every true proposition in a given world. When God is deliberating, the actual world[5] already exists but it is indeterminate which maximal consistent proposition will be true of the actual world. To put it roughly, the actual world is in an obscure state with an indeterminate future, and God's creation assigns the actual world a definitive future. Since a world is a maximal consistent proposition, any facts and events that take place in that world have their corresponding propositions that serve as components of the maximal consistent proposition. We know

[5] This refers to the obscure primitive setting which houses God and diverse abstract entities.

that God performs miracles in worlds, at least judging by what has happened in the actual world. So what miracles God performs and when God performs those miracles should also be included among the component propositions of a world. It follows that in a given deliberative conditional, a given DCA entails every true proposition of a given world, including the propositions that specify what miracles God performs and when God performs those miracles in that given world.

But we should not think that DCAs entail miracles, on the basis of the statement below:

(E): A free action by an agent S at t_1 cannot entail a free action by S at a future time t_2.[6]

God's miracles are performed at future times relative to God's performing a creative action. So if E is true, then God's DCAs cannot entail God's miracles. Because the deliberative conditionals require that DCAs entail miracles, the deliberative conditionals are mistaken.

And E is certainly true. God has libertarian freedom with regard to his DCAs and miracles. A libertarian free action has genuine alternatives. So, an action a by an agent S is free only if S could have performed an action other than a. Suppose a and b are two free actions by the same agent S, and a and b are performed at t_1 and a relatively future time t_2. Also suppose that a entails b. So necessarily, once S has performed a, S also performs b. So at time t_2, S has to perform b, with no other options. But this contradicts the presupposition that b is a free action by S. Therefore, a free action performed at an earlier time cannot entail a free action at a later time. Hence, E is true.

[6] Here, by "free" I mean non-derivatively free.

One may try to find counterexamples to E. Suppose T is a one-of-a-kind being in that T has the innate disposition to keep promises. Necessarily, whatever promises T makes, T delivers on those promises. Of course, we also need to assume that T has the power to deliver on all the promises he makes. But simultaneously, T is a free being with regard to making promises. So, as we can see, before T makes a promise, T is free as to whether to make that promise or not, and T is also free as to whether to perform the action related to the promise. Is this an example of a free action at t_1 entailing another free action at t_2?

T's example is not a counterexample to E. There is a restriction in T's example: T's actions to deliver on his premises are free only before T makes promises, but once he makes his promises, those actions have to be performed, beyond T's free[7] control. But proposition E does not have that restriction on the free actions. What E says is that a free action by an agent S at t_1 cannot entail an action by S that is freely performed at a future time t_2. So, the second action is free even after S has performed the earlier free action. This proves that T's example does not constitute a counterexample to E.

But one might wonder whether God is free at the moment of performing the miracles he performs. Perhaps God is free to perform those miracles only before he performs his creative act, but no longer free regarding them once he has performed a chosen creative act, just like in T's case. But why should we think that way? The only reason I can think of is that at the end of his deliberation, God decides to actualize a selected world. But why should we think that that decision made by God entails that God is to perform such-and-such miracles? A decision is not a promise. It is totally reasonable to think that God has the freedom to overthrow that decision later on, and

[7] Again, "free" means non-derivatively free.

therefore, chooses to perform different miracles compared with what the original decision implies.[8] Furthermore, even if we do agree that God's decision to bring about a chosen world entails what miracles God is about to perform, that only shows the entailment relation between God's decision to bring about a chosen world and the miracles God performs in that chosen world. From that relation, we cannot deduce that there is an entailment relation between the DCA God performs and the miracles God is about to perform later. As I mentioned earlier, the same world can be brought about by different DCAs. So from God's decision to actualize a certain world, we cannot deduce that God has to perform a given DCA. So, to sum up, we have no good reason to think that God is in a similar situation as T, and even if they are similar, we have no reason to think that there are entailment relations between DCAs and worlds.

My argument is, therefore, triumphant. It is implausible to think that God's DCAs entail what miracles God is to perform, while the deliberative conditionals entail this entailment relation between DCAs and miracles. So, we should not think that the deliberative conditionals are true. Put otherwise, it is implausible to think that God's DCAs entail the actualization of worlds.

Conclusion

In this chapter I demonstrated two points: first, we have no resources to account for the truth of the deliberative conditionals; second, the truth of the deliberative conditionals has an implausible consequence. So, I suggest that we should give up the strict conditional model and start looking at its alternatives.

[8] If God changes his mind and decides to actualize a different world later, does that mean God was mistaken about which world was to become the actual world? I'm not sure.

CHAPTER THREE

The Material Conditional Model

In the previous chapter, we saw how the strict conditional model didn't work well. The problems with the model are two: we are unable to account for the strict implications posited by the model, and the strict implications have a counter-intuitive implication. In this chapter I shall explore the possibility of using material conditionals to represent the relations between God's divine creative acts (DCAs in short) and the actualization of worlds. I shall do three things in this chapter. First of all, I shall briefly discuss the nature of material conditionals and lay out the details of the material conditional model. Secondly, I shall discuss one general problem with deliberating in terms of material conditionals. Using a hypothetical day-to-day scenario, I will argue that deliberating with material conditionals can lead the agent to confusion and leaves the agent incapable of making a decision. And I explain that an analogous problem arises with the material model for God's deliberation. Then in the last part of this chapter I shall argue that another problem with the material model is that given this model, God is incapable of knowing the deliberative conditionals. Therefore, I shall draw the conclusion that the material conditional is unsuitable for being used to model God's deliberation, no matter what one's metaphysical position is.

I. Introduction

In this section, I will lay out the details of the current model. The deliberative conditionals are material conditionals. Their antecedents are DCAs, and their

consequents are world actualizations. I will use a flat horseshoe to signal material implication. A typical deliberative conditional is like this: "If God performs DCA a_1, then world w_1 will become actualized." It can be symbolized as

God performs $a_1 \supset$ world w_1 will become actualized.

In a simpler form, it can be written as

$a_1 \supset w_1$.

All the deliberative conditionals are true, as I explained in Chapter One. When deliberating which world to create, God considers the creative acts and compares the levels of preference he has for the worlds that these acts are associated with. Then God picks the world that he prefers to create and performs the creative act corresponding with that world. By *modus ponens*, when God performs a creative act denoted by the antecedent of a particular deliberative conditional, the consequent of that same conditional—the actualization of the chosen world—will be true. So the world involved in the consequent will thus become actualized. This is the big picture of Creation based on the material conditional model.

Now let us take a closer look at the deliberative conditionals. In the material conditional model, the deliberative conditionals are material conditionals. Different from indicative or subjunctive conditionals, material conditionals were invented by logicians to cope with technical issues. The term—material conditional or material implication—was first made up by Russell and Whitehead. It denotes a kind of truth-functional conditional: being truth-functional, the truth value of material conditional $p \supset q$ is a function of the truth values of its propositional components—p, q. The material conditional $p \supset q$ is true

if and only if (~p or q) is true.[19] Although the name—material implication—was given by Russell and Whitehead, it is Frege who first came up with the notion of a conditional whose truth value is determined by the truth values of its components in the aforementioned way. He first mentioned it in §5 of his *Begriffsschrift*, which was published in 1879.[20] There he didn't use "true" or "false" as we do here, but used "affirmed" and "denied" instead. He also discussed this kind of conditional in his *Introduction to Logic*, published in August 1906.[21] Not just did Russell and Whitehead inherit this notion of conditional, but so did Wittgenstein and the logical positivists. And today material conditionals have become a key element of classical propositional logic. It is worth noticing that neither Russell nor Frege treated ordinary language conditionals as equivalent to material conditionals. Frege used material conditionals primarily for his Leibnizian predicate calculus, and Russell and Whitehead used material conditionals in their philosophy of mathematics. For these philosophers, material conditionals remained a tool for dealing with technical subjects.

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[1] The most usual way of defining $p \supset q$ tends to put its truth condition as it being not the case that p is true and q is false. The defect of that definition is that when p lacks truth value, $p \supset q$ is automatically true, which is absurd. This problem does not trouble my definition above.

[2] Peter Geach & Max Black eds, *Translations from the Philosophical Writings of Gottlob Frege*, New York, N.Y.: Philosophical Library, Inc., 1952, 5-6. Frege didn't explain why he set the truth-function of the conditional in issue the way he did. Dorothy Edgington has argued, on several occasions, that if a conditional is truth functional, then its truth value will be determined by the truth values of its antecedent and consequent in the way defined by Frege. See Edgington, "On Conditionals," *Mind* 104, No. 414 (April, 1995), 242, and Edgington, "Do Conditionals Have Truth Conditions?" in Frank Jackson ed, *Conditionals*, Oxford: Oxford University Press, 176-201.

[3] Gottlob Frege, *Posthumous Writings*, edited by Hans Hermes *et al*, translated by Long and White, Chicago: The University of Chicago Press, 1979, 186-187. It is worthwhile to notice Frege's remarks here that followed his definition of the given conditional: "It is now almost 28 years [since 1879 until 1906, my note] since I gave this definition. I believed at the time that I had only to mention it and everyone else would immediately know more about it than I did. And now, after more than a quarter of a century has elapsed, the great majority of mathematicians have no inkling of the matter, and the same goes for the logicians. What pigheadedness!"

One clarification on tense is necessary. One feature of material conditionals is that the falsity of their antecedents is sufficient for the truth of the conditionals themselves. But if we look at the deliberative conditionals, we may find that none of their antecedents is true. The reason is simple: the antecedents denote divine creative acts, i.e., the antecedents of the deliberative conditionals state that God takes creative acts, while during the process of divine deliberation, God hasn't performed any of the creative acts yet; therefore, the antecedents of the deliberative conditionals—e.g. God performs a particular creative act a_1—are false. This may mislead us into thinking that all the deliberative conditionals are true *simply* because they have false antecedents. But a satisfactory model cannot allow it to happen that the deliberative conditionals are true merely because they have false antecedents. One reason for this is that this will sever the antecedents and consequents of the deliberative conditionals, thus failing to show how God's creative acts connect with world actualizations. Another reason is that, by making the truth of the deliberative conditionals a direct result of the automatic falsity of their antecedents, the model either reduces the truth of the deliberative conditionals into being trivial or leaves the real explanation of their truth in the mist. To avoid this misleading effect, I will adopt the future tense for the antecedents of the deliberative conditionals. Then a deliberative conditional will be like:

God will perform $a_1 \supset$ world w_1 will get actualized.

Now, with the new deliberative conditionals, we can no longer say that their antecedents are automatically false during God's deliberation. Actually, all we can say about the antecedents is that either they have no definitive truth values during divine deliberation or all of them are false but one, i.e. the one having the actual creative act God will perform

and the world that eventually will get actualized. And thus no one may be misled into thinking that the deliberative conditionals are true simply because they have antecedents that are automatically false. Below when I argue for the second problem with the material model, I shall further discuss the truth values of the component statements of the deliberative conditionals.

II. A Distinction on Deliberations That Employ Material Conditionals

Few people deliberate with material conditionals in real life.[22] It is probably because material conditionals, with its truth-functional nature, are strange to ordinary language users. But even philosophers who know material conditionals well are reluctant to employ material conditionals in their deliberation. Again, I believe the explanation lies in their truth-functional nature. In this part, I explore the nature of deliberations that rely on material conditionals and draw a distinction on that. This part is intended as a prelude to the ensuing discussion.

One might think that deliberating with material conditionals is far from challenging or preposterous. Suppose the closest gas station is sixty miles away, and the gas tank has only one gallon of gasoline in it. Thomas thinks to himself that

> (G) If I drive to the gas station, I will not be able to reach it before burning up all the fuel in the car.

Now Thomas might insist that G is a material conditional and is true, and Thomas might, on top of that, insist on using G in his deliberation as to what to do next. Indeed, G sounds reasonably true. But uttered in natural language, G is an indicative conditional,

[4] It seems that people do use material conditionals when thinking about mathematical theorems. But in day-to-day life, people tend not to use material conditionals when they attempt to connect actions and their consequences.

and it is exactly by being an indicative conditional that G first appears reasonable to Thomas. To use the Ramsey test to evaluate the assertability of indicative conditionals, Thomas finds G assertable (or acceptable—the distinction does not matter here) because the subjective probability Thomas assigns to G's consequent given the assumption that its antecedent is true is high.[23] Because the indicative conditional "if p, then q" seems to imply the material conditional "p ⊃ q," Thomas is right to claim G as a true material conditional.[24]

Could one disagree by claiming that Thomas simply starts out with the intention of finding true material conditionals to guide his practical decision and finds G reasonably true as a material conditional? Imagine Thomas does start out with the intention of finding true material conditionals regarding his situation. The antecedent and consequent of G are respectively neither true nor false. While Thomas is deliberating, he hasn't decided whether to drive to the gas station or not. It is indeterminate whether he will do that and whether he will use up his fuel before arriving. Can Thomas assign truth values to the antecedent and consequent while he is deliberating? No. Does he know whether he will drive to the gas station or not? No, because that is exactly what he is trying to figure out based on the conditionals he will find. Does he know whether he will be able to reach the gas station before he burns up all the fuel in the car or not? He does

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[5] According to Gibbard's interpretation, the Ramsey test is 'the thesis that, in whatever ways the acceptability, assertability, and the like of a proposition depends on its subjective probability, the acceptability, assertability, and the like of an indicative conditional A→C depend upon the corresponding subjective conditional probability.' See Gibbard's "Indicative Conditionals and Conditional Probability: Reply to Pollock," in Harper *et al*, eds, 253-256.

[6] I am fully aware of the whole controversy as to whether indicative conditionals have objective truth value. But here, I am making the psychological observation that an average person who accepts "if p, then q" tends to find the corresponding "p ⊃ q" true as well. Of course, the word "imply" does seem to commit me to the position that indicative conditionals are objectively true or false. However, due to lack of a better word, I will stick to it for the moment.

not know, otherwise he won't be deliberating. So Thomas cannot tell the truth value of G by discovering the truth values of G's component statements. Can Thomas know the truth of G by knowing the disjunction that G is logically equivalent to, even though he does not know the truth values of that disjunction's components either? I don't see how he can know the disjunction unless he knows it from testimony or infers it from the indicative conditional that G can be easily confused with. Therefore, it makes little sense to claim that G initially strikes Thomas as a reasonably true *material conditional*. If Thomas finds G true at all, that attitude of his most likely derives from his belief in the plausibility of G as an indicative conditional.

It might also be the case that G's plausibility to Thomas derives from his belief in the plausibility of the corresponding subjunctive conditional:

(G') If I were to drive to the gas station, I would not be able to reach it before burning up all the fuel in the car.

Thomas might find G' reasonably true because he believes that the causal laws along with the supposition that he drives to the gas station entail that he would not be able to reach it before using all the gas. But even in that case, G does not strike Thomas as plausible as a material conditional without deriving its plausibility from some other conditional it is related to.

So deliberating with material conditionals does seem a bit untraditional or preposterous. The reason is that, as I have already pointed out, when one deliberates over whether to take an action a, one does not directly know the truth of a material conditional with "I will do a" as its antecedent although one might know (or accept) its truth via deriving it from its corresponding indicative conditional or subjunctive conditional. But

if the acceptability of a material conditional derives from its corresponding indicative conditionals or subjunctive conditionals, then why not use those incurred indicative conditionals or subjunctive conditionals to deliberate, instead of making one extra move and using material conditionals for deliberation? Suppose one's belief in $p \supset q$ derives solely from one's belief in "if p, then q" or "if p were the case, then q would be the case." I don't see what extra good can be brought in by insisting on using $p \supset q$ for deliberation rather than the latter two conditionals. Therefore, I will draw a distinction on how one might use material conditionals in deliberation. The first way is the one we have been discussing: one's confidence in a material conditional is derived from one's confidence in its related indicative or subjunctive conditional. The other way is that one uses certain material conditionals for her deliberation without knowing their truth or accepting them as true on the basis of one's confidence in their related indicative or subjunctive conditionals. If God's deliberation using material conditionals is in the first way, then there is ultimately no value in spending an independent chapter discussing such a material conditional model. The prospect of a successful material conditional model like that is to be determined by whether an indicative or subjunctive conditional model will work or not. The reason is that a material conditional model like that presupposes God's confidence in a set of indicative or subjunctive conditionals and has no real advantage over an indicative or subjunctive model. Therefore, in this chapter, my discussion will focus on a material conditional model that goes in the second way.

III. A General Problem

Compared with indicative or strict conditionals, it is easier for material conditionals to be true. While a material conditional is true as long as its antecedent is false or its consequent is true, the truth of indicative and subjunctive conditionals places a more taxing demand on the connection between their antecedents and consequents. The paradox of material implication perfectly illustrates that. Because of this feature, deliberations with material conditionals are susceptible to a general problem.

Suppose Thomas is determined to watch the most recent episode of the *Twilight* series. It is only to be shown once tonight at the local cinema, and Thomas knows that well except that he does not know exactly when it is to be shown. But Thomas knows how to find that out through visiting the website of the cinema. So the following statement is true for Thomas (and for anyone): Q—Thomas will watch the newest *Twilight* episode tonight. Because of its truth, Q can be used to form various true material conditionals with Q being their shared consequent. For example, the following material conditionals are all true:

(1) If Thomas goes to the cinema at 7 p.m., Thomas will watch the newest *Twilight* episode tonight.

(2) If Thomas goes to the cinema at 9 p.m., Thomas will watch the newest *Twilight* episode tonight.

(3) If Thomas goes to the cinema at 11 p.m., Thomas will watch the newest *Twilight* episode tonight.

All of (1), (2), (3) are true, given the supposition that they are material conditionals and their consequents are true. Now further suppose that Thomas is a person taking material

conditionals seriously. He genuinely treats material conditionals as practical guides, and uses true material conditionals to guide his practical deliberation. Now, concerning when he should go to the cinema in order to catch the only show tonight, his material conditionals tell him that no matter when he goes to the cinema, he will be able to watch the newest Twilight episode tonight. Following these conditionals, there is no need to even check the cinema's website to find out the exact time of the show. But this is absurd: of course Thomas must go to the cinema before its show time in order not to miss the movie; if he goes there too late, he may completely miss it.

Now you might think that Thomas can actually check the schedule of the local cinema and find out the specific show time, say 9:30 p.m. Then Thomas will only find (2) plausible and (2) will indeed be useful for guiding Thomas's decision. However, as I have argued in the previous section, if Thomas does indeed know that the movie will be shown at 9:30 p.m. and find only (2) plausible, what Thomas directly finds to be plausible is (2) as an indicative conditional and (2) as a material conditional is only indirectly found to be plausible. If Thomas is always stuck to (2) as a material conditional, I can't imagine how finding out the show time can help Thomas affirm (2) as more plausible than (1) and (3) since (1), (2), and (3) are equally true to Thomas as material conditionals. Or Thomas might find (2) plausible because he finds (2)'s related subjunctive conditional

(2)' If Thomas went to the cinema at 9 p.m., Thomas would watch the newest Twilight episode tonight

plausible. In summary, suppose Thomas check the schedule and finds (2) to be more plausible than (1) and (3), (2)'s plausibility derives from the plausibility of (2) as an

indicative conditional or the plausibility of (2)'. Provided that Thomas only uses the material conditional (2) for his deliberation, his deliberation is employing (2) in the first way, i.e. finding it plausible because of finding its related conditional(s) plausible. However, the first way of using material conditionals in deliberation is not significantly different enough from directly using indicative or subjunctive conditionals in deliberation, and I have already stipulated that in this chapter I discuss the second way of deliberations relying on material conditionals. And given the second way, the agent does not rely on material conditionals whose plausibility is derivative from the plausibility of other related conditionals. Hence in Thomas' case, finding the airing time to be 9:30 p.m. does not cause Thomas to find (2) more plausible than (1) and (3). Therefore, as long as we hold Thomas to be using material conditionals for his deliberation in the second way, his credence in (1), (2), and (3) remains unchanged even after he finds out the airing time. Because the three conditionals tell him that whenever he goes to the cinema he will be able to see the movie, his deliberation will be misled by these conditionals.

Thomas's case reveals a serious problem with material conditionals: they are unsuitable for being used in practical deliberation because they are too easy to be true. In the Thomas's case above, he is determined to watch a certain movie and he knows that he has the capacity to do that. So any material conditional with "Thomas will watch the newest *Twilight* episode tonight" is true. As a result, these true material conditionals fail to provide any interesting information to help Thomas distinguish the truly effective actions from those ineffective ones. Therefore, they are useless in practice. To make things worse, they are misleading, too.

A similar problem arises with the material conditional model for God's deliberation. God is faced with a wide range of options: w_1, w_2… w_n. Suppose God has decided to actualize w_n. The next step for God should be to select the right DCA that is efficacious for bringing about w_n. However, the deliberative conditionals in the material conditional model does not help God discover the right DCA, because there is a subgroup of deliberative conditionals that all share w_n as the consequent and have each of a_1, a_2, …, a_n as their respective antecedent. The conditionals in this subgroup are all true and share the same formal features as the deliberative conditionals: having DCAs as antecedents and worlds as consequents. Furthermore, we have supposed that God uses material conditionals for his deliberation in the second way. So the conditionals in this group are equally true as the deliberative conditionals and God is supposed to treat them on a par with the deliberative conditionals. But God can be misled by the conditionals in this group, since they seem to suggest that whichever DCA God picks to perform, he will be able to actualize the world of his choice. But of course that is not the case. So the general problem with deliberations that employ material conditionals also infects the material conditional model and renders the model highly defective.

A clarification may be necessary. Could someone defend the material conditional model by arguing that God knows the causal connection between a_n and w_n and hence God knows that

(D) If he does a_n then w_n will be actualized?

On that basis, the defender of the current model may argue that God actually knows which DCA to perform in order to effectively bring about w_n. But my question is, what kind of conditional is D? We have decided to keep God's use of the material conditionals

limited to the second way. In the second way, the plausibility of the deliberative conditionals is not inferred or derived from their related indicative or subjunctive conditionals. So D has to be a material conditional, just like the other deliberative conditionals. If D is a material conditional, then knowing the causal connection between a_n and w_n does not lend God more confidence in D than in the other deliberative conditionals. If so, then why think D delivers more plausibility than the other deliberative conditionals that have different DCAs as antecedents and share wn as their consequents? So the misleading effect of the material conditional model remains in tact. Because of this serious problem, I conclude that we should abandon the material conditional model. In the next part, I uncover another problem with the model which will make my point even more conclusive.

IV. How Does God Know the Deliberative Conditionals?

The deliberative conditionals are useful for capturing the connection between DCAs and worlds, and knowing their connection is crucial for making an informed decision as to what to do to bring about the chosen world. But on the current model, it seems that God does not really know, or rather, cannot know the deliberative conditionals during the process of his deliberation. This constitutes another serious problem with the material conditional model and adds further support to my suggestion that we should give up this model.

All the deliberative conditionals have the same formal feature: their antecedents denote DCAs; their consequents refer to the actualization of worlds. So a typical deliberative conditional looks like:

God will perform $a_1 \supset$ world w_1 will get actualized.

During God's deliberation, God has not yet performed any of the DCAs listed in the antecedents, and none of the worlds in the consequents has been actualized yet. But the antecedents and consequents of the deliberative conditionals are cast in the future tense and describe future states of affairs. So despite that God is still deliberating, the antecedents and consequents of the deliberative conditionals, themselves as independent statements, already have truth value. Suppose w_0 is the world God will choose to actualize, and a_0 is the DCA efficacious for bringing about w_0. Thus, while God is deliberating, the following two statements are already true:

God will perform a_0;

World w_0 will get actualized.

And the remaining antecedents and consequents are all false:

God will perform a_1;

God will perform a_2;

….

World w_1 will get actualized;

World w_2 will get actualized;

….

Their truth values also ground the truth of the deliberative conditionals:

(D_1) God will perform $a_1 \supset$ world w_1 will get actualized;

(D_2) God will perform $a_2 \supset$ world w_2 will get actualized;

…;

(D_0) God will perform $a_0 \supset$ world w_0 will get actualized.

Deliberative conditionals like D_1 and D_2 are true because their antecedents and consequents are both false. The deliberative conditional D_0 is special in that its truth is grounded on the truth of its antecedent and consequent. So the truth of the deliberative conditionals is indeed grounded.

Because of the truth-functionality of material conditionals, there are a number of other material conditionals that look just like the deliberative conditionals and are true as well:

God will perform $a_1 \supset$ world w_2 will get actualized;

God will perform $a_0 \supset$ world w_1 will get actualized;

…;

God will perform $a_1 \supset$ world w_0 will get actualized.

Will these conditionals cause confusion for God? God may be unable to distinguish these ersatz deliberative conditionals from the real ones. But that is not what I am getting at. The real problem for the material model is that God cannot know the truth of the deliberative conditionals; nor can God know the truth of these ersatz ones.

The current model we are considering is a model for God's deliberation. God performs a deliberation as to which world to actualize and which DCA to perform in order to bring about the chosen world. So the deliberation is a process of God searching for the right world and the right DCA. The process ends when God makes up his mind about what to do, but until the deliberation ends, God has not made up his mind about what to do yet. So in the middle of the deliberation, God does not know what he will bring about and which DCA he will perform to consummate the creation. That means

during his deliberation, God does not know that he will perform a_0 and world w_0 will get actualized. Nor does God know that he will not perform a_1 and world w_1 will not get actualized, etc. Therefore, God does not know the truth values of the component statements of the deliberative conditionals. So God does not know the truth of the deliberative conditionals.[25] In consequence, God cannot rely on the deliberative conditionals for his deliberation. This forms another serious problem with the current model and hence another reason why we should abandon the current model.[26]

Here one may object to my claim. One may point out that God can know the real deliberative conditionals by knowing the causal connections between their respective antecedents and consequents, even though God does not know the truth values of these component statements. But I disagree. Admittedly, for the real deliberative conditionals, each of their antecedents denotes a DCA efficacious for bringing about the actualization of a corresponding world. But it is mistaken to think that God's knowledge of these causal connections enables God to know the real deliberative conditionals.

We have already stipulated that God's use of material conditionals in his deliberation is in the second way, i.e. God's credence in the material conditionals is not derived from his credence in the relevant indicative or subjunctive conditionals. But if that is the case, I can't imagine how God's knowledge of the causal connections between DCAs and worlds serves to directly provide for his knowledge of the deliberative conditionals. I emphatically do not see how anyone infers a material conditional directly from a causal connection. Suppose I have a hammer in hand, and I know my swaying the

[7] Turning to disjunctions will not help in this situation, either.

[8] In his *Destiny and Deliberation: Essays in Philosophical Theology*, manuscript, Kvanvig rejects the material conditional model on a similar yet different ground. See 108-115 of *Destiny and Deliberation*.

hammer towards to window will cause the window to smash into pieces. Do I thereby accept that

(H) I will sway the hammer ⊃ the window will smash into pieces?

Not at all. I might accept that

(H') If I (will) sway the hammer, the window will smash into pieces,

or

(H'') If I were to sway the hammer, the window would smash into pieces.

And based on my acceptance of (H') or (H''), I might go on to accept the truth of (H). But I do not directly infer (H) from the causal story, and no one would.

Not only are people unaccustomed to inferring material conditionals directly from causal relations, but people cannot. Knowing a material conditional requires knowing the truth value of at least one of its components: antecedent or consequent.[27] I do not know whether I will sway the hammer or not, and I do not know whether the window will smash into pieces or not. So I do not know (H), even though it is true. Similarly, because God, in his deliberation process, does not know the truth values of the antecedents and consequents of the deliberative conditionals, God does not know the truth value of the deliberative conditionals either. Even his knowing the causal connections won't help.

V. Conclusion

In this chapter I have focused on two problems with the material conditional model, both being serious problems. The first problem is given the model, once God has

[9] Assume there is not a source of testimony transmitting the knowledge, and one does not derive the material conditional from its related indicative or subjunctive or strict conditional.

decided to actualize a particular world, God does not know which DCA to perform in order to bring about that world. The truth-functional nature of material conditionals leads to this problem. The second issue is that if we choose this model, we will not be able to explain how God knows the deliberative conditionals. But a model should supply that information, because it is essential to the success of a model for divine deliberation. Seeing these two problems, I conclude that we should give up the material conditional model and turn to its alternatives.

CHAPTER FOUR

The Indicative Conditional Model

In this chapter I explore the possibility of building a model for divine deliberation in Creation on the basis of indicative conditionals. By "indicative conditionals," I have in mind conditionals like

J: If John did not go to church last Sunday, he went to the Mall that day.

Conditionals of the same kind as J are characterized by the indicative mood, which, as a grammatical mood, is distinct from others like interrogative, subjunctive, optative, injunctive moods.[1] As always, since the current model is built with indicative conditionals and is naturally named the "indicative model", all the deliberative conditionals are indicative conditionals whose antecedents and consequents are divine creative acts and world actualizations, respectively.

I will approach the indicative model by considering two possibilities:

Possibility one—indicative conditionals have truth value;

Possibility two—indicative conditionals do not have truth value.

These are not the only possibilities, since some people believe that certain types of indicative conditionals do have truth value although they argue that indicative conditionals in general do not.[2] I will single out such conditionals and treat them separately later. Concerning possibility one, I start by considering whether indicative conditionals are truth-functional. First, using an argument by Edgington, I argue that if

[1] Given the way they appear, indicatives are hard to distinguish from material conditionals.

[2] For example, Jonathan Bennett, see his *A Philosophical Guide to Conditionals*, Oxford, UK: Oxford University Press, 2003, §7—Independent Conditionals. Henceforth *Guide*.

indicative conditionals have truth value and are truth-functional, they must be truth-functional in the standard way, i.e. having the same truth conditions as material conditionals. Then I evaluate one well-credited argument for the truth-functionality of indicative conditionals by Jackson and point out why it fails. However, I argue that even if we admit that indicative conditionals are truth-functional in the way material conditionals are, we still have to abandon the indicative model because then the indicative model is not significantly different from the material conditional model, and hence is subject to the same objections as the latter. Then I examine the view of those who accept possibility one yet deny that indicative conditionals are truth-functional. I focus on the Stalnakerian possible worlds analysis of indicative conditionals and argue that the Stalnakerian analysis suffers from a Gibbardian objection. Hence, I conclude that under possibility one, we cannot locate good candidates for the position of deliberative conditionals.

Then I turn to possibility two. I first qualify this possibility by considering separately conditionals that are almost universally agreed to have truth value, like

> W: If Alex works six whole days a week, then Alex works on at least one of the weekend days.

After close inspection, I conclude that we should not treat deliberative conditionals as among such conditionals. Then I discuss the view that truth-valueless indicative conditionals should be treated as epistemic, i.e. they should be treated as simply expressing their speakers' affirmation of certain conditional probabilities as relatively high. I present the details of this view and argue that we should not treat deliberative conditionals merely as such. I then look into a way of improving the model by adding a

further qualification. I conclude that, under possibility two, we do have a promising candidate for modeling divine deliberation, but I also note that the model we end up with is inferior to an alternate model which I shall explore thoroughly in Chapter 5. Thus I conclude that the indicative model could work for modeling divine deliberation, but will not be the best we can find.

Possibility One: Indicative Conditionals Have Truth Value

Under this possibility, I consider whether indicative conditionals are truth-functional and on that basis, whether deliberative conditionals can be treated as indicative conditionals having truth value. My conclusion will be that deliberative conditionals should not be treated that way.

I. Indicative Conditionals Are Truth-Functional.

By claiming a logical connective (or operator) to be truth-functional, we mean that the truth value of a compound statement containing that connective is a function of the truth values of its component statements.[3] For example, the connective "and" is normally regarded as truth-functional. Hence, the truth value of

(1) Tom is a cat and Jerry is a mouse

is a function of the truth values of

(2) Tom is a cat

and

(3) Jerry is a mouse.

[3] I treat *connective* and *operator* as synonymous.

In other words, (1)'s truth value is solely determined by the truth values of (2) and (3). (1) is true when and only when (2) and (3) are both true. Other commonly acknowledged truth-functional connectives include "or," "it is not the case that," and the "if" of material conditionals. There are far more commonly acknowledged non-truth-functional connectives, including "it is obligatory that," "necessarily," "possibly," etc. and an infinite number of intentional constructs like "Plantinga believes that" or "Shakespeare was suspicious in 1600 that."

Here by saying that indicative conditionals are truth-functional, what I really mean is that the main connective—"if"—of indicative conditionals is truth-functional. In this sub-section, I will consider the view of some philosophers that indicative conditionals not only have truth value but are truth-functional. I will first look at an argument by Dorothy Edgington that if indicative conditionals are truth-functional then they must be truth-functional in the standard way. Then I look at Jackson's argument that indicative conditionals are truth-functional. I shall explain why I think his argument fails. On that basis I conclude that indicative conditionals are not truth-functional. However, I will also explain that even if indicative conditionals are truth-functional we still should not adopt the indicative model because, in that case, the indicative model will not be much different from the material model which we previously examined and abandoned.

IA. If indicative conditionals are truth-functional, they are truth-functional in the standard way. Material conditionals are truth-functional. A material conditional $p \supset q$ is true if and only if either p is false or q is true. (Henceforth I will use "$\supset$" to denote the connective of material conditionals, and use "$\rightarrow$" to denote the connective of indicative conditionals.) For ease of reference, I name the truth-function of $\supset$ the standard way. I

have encountered two arguments for the claim that if indicative conditionals are truth-functional, they are truth-functional in the standard way. Both are by Edgington. In her "On Conditionals," Edgington says,

> It is easy to see that *if* "if" is truth-functional, this [i.e. the standard way, my note] is the right truth-function to assign it. For no one doubts that a conditional is *sometimes* true when the truth values of its components are (true, true), or (false, true), or (false, false). Given truth-functionality, it follows that it is *always* true in these circumstances—for the truth-values of the components fix the truth value of the whole. Take a conditional which is true come what may, for example "If Mary and John are both in Paris, then Mary is in Paris". The components are such that it is impossible that it has a true antecedent and false consequent. But the other three combinations are possible, and whichever obtains, the conditional is true. Given truth-functionality, it follows that whenever one of these three combinations obtains, a conditional is true.[4]

To paraphrase, Edgington's argument goes somewhat like this:

E1: An indicative conditional is sometimes true when its component statements have truth value combinations of (true, true), (false, true), or (false, false). [premise]

E2: Indicative conditionals are truth-functional. [presupposition]

E3: Therefore, an indicative conditional is always true when its component statements have truth value combinations of (true, true), (false, true), or (false, false). [from E1 & E2]

E4: Sometimes it is impossible for a true indicative conditional to have a true antecedent and a false consequent. [premise]

E5: Therefore, it is impossible for a true indicative conditional to have a true antecedent and a false consequent. [from E4 & E2]

[4] Edgington, "On Conditionals," *Mind* 104, No. 414, (April, 1995), 242. All italics belong to the author. An earlier version of this argument appears in her "Do Conditionals Have Truth-Conditions?" *Critica* 18, No. 52 (1986), 3-30.

E6: Therefore, it is impossible for an indicative conditional with a true antecedent and a false consequent to be true. [from E5]

E7: Therefore, an indicative conditional is always true when its component statements have truth value combinations of (true, true), (false, true), or (false, false), and is always false when its components have the truth value combination of (true, false). [conjunction of E3 and E6]

From certain premises (E1 and E4) together with presumed truth-functionality (E2), Edgington argues that indicative conditionals have the same truth conditions as material conditionals. In general, I find her argument convincing. All the inferences seem to be valid. Also the premises seem plausible. She gave the following conditional as evidence for E4:

If Mary and John are both in Paris, then Mary is in Paris.

Evidence for E1 is harder, although true-true conditionals that are true are easy to locate. For example,

P1: If Oregon is to the north of Nevada, then Oregon is to the north of New Mexico.

True conditionals of the (false, true) or (false, false) combinations are harder to provide, mainly because many believe a conditional with an antecedent known to be false should not be used in the indicative mood. This feature is labeled by some as the zero-tolerance of indicatives.[5] However, after we specify the epistemic status of the speaker, examples can be abundant. For example, the following conditional seems true and is appropriate to

[5] For a detailed explanation of zero-intolerance, see Bennett's *Guide*, § 23. Stalnaker once makes a claim in the same spirit: "It is appropriate to make an indicative conditional statement or supposition only in a context which is compatible with the antecedent." See his "Indicative Conditionals," *Philosophia* 5, (July, 1975): 269-286. For the exact origin of this quote, see § 3.

assert for someone who knows that Americans speak English yet who does not know where Paris is:

P2: If Paris is the capital of the U.S., then Parisians mostly speak English.

P2 is an example of true indicative conditionals of the (false, false) combination. Here is one example of true conditionals of the (false, true) combination:

P3: If Paris is the capital of Japan, then Parisians mostly live in the northern sphere.

P3 seems true to me. Also its indicative mood seems appropriate as long as we stipulate that its speaker knows Japan is located in the northern sphere yet does not know whether Paris is the capital of Japan. The examples I gave—P1, P2, and P3—are evidences for E1. Since we have strong evidences for Edgington's two premises E1 & E4, and her inferences are all valid, we should accept her conclusion. So if indicative conditionals are truth-functional, they have the same truth-functionality as material conditionals.

Here one may object that Edgington's argument is problematic because it ignores the evidence against its conclusion. Sometimes conditionals of the (true, true), (false, true), or (false, false) combinations are false. Therefore, from the presumed truth-functionality, we should conclude that indicative conditionals are always false when they are of these truth value combinations. So Edgington's conclusion that truth-functional conditionals are truth-functional in the standard way is false. I indeed agree that this is a problem for Edgington's argument. But personally, I think that people are more inclined to agree that sometimes conditionals of the (true, true), (false, true), (false, false) combinations are true than to agree that sometimes such conditionals are false. So the evidence that Edgington's argument ignores is not as persuasive as the evidence that

Edgington's argument relies on. Therefore, I concur with Edgington that if indicative conditionals are truth-functional, they are truth-functional in the standard way, i.e. having the same truth-functionality as material conditionals.

IB. Indicative conditionals are not truth-functional. So once we agree that indicative conditionals are truth-functional, we have to agree that they are truth-functional in the same way as material conditionals. But the question is, should we agree that indicative conditionals are truth-functional? Some people think so, with Grice and Jackson as their representatives.[6] They think that indicative conditionals are truth functional and are equivalent to material conditionals. One major problem for such people is called "the paradox of material implication."

By definition, material conditionals with false antecedents are true, no matter whether their consequents are true or false. Similarly for material conditionals with true consequents: their being true does not hinge on the truth values of their antecedents. So once we know a material conditional has a false antecedent or a true consequent, we can be sure that it is true. However, in real life, people seem reluctant to accept certain conditionals as true even though they are known to have false antecedents or true consequents. For example,

M_1: If spring comes immediately after summer, then I am the president of India.[7]

And

[6] Another contemporary advocate of the truth-functional account is Adam Rieger. See his "A Simple Theory of Conditionals," *Analysis* 66, No. 3, (July, 2006), 233-240.

[7] Once again, one may worry that conditionals like M_1 breaks the zero-intolerance rule about indicatives. However, such worry can easily be dispensed with by stipulating the knowledge structure of the speaker in a certain way, as we did with P_2 and P_3.

M_2: If "clown" is the nickname of George W. Bush, then Reagan was the 40th president of the U.S.

This is called "the paradox of material implication," usually cited as evidence against treating indicative conditionals and material conditionals as equivalent.

Both Grice and Jackson have attempted to resolve the paradox. Grice argues that it is unsurprising that we feel reluctant to accept conditionals like M_1 and M_2.[8] Such conditionals as M_1 and M_2, though true based on their truth conditions, are unassertable because to assert them violates certain rules governing conversation. Jackson, on the other hand, argues that conditionals like M_1 and M_2 are unassertable because their assertion violates the conventional implicature of the connective "if".[9] I will not delve into the details of their theories. My point is that Grice and Jackson do seem to have resources to tackle one major objection to the material conditional analysis of indicatives. But simply resolving one objection stands for no positive reason why we should accept their claim that indicative conditionals are logically equivalent to material conditionals. Grice never provides one such reason, although Jackson does.

To ensure brevity and precision, I shall adopt a paraphrase of Jackson's argument provided by D. K. Johnston.[10] Jackson's argument contains three premises:

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[8] See Paul Grice, "Logic and Conversation," *Syntax and Semantics*, Vol. 3, edited by Peter Cole and Jerry L. Morgan, New York: Academic Press, 1975, 41-58. Also see his posthumous *Studies in the Way of Words*, Cambridge: Harvard University Press, 1989.

[9] See Frank Jackson, "On Assertion and Indicative Conditionals," *Philosophical Review* 88, No. 4, (October, 1979): 565-589.

[10] For Jackson's original argument, see his *Conditionals,* Oxford: Basil Blackwell, 1987, 4-6. For Johnston's paraphrase, see Johnston's "The Paradox of Indicative Conditionals," *Philosophical Studies* 83, No. 1, (July, 1996): 93-112. Bennett also comments on Jackson's argument in his *Guide*, 21.

(a) The Truth-Functionality Principle: The material conditional "A ⊃ B" is equivalent to "Not-A or B."

(b) The Uncontested Principle: The indicative conditional "If A then B" implies the material conditional "A ⊃ B."

(c) The Passage Principle: Given the disjunction "A or B," we can infer the indicative conditional "If not-A then B."

With more details, his argument goes as follows: given the Passage Principle, from "Not-A or B" we can infer "if A then B." Also, based on the Truth-Functionality Principle, from "A ⊃ B" we can infer the disjunction "Not-A or B." Thus, combining these two principles, "A ⊃ B" implies the indicative conditional "if A then B." This, together with the Uncontested Principle, leads to the conclusion that the indicative conditional "if A then B" and the material conditional "A ⊃ B" imply one another. Hence, they are logically equivalent. So the argument goes.

Jackson's argument is valid, but it contains a false premise. I think premise (c)—the Passage Principle—is mistaken. It is not always rational to infer "If not-A then B" from the disjunction "A or B." Put differently, it can be rational (i.e. self-consistent) to believe "A or B" yet disbelieve "If not-A then B." This could happen when someone believes "A or B" for the sole reason that there is strong evidence for her to believe "A." For example, suppose the cheese cube on the kitchen table is gone. I have strong evidence that Tom took it. I recognize Tom's handwriting on a slip left on the table that says "Yummy, go cheesy!" So I am certain that

"A": Tom took the cheese cube.

Hence trivially, I am also certain that

"A or B": either Tom took the cheese cube or Tim took the cheese cube.[11]

Also suppose I have strong evidence that Tim would never take the cheese cube. Tim is allergic to cheese and has been watching TV in the living room all the time! (Suppose such an unfortunate allergy does exist.) So with the evidence in hand, I will never accept the claim that

"If not-A then B": if Tom did not take the cheese cube then Tim took it,

even though I am certain that either Tom took the cheese or Tim took the cheese. And my belief status is totally rational. Therefore, given the disjunction "A or B," sometimes we cannot infer the indicative conditional "If not-A then B." So the Passage Principle is wrong. So Jackson's argument fails.

Besides Jackson's argument, I haven't encountered arguments directly arguing for the logical equivalence of material and indicative conditionals instead of merely defending their equivalence against charges. In her "On Conditionals," Edgington argues that one's degree of belief for the material conditional "A ⊃ B" tends to be different from her degree of belief for the corresponding indicative conditional "If A then B."[12] I agree with her argument and take that to be strong evidence that indicative conditionals are not truth-functional. So my conclusion here is that we have no reason to believe that indicative conditionals are logically equivalent to material conditionals. It follows that

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[11] If I believe p, will I thereby infer p or q? In real life we hardly ever do that, because the inference does not lead to any significant new information. But that doesn't mean we can't draw the inference validly. I think that if I am certain about p, I am also eligible, as a rational person, to be certain about p or q.

[12] "On Conditionals," § 6.5. The same argument also appears in Edgington's 1986 article "Do Conditionals Have Truth-Conditions?"

we should not treat the deliberative conditionals as indicative conditionals that are logically equivalent to material conditionals.

IC. Even if indicative conditionals are truth-functional, we still should not treat the deliberative conditionals as indicative conditionals. Here in section I, I limit myself to considering the possibility that indicatives have truth value and are truth-functional. In subsection IA, I argued that if indicative conditionals are truth-functional then they are truth-functional in the standard way. In subsection IB, I examined Jackson's argument that indicative conditionals are truth-functional in the standard way and pointed out a mistake in his argument. Hence I concluded that there is no reason to believe that indicative conditionals are truth-functional. So we had better not treat the deliberative conditionals as indicative conditionals that are logically equivalent to material conditionals. This much should be sufficient for us to end the current section. However, to strengthen my argumentation even further, in this extra subsection I argue that even if indicative conditionals are truth-functional, we still should not treat the deliberative conditionals as indicative conditionals.

The reason is real simple. Suppose we accept that indicative conditionals are truth-functional and are truth-functional the way material conditionals are. Then a model built out of such indicative conditionals is no different than a model built out of material conditionals. But as my preceding chapter eloquently shows, a model for divine deliberation whose deliberative conditionals are material conditionals suffers from various problems, including the lack of ways to explain God's knowledge of the deliberative conditionals.

Therefore, I suggest that we disregard the possibility that indicative conditionals have truth value and are truth-functional. Next I will consider the possibility that indicative conditionals have truth value yet are not truth-functional.

II. Indicative Conditionals Are not Truth-Functional

Few people studying indicative conditionals now believe that they have truth value. But the temptation is high to believe they have truth value. Some might disbelieve that indicative conditionals are truth-functional, yet they are willing to accept that indicatives have truth value. To account for the truth values of indicative conditionals, they provide non-truth-functional semantics for indicatives. These people include Stalnaker and Wayne Davis, among others. In this section, I will focus on Stalnaker's possible worlds semantics which is relatively influential with respect to the analysis of indicative conditionals and more so with subjunctive conditionals.[13] After briefly presenting his theory, I will provide a Gibbardian objection to it and explain why one attempt to save his theory from the objection fails. My Gibbardian objection will also apply to all the alternative theories that treat indicatives as nontruth-functional. I will end this section by concluding that there is no reason to believe that indicative conditionals have truth value and are non-truth-functional, and hence there is no reason to treat the deliberative conditionals as indicative conditionals that are non-truth-functionally true.

[13] For an account of Davis's position, check out his "Indicative and Subjunctive Conditionals," *Philosophical Review* 88, No. 4, (October, 1979): 544-564. However, for a quick dismissal of his position, see Bennett's *Guide*, §33 & 138.

Stalnaker is probably the inventor of the possible worlds semantics for indicative conditionals and subjunctive conditionals.[14] His semantics was first published in "A Theory of Conditionals."[15] Although Stalnaker made revisions after Lewis made public his famous "triviality result" in 1972, the structure of his theory remains unchanged for him.[16] According to his theory, "If A then B" is true just in case B is true in a world in which A is true and which differs minimally from the actual world. If A is true in the actual world, then "If A, then B" is true just in case B is true in the actual world. The closeness between worlds is determined by the context. Stalnaker refers to the chosen A-world as f (A, α). A is the antecedent of the conditional in question; α is the actual world; f is a selection function. Also, Stalnaker defines the context set as the set of all the worlds compatible with the context information, i.e., the conversation partners' shared knowledge and presupposition. Because Stalnaker rules that it is only appropriate to assert an indicative conditional when its antecedent is not known to be false, the evaluation of an indicative conditional should be limited to the worlds inside the context set. However, by uttering a conditional in the subjunctive mood, someone is intending to reach towards a world outside the context set since she intends the antecedent to be incompatible with the context.

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[14] As far as I know, Daniel Nolan and J R Williams are two other possible worlds account of the possible worlds account. See Nolan's "Defending a Possible-Worlds Account of Indicative Conditionals," *Philosophical Studies* 116, No. 3, (December, 2003): 215-269, and Williams' "Conversation and Conditionals," *Philosophical Studies* 138, No. 2, (March, 2008): 211-223.

[15] Stalnaker, "A Theory of Conditionals," *American Philosophical Quarterly*, Monograph: 2 (Blackwell, 1968), 98-112. Also see his "Indicative Conditionals," *Philosophia* 5, (July, 1975): 269-286, and his *Inquiry* (Cambridge, M.A.: MIT Press, 1984).

[16] For a detailed description and evaluation of Lewis's triviality result, see Edgington's "On Conditionals," § 6.

Stalnaker has never provided a substantial analysis of the closeness among worlds. And there is no need for us to try to come up with one right now. In what follows I will present an objection to his semantics. This objection utilizes a situation called "Gibbardian stand-off" which consists of two conditionals—"If A, then B" and "If A, then not-B"—both appearing to be true.[17]

Gibbardian stand-offs are named after Allan Gibbard because he presented the originating version in his "Two Recent Theories of Conditionals." DeRose discussed an altered version in his "The Conditionals of Deliberation,"[18] and Bennett made a version of his own which he considered superior to Gibbard's original one. We can draw various lessons we see fit from Gibbardian stand-offs. DeRose and Bennett's versions, along with Gibbard's original one, are subject to the same objection. In what follows, I will explain what the objection is and then attempt to provide a newest version which, hopefully, is not subject to the said objection and hence consists of a genuine "stand-off." The lesson from my newest stand-off is that indicative conditionals have no objective truth value.

Let me start with DeRose's version. It differs from Gibbard's version in no significant way. So instead of going over both of their own versions, I shall only examine DeRose's version. Sly Pete is playing the game of drawing cards with Gullible Gus. Each player draws exactly one card from the deck, makes his bet, and then shows his card. Each card has a unique number on it, ranging from 0 to 100. Now the cards have been drawn, and the unsuspecting Gus is waiting for Pete to cast a bet. Pete is

[17] The term "Gibbardian stand-off" is named after Allan Gibbard. Check out his article "Two Recent Theories of Conditionals," published in Harper, Stalnaker, et al, eds., *Ifs*, Springer, 1981, 211-247. On 231-232, Gibbard gives an example in which two people—Snoopy and Sigmund—each say a conditional and the two conditionals appear equally plausible to you, the outside observer. The two conditionals share an antecedent and have contradictory consequents. Here I shall give a strongest version of Gibbardian stand-off after comparing DeRose's version with Bennett's.

[18] *Mind* 119, No. 473, (January, 2010): 1-42.

facing two options: either he plays this hand by making a bet and possibly winning big money or losing everything he will bet, or he folds and leaves with what he already won. Pete has two sidekicks—Sigmund and Snoopy, unbeknownst to Gus. Sigmund spots Gus's cards, and secretly sends the information to Pete, and receives Pete's confirmation signal. So Pete knows what card Gus holds, and Sigmund knows Pete knows that. So Sigmund walks outside and reports to you, a bystander in the next door room, the following conditional

(O) If Pete plays, he will win.

Meanwhile, Snoopy sneaks around and snoops both Pete and Gus's cards. He knows that Gus has a better hand than Pete. So Snoopy also approaches you and reports a different conditional

(Oc) If Pete plays, he will not win.

DeRose agrees that both (O) and (Oc) are assertable. Both Sigmund and Gus have a solid ground for accepting their own conditionals. Snoopy knows what cards Pete and Gus each have, and Pete's card has a smaller number than that of Gus's. So hypothetically supposing Pete plays, Snoopy can rightfully infer that Pete will not win. Furthermore, Sigmund has a good reason for his (O), too. Pete knows what card Gus is holding, and Pete desires to win: Sigmund is aware of that. So the only possible situation in which Pete plays has to be one in which Pete has a better hand than Gus. Therefore, if Pete plays, his card will beat Gus's and Pete will win. So both (O) and (Oc) seem assertable. This seemingly creates a stand-off: suppose (O) and (Oc) are capable of having truth values, what should their truth values be? There are four options available:

Option one: Both (O) and (Oc) are true;

Option two: Both (O) and (Oc) are false;

Option three: (O) is true while (Oc) is false;

Option four: (O) is false while (Oc) is true.

Since (O) and (Oc) are equally assertable, option one seems to make the most sense. However, it seems absurd to claim them both to be true, as that would violate the Law of Conditional Non-Contradiction:

CNC: ~ [(A → B) & (A → ~B)].[19]

So we seem to be stranded in a stand-off, and the lesson of the stand-off can perhaps be summed up as that indicative conditionals lack truth value.

But one might disagree. One may think that even though both (O) and (Oc) are assertable for their respective speakers, under the supposition that they have truth value, we should adopt option four rather than option one. The reason is that Sigmund and Snoopy have access to different information and Snoopy's information is more relevant to deciding whether Pete will win or not if he chooses to play. Sigmund knows Gus's card and that Pete knows Gus's card. But Snoopy knows both Gus and Pete's cards. So Snoopy's knowledge carries more weight than Sigmund's when it comes to deciding the outcome of Pete's hypothetical playing. So DeRose's version of Gibbardian stand-off trades on the deficiency of knowledge that one speaker has concerning the situation.

Aware of the aforementioned objection, Bennett proposes a new version of Gibbardian stand-off that seems to put two speakers on symmetrical stances.[20]

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[19] Note that Conditional Non-Contradiction is different from the law of Conditional Excluded Middle:

(A → B) V (A → ~B).

[20] Jonathan Bennett, *A Philosophical Guide to Conditionals*, NY: Oxford University Press, 2003, 85.

> Top Gate holds back water in a lake behind a dam; a channel running down from it splits into two distributaries, one (blockable by East Gate) running eastwards and the other (blockable by West Gate) running westwards. The gates are connected as follows: if east lever is down, opening Top Gate will open East Gate so that the water will run eastwards; and if west lever is down, opening Top Gate will open West Gate so that the water will run westwards. On the rare occasions when both levers are down, Top Gate cannot be opened because the machinery cannot move three gates at once.
>
> Just after the level-pulling specialist has stopped work, Wesla knows that west lever is down, and thinks 'If Top Gate opens, all the water will run westwards'; Esther knows that east lever is down, and thinks 'If Top Gate opens, all the water will run eastwards'.

In the story above, Wesla and Esther are at a perfectly symmetrical situation: we can even stipulate that every aspect of the two is identical except that Wesla knows west lever is down while Esther knows east lever is down. So Wesla and Esther do indeed have parallel access to information, and their conditionals are indeed assertable. Suppose the two conditionals have truth value. We must not claim that one of them is true and the other is false. We should not claim them to be both false, as we lack a reason for doing that. So the only option left is to treat the two conditionals to be both true, yet that would violate Conditional Non-Contradiction. So there is a stand-off, and the only way out seems to be dropping the presumption that the conditionals in issue have truth value. Thus, Bennett insists that Gibbardian stand-offs are a device for proving that indicative conditionals lack truth value.

However, a similar objection can be leveled against Bennett's version as well. In the story, Wesla's conditional is assertable for Wesla but not for Esther; likewise, Esther's conditional is assertable for Esther but not for Wesla. The conditionals under evaluation are not assertable to both, and hence, even if we lay down the supposition that conditionals have truth value, we may balk at whether the said conditionals are true or not.

So Bennett's version of Gibbardian stand-off employs two conditionals whose assertability is limited to each of their speakers. If we can find a version in which the conditionals at conflict are both true beyond any reasonable doubt, then we may be certain that we have a stand-off. Below we have a new version that seems to guarantee that.

Here is one such a version. There are five undisclosed numbers and two students—Tom and Heather. Neither Tom nor Heather knows any of the five numbers. Now Tom asserts that

(1) If one of the numbers is 3, then (if all the numbers are equal, then the sum of all the numbers will be 15).

Heather asserts that

(2) If one of the numbers is 5, then (if all the numbers are equal, then the sum of all the numbers will 25).

Both (1) and (2) are assertable, not only to their respective speakers, but also to the audience. This is an important feature of this new version which is missing in DeRose and Bennett's versions. What's more important is that, under the assumption that indicatives can have truth value, (1) and (2) should both be treated as true. Now Tom discovers that one of the numbers is 3, while Heather finds out that one of the numbers is 5. Drawing a modus ponens inference, Tom concludes that

(3) If all the numbers are equal, then the sum of all the numbers will be 15.

Similarly, Heather infers that

(4) If all the numbers are equal, then the sum of all the numbers will be 25.

(3) and (4) should both be true. Modus Ponens is a valid argument form, and valid arguments are truth-preserving. So this time, there is no question which one of the conflicting conditionals is true or false. We know without doubt that both (3) and (4) are true, given our assumption that indicatives have truth value. However, it seems absurd to assert both conditionals to be true. (4) implies that

(5) If all the numbers are equal, then the sum of all the numbers will not be 15.

And (3) and (5) cannot both be true, according to Conditional Non-Contradiction. Therefore, we have a genuine stand-off, and the only way out seems to be dropping the presupposition that indicative conditionals have truth value. This Gibbardian objection is a powerful objection not only to the Stalnakerian non-truth-functional account of indicatives, but also to the Jacksonian truth-functional account. I have already refuted Jackson's argument for the truth-functional account, which is the only defense of the truth-functional account that I know of. Below I will discuss a possible way one might try to save the Stalnakerian semantics from the Gibbardian objection.

How would a proponent of the Stalnakerian possible worlds semantics respond to the Gibbardian objection? Clearly she should not claim that one of (3) and (5) is true while the other is false. Although in Gibbard and DeRose's versions, the two speakers—Snoopy and Sigmund—do have asymmetrical access to information, in my own version, we don't see any significant difference between the two speakers. Therefore, we have no reason to discriminate against either one of them in favor of the other.[21] So how about denying both (3) and (5), or affirming both of them? As a supporter of the Stalnakerian possible worlds account, J R Williams suggests that both conditionals in the Gibbardian

[21] This advantage of my Gibbardian case is not shared by Gibbard's original poker game example.

stand-off—in my version, conditionals (3) and (5)—should be held to be true. He makes this suggestion while defending his own version of possible worlds semantics against a Gibbardian scenario raised by Bennett.[22] Although affirming both Wesla and Chelsea's conditionals will break the Law of Conditional Non-Contradiction (CNC), a Stalnakerian can happily live with it, as Williams argues. In his semantics, Stalnaker himself argues that "If A then B" is true when its antecedent—A—is *impossible*.[23] By "impossible," Stalnaker means metaphysically impossible or not true in any world. So in Stalnaker's semantics, a conditional with an impossible antecedent is trivially true whether its consequent is true or false. Williams thinks that an indicative conditional "If A then B" is trivially true when its antecedent is *impossible* in the sense that its antecedent is not true in any world within the context set. Recall that the context set, in the Stalnakerian account, is the set of worlds not ruled out by (or compatible with) the context information. Returning to my Gibbardian scenario, the information that Tom and Heather respectively received, when combined, is sufficient for ruling out the truth of the antecedent "all the numbers are equal:" after all, Tom knew one of the numbers was 3 and Heather knew one of the numbers was 5. So, applying Williams' defense to my scenario, the shared antecedent of the two conditionals—(3) and (5)—is ruled out by the context. That means, the shared antecedent is not true in any world within the context set because the worlds in the context set are compatible with the context. So, by Williams' account, the two conditionals in issue are both true since they both have *impossible* antecedents. This

[22] See Bennett's *Guide*, 85.

[23] See Stalnaker's "A Theory of Conditionals," § 2.

defense, according to Williams, commits the Stalnakerian only to a qualification on the CNC instead of a general refutation.

I disagree with Williams' defense. I am suspicious whether the antecedent of (3) and (5)—all the numbers are equal—gets ruled out by the context. Stalnaker defines the context set as the set of worlds not ruled out by the presupposed context information. And he agrees that the context changes as the presupposed context information changes along with the progress of communication. But the context is not determined by one particular partner of the conversation only. It is determined by the shared knowledge and shared presuppositions of all the conversation partners in the context. In my Gibbardian case, you—the outside observer—may have enough information to rule out the shared antecedent. But the information that Tom and Heather have is insufficient for either of the two to rule out the shared antecedent. They each know one number of the series, but without communicating with each other, they do not know that the numbers are not equal. That, for me, means the context does not rule out the truth of the antecedent. Moreover, the context does not rule out the appropriateness of the indicative mood of (3) and (5), even though their shared antecedent is, actually false. If the context really rules out the truth of their shared antecedent, shouldn't the context also rule out the appropriateness of their indicative mood, given Stalnaker's stipulation that indicative mood is appropriate only when the antecedent is not known to be false? However, Williams never objects to the indicative mood in the Gibbardian stand-offs. Therefore, Williams' defense of the possible worlds semantics against the Gibbardian objection is inconsistent and therefore, fails. And it is hard to conceive of an alternative defense.

So we should not think of indicative conditionals as having non-truth-functional truth value. However, even if we admit that indicative conditionals have truth value and we accept a Stalnakerian possible worlds account, we still should not think of the deliberative conditionals as indicative conditionals that have truth value and are non-truth-functional. As we already saw, the possible worlds account involves notions like the context set and the selection function. God's creation signifies the beginning of contingent facts. So while God is deliberating, the context is simply the set of all necessary truths. So the context set, which, according to Stalnaker's characterization, is the set of all the worlds compatible with the context, should be the set of all possible worlds. The selection function is useful for selecting the world in which the antecedent of the relevant conditional is true and which differs minimally from the actual world. But in the context of God's creation, the actual world is undefined yet. God is indeed located in the actual world, but what is going to take place in the actual world, or what the actual world is like, is not decided as yet. Therefore, the actual world means little in the context of God's deliberation. In consequence, the selection function, as Stalnaker defines it, is inapplicable to God's deliberation. Therefore, even if Stalnaker's possible worlds semantics is the true semantics for indicative conditionals, that at best shows that indicatives are unsuitable for being used to construct a conditional model for God's deliberation. So whether my objection to Stalnaker's semantics stands or not, we can be certain that the indicative conditionals, understood as having non-truth-functional truth value, are no appropriate tools for God's deliberation. Therefore, we can drop the possibility that indicative conditionals have non-truth-functional truth value.[24]

[24] For further evidence against the truth value of indicative conditionals, see Bennett's *Guide*, chapters 6 & 7.

Conclusion for Possibility One

So our examination of Possibility One is coming to a close. Do indicative conditionals have truth value? Possibility One affirms that they do. If they have truth value, they are either truth-functional or non-truth-functional? We have no reason to accept the truth-functional account, and the non-truth-functional account faces a serious objection. So, either way, the indicative model faces problems. Hence let's drop Possibility One and turn to its alternative—Possibility two, the possibility that indicative conditionals do not have truth value.

Possibility Two: Indicative Conditionals do not Have Truth Value

I. Could Indicatives Be Independent Conditionals?

Many people believe that indicatives, in general, do not have truth value. But almost no one believes that no indicatives have truth value. The common recognition is that at least some indicatives have truth value. For a quick and easy one, the following conditional

If Obama is the president of the U.S., then Obama is not the president of the U.S is false. There are many conditionals in the indicative mood that are commonly recognized to have truth value. Below I try to categorize them somehow. Because our main interest is in the deliberative conditionals which are all true, I will limit my categorizing only to true conditionals.

By "independent conditionals," Bennett means conditionals whose consequents are "reachable" from their antecedents without input from any matters of particular fact.[25] For example, here are two conditionals:

(D): If the river were to rise another two feet, the subway system would be flooded.

(I1): If the river were to rise another two feet, it would be two feet higher than it is now.[26]

The first conditional, (D), is a conditional whose consequent is non-reachable from its antecedent. To evaluate this conditional, we have to resort to certain matters of particular fact. In contrast, with the second conditional, (I1), we do not have to do so. Its antecedent guarantees its consequent. So we can tell it is true without resorting to any matter of particular fact.

Bennett lists three kinds of independent conditionals: logical, moral, and causal. (I1) is an example of a logical independent conditional: its consequent can be reached from its antecedent via truths of logic and mathematics. Here is another example:

(I2): If Tom is 10 years old and Tim is 15 years old, then Tom is younger than Tim.

A moral independent conditional is based on moral truths. For example,

(I3): If Jim murdered children merely for fun, then Jim has done a bad thing.

The truth of causal independent conditionals is based on causal laws. For example,

(I4): If you heat the water in the basin, the H_2O molecules will move faster.

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[25] Bennett's *Guide*, § 7.

[26] Both examples are from Bennett's *Guide*, ibid.

Examples of logical, moral, and causal independent conditionals are many. But they are not the only conditionals whose truth has won almost universal concurrence. Many people, like Edgington, believe that true-true conditionals, i.e. indicatives with true antecedents and true consequents, are true. So, for example, the following one is true:

(I5): If World War I occurred before World War II, then India is the second most populous country in the world.

Another group of true conditionals are the denials of those universally reputed to be false. For example,

(I6): It is not the case that if John and Maggie both went to church last Sunday then Maggie did not go to church last Sunday.

Examples of this sort are also many.

Now the question is, even when we agree that indicatives in general lack truth value, could it be that the deliberative conditionals are similar to those that are universally reputed to be true? We can go through the list item by item.

First, could the deliberative conditionals be logical independent conditionals? No. Logical independent conditionals are based on logic: their antecedents guarantee their consequents no matter what. So logical independent conditionals are not only true but necessarily true. However, once we admit the deliberative conditionals to be logical independent conditionals, we commit ourselves to a version of strict conditional model and are thus forced to face all the objections we have previously discussed to the strict conditional model.

Second, could the deliberative conditionals be moral independent conditionals? No. The only reason that moral independent conditionals are widely treated as true is that

people deem there to be certain moral truths. And such universally recognized moral truths enjoy an equal status as logical and mathematical truths. So, once again, by admitting the deliberative conditionals to be moral independent conditionals, we commit ourselves to a version of strict conditional model.

Third, could the deliberative conditionals be causal independent conditionals? I don't think so. I personally refuse to apply causal laws to a supernatural being like God. Leaving aside my personal feeling, however, we still should not treat the deliberative conditionals as causal independent conditionals. Suppose certain causal laws do govern God. The question is, does God have the power to break the law? If God has the power to break the law, then the deliberative conditionals, as causal independent conditionals based on causal laws governing God, are not genuinely true. Their truth is not fully grounded. Can we add the presumption that God promises not to break the causal laws? That will indeed ground the truth of the deliberative conditionals. But once we add that presumption and because God is a perfectly moral being and breaking his own word is impossible, the deliberative conditionals turn into necessary conditionals and the indicative model becomes another version of strict conditional model. Or we can assume that God does not have the power to break the causal laws governing him. Then once again, the deliberative conditionals, as causal independent conditionals based on causal laws, are not just true but necessarily true. And the indicative model will not be significantly different than the strict conditional model.

Fourth, could the deliberative conditionals be conditionals having true antecedents and true consequents? No. Obviously the antecedents and consequents of the deliberative conditionals cannot all be true.

Fifth, could the deliberative conditionals be denials of conditionals that are obviously false? I do not think so. There are no negation symbols prefixing the deliberative conditionals. Plus, the only obviously false conditionals I can think of are ones that are necessarily false. Thus, their negations are necessarily true. This means that this option would commit us to identify the indicative model with the strict conditional model.

With all options run out, I conclude that we should not treat the deliberative conditionals as independent conditionals or true-true conditionals or negations of obviously false conditionals. So, in what follows, I shall stick with the presupposed possibility that indicative conditionals lack truth value.

II. If Indicatives Lack Truth Value, What Are They?

So now we hold onto the presupposition that indicative conditionals in general lack truth value. Since the deliberative conditionals of the current model are indicative conditionals, our presupposition commits us to the assertion that the deliberative conditionals lack truth value. This, in effect, means we have discarded our previous assumption that the deliberative conditionals are all true. But it is no problem, if we are able to work out a consistent and convincing indicative model even though its deliberative conditionals are deemed to lack truth value. Given our presupposition that indicative conditionals lack truth value, we must ask ourselves what indicative conditionals are, or what functions they serve. This clarifies our conception of indicatives and furthers our understanding of the presupposition. The most widely held view is expressivism, the view that indicative conditionals express states of our minds.

Bennett describes expressivism as such: '[I]n asserting A → C a person expresses his high probability for C given A, without actually saying that this probability is high.'[27] Notice that he uses the word *express*. So it is the act of asserting A → C, not the sentence itself, that expresses the speaker's confidence in the high probability of C given A. Under the presupposition that indicative conditionals lack truth value, A → C does not stand for any proposition. Bennett compares this expressivism with moral expressivism. Moral expressivism is the view that the asserting of moral judgments merely expresses their speakers' attitudes—approval or disapproval—towards certain acts, instead of reporting any propositions or facts. For moral expressivism, moral judgments lack propositional content. The same goes for indicative conditionals under expressivism. Sometimes people capture this feature of indicative conditionals by describing them as epistemic in the sense that they express the epistemic status of their speakers, instead of being factual in the sense that they represent facts.[28]

I think it should now be obvious that a model for divine deliberation should not be built with indicative conditionals under the expressivist view. By using the deliberative conditionals for his deliberation, God in effect asserts the deliberative conditionals.[29] That shows God's confidence that each consequent is probable given its antecedent, and nothing more. However, it seems to diverge from the traditional picture of God's providence to think that he makes the decision over which world to actualize under the

[27] See Bennett's *Guide*, 106.

[28] For a discussion on their difference, see John Cantwell, "Indicative Conditionals: Factual or Epistemic?" *Studia Logica* 88, No. 1, (February, 2008): 157-194.

[29] We can also claim that an expressivist view applies to both the assertion and acceptance of an indicative. Hence, under expressivism, God's acceptance of the deliberative conditionals stands for his confidence in the high probability of their consequents given their antecedents.

guidance of conditionals showing merely his confidence in conditional probabilities. As the Bible tells,

> O Lord, you have searched me
> and you know me.
> You know when I sit and when I rise;
> you perceive my thoughts from afar.
> You discern my going out and my lying down;
> you are familiar with all my ways.
> Before a word is on my tongue
> you know it completely, O Lord….
> All the days ordained for me
> were written in your book
> before one of them came to be. (Psalm 139:1-4, 16)

The above verses suggest that we need a model of God's deliberation in which God knows with full certainty which world will result when he performs a creative action. The indicative conditional model, given our expressivist view on indicatives, does not warrant God's perfect certainty with regard to the possible outcomes of his actions. At least in themselves, the deliberative conditionals do not deliver the message that God knows with certainty the outcomes of his actions.

One might try to save the indicative model by stipulating that God is indeed certain that a particular world will be actualized once its corresponding DCA is performed by God. So even though the deliberative conditionals themselves only show that their consequents are probable given their antecedents, the model can be invested

with the extra information that, in God's mind, those consequents are certain given their antecedents. This will save the model from our previous objection, and leave us with a model that actually works. But we will face an objection from the consideration of simplicity. When we build a model, we wish to make it as simple as its effectiveness allows, but we do not want to make it unnecessarily complex. What we have here is a model whose deliberative conditionals are indicatives and which has the qualification that God's subjective probability of their consequents given their antecedents equals 1. If that is a fine model for God's deliberation, then we have a simpler one that works equally well. How about a model devoid of deliberative conditionals such that its possible actions and their outcomes are showed to be connected by conditional probabilities that are equal to 1? In Chapter 5, I shall look into the possibility of such a model built under the conditional decision theory. There we shall locate a model that has all the virtues of the indicative model, immune from the disputes surrounding indicative conditionals, and is short of one qualification than the indicative model.

Conclusion for Possibility Two

Under possibility two—the possibility that indicative conditionals do not have truth value, I first examined whether the deliberative conditionals could be those conditionals that are widely admitted to be true. After making a negative conclusion on that, I introduced an expressivist view concerning indicatives. According to this view, indicative conditionals have no propositional content; their assertion expresses certain epistemic states their speakers have. But I argue that we should not treat the deliberative conditionals as indicative conditionals under this view. I then looked over a modified version of the indicative model and pointed out that the modified version would make a

fine model but would not be as simple as a closely related model built under the conditional decision theory, which I will examine in Chapter Six.

Conclusion

Indicative conditionals are an ideal tool for decision theories. Though people disagree about whether indicatives have truth value, most people accept Adams' Thesis that indicative conditionals (or their assertion) express conditional probabilities. In decision theories, the conditional probabilities of utilities over possible acts are a requisite element. Although some people simply use conditional probabilities when constructing decision matrixes, others sometimes use indicative conditionals. This is why indicative conditionals did appear to be promising in the beginning as candidates for the deliberative conditionals. After sorting through possibility one and possibility two, I have to conclude that the only promising model with indicative conditionals should go alongside an expressivist view about indicatives. In the next chapter, I shall explore the possibility of using subjunctive conditionals while modeling divine deliberation in terms of conditionals.

CHAPTER FIVE

The Subjunctive Conditional Model

In the previous chapters, I discussed three different models for God's deliberation. They are all conditional models, and use different conditionals to represent the relations between God's divine creative acts (henceforth DCAs) and the actualization of worlds. The strict model from chapter two and the material model from chapter three both fail, while the indicative model from chapter four seems to work but can be further improved. So in this chapter I shall consider the possibility of having subjunctive conditionals as deliberative conditionals when we model God's deliberation.

By "subjunctive conditionals" I mean conditionals in the subjunctive mood. Such conditionals almost always have would-clauses as consequents.[1] That may cause them to be confused with conditionals whose consequents are in the past future tense.[2] A classic example of a subjunctive conditional is:

(K): If Oswald had not shot Kennedy, someone else would have.

K's subjunctive mood, just like in every subjunctive conditional, suggests the speaker's awareness that Oswald did shoot Kennedy in real history, and the conditional is used to assert what would have been the case given the counter-to-fact postulate. But here the

[1] Some subjunctives have consequents that use "would have" or "must have" in place of "would."

[2] For example, in the following two conditionals, the first one contains a 'would'-clause and hence shall be treated as a subjunctive conditional, while the second one is not:

(1) If Hitler had not committed suicide in 1945, then he would have been arrested and sentenced to death by the allies.

(2) If Peter did not finish his thesis by Christmas, then his graduation would be deferred to the following May.

subjunctive mood of the deliberative conditional is not intended to serve any pragmatic purpose or imply anything. My focus will be on the semantic nature of subjunctives.

Certain unique features set subjunctives apart from strict, material, and indicative conditionals. These features seem promising. First of all, subjunctives are generally considered as having truth value, and for most people, they are non-truth-functional, contingent, and objective. Strict conditionals are necessary, while material conditionals are truth-functional. The general consensus about indicative conditionals is that they lack truth value, although a few people think that they have objective truth value.

Secondly, for the past few decades the Molinists have used subjunctives to form their Molinist theories, and their counterfactuals of world actualization look exactly the same as our deliberative conditionals.[3] Thirdly, ever since Stalnaker suggested this to Lewis in a letter in the sixties, decision theorists have learned to take subjunctives seriously.[4] The fourth feature: through decades of discussion, there is now a standard or near-standard semantics on subjunctives, called the possible world semantics. With the semantics in hand, we can safely assume that we understand the nature of subjunctives. Last but not least, subjunctives have proved to be interesting and useful elsewhere, e.g. in the analysis of such important notions as perception, knowledge, and causation. That should also add to our hope.

For the rest of this paper, I will first develop the details of the subjunctive conditional model. Then I will turn to my main objection to the model—the grounding

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[3] For details of standard Molinism and Maverick Molinism, see Tom Flint's *Divine Providence: The Molinist Account*, Ithaca: Cornell University Press, 1998, esp. chapter 2. Flint's account of Molinism may be treated as standard Molinism.

[4] See Stalnaker's "Letter to David Lewis," dated May 21, 1972, in Stalnaker, Harper, et al eds., *Ifs: Conditionals, Belief, Decision, Chance, and Time*, Dordrecht: D. Reidel, 1981, 151-152.

objection. I will explain what the objection is, and then canvass four different replies to the objection. After disputing them all, I will conclude that this particular model is inadequate and hence should be rejected.

The Model

In this section, I introduce the essential components of the subjunctive model. As a conditional model, one of its main components is deliberative conditionals. According to our assumption, all the deliberative conditionals in a given model must fall into the same kind. So the subjunctive model only has subjunctive conditionals as its deliberative conditionals. The antecedents of these conditionals are descriptions of God performing a divine creative act (DCA), while the consequents denote the actualization of worlds. Thus, to use a_n and w_n as the abbreviations for "God performs the DCA a_n" and "w_n becomes actual," respectively, a typical deliberative conditional would be

If it were the case that a_n, then it would be the case that w_n;

Or

If a_n were the case, then w_n would be the case.

After deciding which world to actualize, God finds its corresponding DCA, performs that DCA, and initiates the actualization of the chosen world.

I assume that all the deliberative conditionals are true. Deliberative conditionals, given the majority opinion, are capable of having truth value,[5] while as a perfect being, God does not knowingly use false conditionals for his deliberation. I further assume that the deliberative conditionals are contingently true. To think that they are necessarily true

[5] A manuscript by Hajek defends the view that most counterfactuals are false. Though shocking at first look, his view there does not constitute an objection to my claim that most counterfactuals/subjunctives (synonymous) have truth value. See Hajek's "Most Counterfactuals Are False," manuscript, available on his website.

will place us back into the predicament of chapter one, where strong objections were made to the strict conditional model. If we insist on treating the deliberative conditionals as necessary, then we will have to face those objections again. Since in our model, God utilizes the deliberative conditionals to guide his own thinking, it is safe to claim that God knows the deliberative conditionals. For the model to be adequate, an explanation of how God knows the deliberative conditionals will be needed.

The deliberative conditionals should also be consistent, since they are true at the same time and God knows them all. But their consequents are not mutually consistent. Our modeling has been accompanied by the assumption that only one world is actualized. So

a_1 is actualized

is inconsistent with

a_2 is actualized.

This implies that among the deliberative conditionals, you will not find two conditionals sharing the same antecedent while having different consequents, given the Principle of Conditional Non-Contradiction: $\sim[(p\Box\rightarrow q) \,\&\, (p\Box\rightarrow\sim q)]$.[6] But there may well be superfluous conditionals, i.e. two deliberative conditionals sharing the same consequent while differing in their antecedents. Two different DCAs may counterfactually imply the actualization of the same world.

It is interesting to find out whether the truth of the deliberative conditionals is within God's control. Roughly, the question may be phrased as whether for a given

[6] An exception to the Principle is when the antecedent p is impossible so that both conditionals in issue are vacuously true.

deliberative conditional p□→q, there is an act a such that if God were to perform a, ~(a □→ w) would be true.[7]

The Grounding Objection

The grounding objection is my main objection to the subjunctive model. The objection can be summed up as the question: what is the ground of the truth of the deliberative conditionals, or what makes them truth? Historically, Robert Adams raised a similar objection to the Molinist's counterfactuals of creaturely freedom. William Hasker has been an avid supporter of this objection, as he says,

> What, if anything, is the ground of the truth of the counterfactuals of freedom? It is important to see that the question here is metaphysical, not epistemological. … The question, rather, is What makes the counterfactuals true—what is the ground of their truth? As Adams says, "I do not understand what it would be for [the counterfactuals of freedom] to be true."[8]

In this quote, Hasker seems to be asking for the truth-makers of the counterfactuals. The grounding of the counterfactuals requires presenting their truth-makers. As Adams claims, what is needed is 'what it would be for [the counterfactuals of freedom] to be true.' The truth-maker makes the propositions in question true, and also enables us to explain in what sense those propositions are true.

There are three different views on truth-making: the necessitating view, the supervenience view, and the grounding view.[9] By labeling my objection as "the

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[7] Kvanvig and Flint have different opinions concerning the distinction between "prevolitional" and "not within God's control." Check out Kvanvig's "On Behalf of Maverick Molinism," *Faith and Philosophy* 19, No. 3, (July 2002): 348-357, and Flint's reply to Kvanvig, "The Multiple Muddles of Maverick Molinism," *Faith and Philosophy* 20, No. 1, (January 2003): 91-100.

[8] William Hasker, *God, Time, and Knowledge*, Ithaca: Cornell University Press, 1989, 29.

[9] My knowledge of the three different views and their differences is from Tom Crisp's "Presentism and the Grounding Objection," *Nous* 41, No. 1 (March, 2007): 118-137, and Jonathan Schaffer's "Truth-Maker Commitments," *Philosophical Studies* 141, (August, 2008): 7-19.

grounding objection," I intend it to be an objection about the truth-making of the deliberative conditionals, rather than limit myself to the grounding view of truth-making. The three different views do not always conflict with one another. The necessitating view says that for every truth, there is an entity whose existence entails that truth. Put in symbols,

> $\forall p\ \forall w_1$ (if p is true in w_1 then $\exists x$ (x exists at w_1 & $\forall w_2$ (if x exists at w_2 then p is true at w_2)).

For example, the existence of Mount Everest necessitates the truth of "Mount Everest exists," and in every world in which Mount Everest exists, the statement "Mount Everest exists" is true. The necessitating view faces difficulties, but we will not discuss those now. The next view about truth-making is called the supervenience view. This view states that truth supervenes on what there are. Symbolized, it says

> $\forall w_1\ \forall w_2\ \forall p$ (if p is true at w_1 and false at w_2, then w_1 and w_2 differ in being [either in what there is, or how it is]).

Thus, if a proposition has different truth values in two different worlds, then there must be some difference in what is real in those two worlds. The grounding view is advocated by Schaffer:

> $\forall p\ \forall w$ (if p is true at w, then p's truth at w is grounded in the fundamental features of w).

Given the grounding view, the truth of propositions is not a fundamental feature of reality, and needs to be grounded in what is fundamental. It is hard to chart out exactly what

features are fundamental, but intuitively, physical properties are more fundamental than biological or psychological properties.[10]

In what follows, I shall look at four different ways of grounding the truth of the deliberative conditionals. My valuational standard will be relatively low: if an option satisfies one of the three views on truth-making, I will count that option as successful; otherwise, I will take it to fail. I will argue that all the four options fail, and hence, the subjunctive conditional model lacks resources for grounding the truth of its deliberative conditionals. Therefore, at the end, I will conclude that the current model should be rejected.

I. The Deliberative Conditionals Are Brute Facts

I call the first option the "Plantingean reply," as it is inspired by Plantinga's reply to Adams's original grounding objection. Since the next option is also derived from a previous solution to Adams's objection, let me briefly explain the background of Adams's grounding objection.

The Molinist holds that God is perfectly omniscient in the way that he knows every single detail about the future. At the same time, the Molinist also insists that we human beings have libertarian freedom, and he thinks that it is consistent with God's perfect foreknowledge. What enables God to know the future behaviors of free creatures are devices called the "counterfactuals of creaturely freedom." They are counterfactuals that are true, and that specify what a free creature would do when situated at a particular circumstance. According to the Molinist, when God deliberates during creation, he uses the counterfactuals of creaturely freedom to predict the creatures' future behaviors, and

[10] But this comment, I do not commit myself to the view that physical properties are *the* fundamental properties that there are. So I am not affirming a physicalist position.

chooses to create the world in which the creatures will turn out to behave in the most satisfactory way for God.

The grounding objection was initially raised by Robert Adams.[11] Adams was directing his objection to counterfactuals of creaturely freedom like the following ones:

(5) If David stayed in Keilah, Saul would besiege the city.

(6) If David stayed in Keilah and Saul besieged the city, the men of Keilah would surrender David to Saul.

He couched his complaint as such: "I do not understand what it would be for [counterfactuals of freedom like (5) and (6)] to be true."[12] So the grounding objection can also be put in the interrogative mood: What does the truth of the counterfactuals of freedom consist in? In a recent article on the objection, Steven Cowan raised what he called "the generic grounding objection," which claims that a creature's act of libertarian freedom is not pre-determined and since it is not pre-determined, there is no fact of the matter as to what she would do and, therefore, no ground for the truth of conditionals like (5) and (6).[13]

In answering Adams's objection, Plantinga writes:

> Suppose, then, that yesterday I freely performed some action A. What was or is it that grounded or founded my doing so? I wasn't caused to do so by anything else; nothing relevant entails that I did so. So what grounds the truth of the proposition in question? Perhaps you will say that what grounds its truth is just that in fact I did A. But this isn't much of an answer; and at any rate the same kind of answer is available in the case of Curley. For what grounds the truth of the counterfactual,

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[11] See Adams, "Middle Knowledge and the Problem of Evil," *American Philosophical Quarterly* 14, No. 2, (April, 1977): 109-117.

[12] Adams, ibid., 110.

[13] Cowan, "The Grounding Objection to Middle Knowledge Revisited," *Religious Studies* 39, No. 1, (March, 2003): 93-102.

> we may say, is just that in fact Curley is such that if he had been offered a $35,000 bribe, he would have freely taken it.[14]

Plantinga's defense of Molinism relies on an analogy he makes between contingent statements about past free actions and counterfactuals of freedom. The ground that can be found for a statement about my past free action, if there is one, is simply the fact that I did what was described by that statement. Similarly, Plantinga argues, the ground of a counterfactual of freedom "p $\Box\rightarrow$q" is simply the fact that p$\Box\rightarrow$q. Summarizing Plantinga's reply, Hasker says,

> [w]hen a counterfactual of freedom is true, it is simply an ultimate fact about the free agent in question that, if placed in the indicated circumstances, she would act as the counterfactual states; this fact requires no analysis or 'grounding' in terms of further, noncounterfactual states of affairs.[15]

Following Plantinga's example, we can have a Plantingean grounding of the deliberative conditionals in our current model. What grounds a deliberative conditional

DC: "If God were to perform a, then w would be actualized"

is simply the fact that

F: if God were to perform a, then w would be actualized.

No further grounding is provided; nor is it needed, given the Plantingean option.

Is the Plantingean reply legitimate given our three views on truth-making? Evidently it is, given the necessitating view and the supervenience view. F does seem to entail the truth of DC, and a world in which DC is false must not include F. It is

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[14] Alvin Plantinga, "Reply to Robert M. Adams," in James E. Tomberlin and Peter van Inwagen, eds., *Alvin Plantinga*, Dordrecht: D. Riedel, 1985, 374; quoted from William Hasker, *God, Time, and Knowledge*, Ithaca: Cornell University Press, 1989, 29-30.

[15] Hasker, ibid., 30.

questionable whether the Plantingean reply satisfies the grounding view, since facts like F may arguably not count as a fundamental feature of a world.

Since the Plantingean reply has satisfied the necessitating and supervenience views, it is an effective way of grounding the deliberative conditionals, given our standard. But this does not mean we should use it in our model, for two reasons. The first reason is that what the Plantingean reply provides is trivial truth-making and is question-begging. The truth maker of a true proposition $p\Box\rightarrow q$ is simply the fact that $p\Box\rightarrow q$ is true. This does not answer what exactly $p\Box\rightarrow q$ being true amounts to or consist in. So it is question-begging. It is trivial because its way of truth-making leaves the necessitating view and supervenience view trivial. After the example of the Plantingean reply, for any true proposition p, we can simply refer to its truth-maker as the fact that p is true. That does not in any way constitute meaningful truth-making.

The second reason why the Plantingean reply should not be adopted is that it is opposite to our motive for building models. To model a metaphysical process is to use theoretical devices to capture the essential features of the metaphysical process so that we can understand it better. The Plantingean answer to the grounding objection does not help us better understand God's deliberation, because it fails to be informative. To have a trivial grounding for the truth of the deliberative conditionals like the Plantingean reply will leave the deliberative conditionals mysterious and appearing ad hoc, which will surely not facilitate our understanding of the divine deliberation. Therefore, whether the Plantingean reply manages to ground the deliberative conditionals or not, we should treat it as unacceptable due to our purpose of modeling and understanding God's deliberation.

I sympathize with Hasker's intuition that the truth of a contingent conditional statement must be grounded in some categorical states of affairs.[16] Hasker mentions that "[i]n order for a (contingent) conditional state of affairs to obtain, its obtaining must be grounded in some categorical state of affairs."[17] It seems a misnomer to me to claim that one state of affairs grounds the obtaining of some other state of affairs. Grounding, or truth-making, is normally treated as a relation between truth and reality/states of affairs. Is Hasker suggesting that all conditional states of affairs are reducible to or, perhaps, supervene on categorical states of affairs? Or might he be suggesting that all conditional states of affairs are caused by certain categorical states of affairs to obtain? I do not pass any further judgment on his remark. But I endorse Hasker's intuition that a true contingent statement must be grounded in some categorical states of affairs. By this standard, we can also tell that the Plantingean reply is inadequate, because what it proposes to ground the deliberative conditionals are themselves conditional facts.[18] This is one last reason why we should abandon the Plantingean solution to the grounding objection.

II. The Freddosoan Solution

In reply to Adams and Hasker's objection, Freddoso develops a way of grounding the counterfactuals of freedom that appears promising. In this section, I will use his reply to form a Freddosoan solution to the grounding objection in this context. But later I will explain why we should not use the Freddosoan solution in our context.

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[16] Hasker, ibid., 30. Note that by citing Hasker's view, I am not using it as the basis of another argument against the adequacy of the Plantingean solution.

[17] Hasker, ibid., 30.

[18] It should be emphasized that, by accepting Hasker's intuition, I do not commit myself to denying the existence of conditional facts or conditional states of affairs.

Perhaps impressed by Plantinga's analogy between CCFs and true future/past contingents, Freddoso works out a general formula for nontrivially grounding them all. Let x be a variable for sentence copulas, y be an indicator of time, and z be a statement. So,

> Freddoso's formula: "It x the case (y) that z" is now grounded iff "z is grounded" x the case (y).[19]

To illustrate the applicability of Freddoso's formula to true past contingents, let x be "was", y be "in year 2000", and z be "Bush wins the presidential election." So,

> "It was the case (in year 2000) that Bush wins the presidential election" is now grounded iff "Bush wins the presidential election is grounded" was the case (in year 2000).

The formula makes perfect sense for true future contingents as well. Let x be "will be", y be "in year 2012", and z be "Obama finishes his first term." So, by the formula,

> "It will be the case (in year 2012) that Obama finishes his first term" is now grounded iff "Obama finishes his first term is grounded" will be the case (in year 2012).

Again, let x be "would be", y be "if God were to perform creative act a", and z be "world w gets actualized." So the formula will turn out to be:

> "It would be the case (if God were to perform creative act a) that world w gets actualized" is now grounded iff "world w gets actualized is grounded" would be the case (if God were to perform creative act a).

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[19] See Alfred Freddoso's "Introduction" to his translation of Luis de Molina's *On Divine Foreknowledge: Part IV of the Concordia*, Ithaca: Cornell University Press, 1988, 71-72. Here I quote from Tom Flint's *Divine Providence: The Molinist Account*, 134.

Let's call this instantiation of the formula the "Freddosoan grounding of the deliberative conditionals." Given the way it appears, the Freddosoan solution seems totally reasonable.

Though ingenious par excellence, the Freddosoan solution does not deliver what we hoped for. First of all, it fails to provide an explicit answer as to how the deliberative conditionals are grounded. The right-hand side of the Freddosoan grounding remains obscure, without providing a distinct interpretation for the sentence "world w gets actualized is grounded." Since we lack a clear answer as to how the deliberative conditionals are grounded, we lack an informative model and it follows that we should reject the Freddosoan grounding in search of a better one. Secondly, the Freddosoan solution is question-begging. The right-hand side of the formula is itself a subjunctive conditional, and is no less in need of grounding. So in the end, the solution we have does not enlighten us as to how subjunctive conditionals are grounded. Moreover, according to Hasker's intuition, the deliberative conditionals must be grounded in categorical states of affairs. Yet the Freddosoan grounding does not guarantee a categorical grounding for the deliberative conditionals. These reasons combined, the Freddosoan way of grounding is not illuminating enough to make the model adequate, and therefore, should be passed.

III. The Deliberative Conditionals Are Grounded in God's Will

Can we try grounding the truth of the deliberative conditionals in an act of will made by God? Maybe God performed an act of will, and it is that act of will that has brought about the truth of the deliberative conditionals. Or we may suggest that there is a collection of acts of will, every one of which is responsible and effective for bringing

about the truth of one unique deliberative conditional. I think this solution should be eliminated.

First of all, there is a danger of getting caught in a vicious infinite regress. Suppose the act of will in question is A, and A is responsible for bringing about the truth of the conjunction of the deliberative conditionals S. But how should we delineate the relation between A and S? What does the causal relation between A and S boil down to? It is tempting to phrase it with a conditional, like "if God performs A, then S will be true." But then we will be facing the task of grounding the truth of that new conditional, and it could continue endlessly. That infinite regress, as we can imagine, is going to be vicious, since we lack a definitive answer at every stage.

Secondly, it is a confusion to think that the deliberative conditionals are grounded in God's act of will. Grounding, as in the grounding objection, is synonymous with truth-making. To find the truth-maker of a proposition is to explain what it means for that proposition to be true. This should be distinguished from finding the causal explanation of some event or state of affairs. For example, suppose the following proposition is true:

(W): The water in the bath tub is warm.

What is its truth-maker going to be? It will be the state of affairs that the water in the bath tub is warm, or the fact that the water in the bath tub instantiates the property of being warm, etc. It would be misguided to identify its truth-maker as the fact that the heater is on and the water in the bath tub has flown out from the heater. Similarly, it would be misguided to think of the truth-maker of the deliberative conditionals as some divine act that has brought about the truth of the deliberative conditionals. That would be

providing a causal explanation of their truth, rather than explaining what their truth consists in.

IV. The Deliberative Conditionals Are Grounded in God's Disposition

Could the deliberative conditionals' truth be grounded in God's disposition? I don't think so, as this solution will have difficulty satisfying any of the three views on truth-making. C. B. Martin has demonstrated that dispositions are neither logically sufficient nor logically necessary for the truth of the relevant conditionals. So the Necessitating view fails to be satisfied.

Can the truth of the deliberative conditionals supervene on one of God's dispositions? No, it can't. Admittedly, some of God's dispositions are contingent, since they involve the free acts of human beings. For example, God has the disposition of forgiving Clinton for cheating on his wife. Clinton contingently exists, and freely chose to cheat on his wife. Thus, God's disposition of forgiving him for that very mistake is also a contingent one. However, the disposition of God's that may be invoked to ground the deliberative conditionals must not involve free acts of any creature, since the conditionals are useful for God's deliberation that takes place prior to creation. But if the disposition invoked doesn't involve the free action of creatures, then it is probably necessary. In other words, God must have that disposition in every world. However, the deliberative conditionals, as we agreed upon, are contingently true. Some worlds have them true, while some don't. Given this fact, it is evident that the truth of the deliberative conditionals does not supervene on God's disposition.

This proposal also has a hard time under the grounding view. The grounding view states that what grounds the truth of a statement has to be a fundamental feature of a

world. God's dispositions are surely fundamental features. But how do we link the deliberative conditionals with any of God's dispositions? We cannot simply state that as a brute fact, as that will not help with the model being informative. It seems mysterious how we can connect the two.

V. The Deliberative Conditionals Are Grounded via the Possible World Semantics

So the only option I can conceive of is to turn to a semantics for subjunctive conditionals. With a semantics in hand, we may be able to provide an explanation for the truth of the deliberative conditionals. The place to start with is the standard semantics for subjunctives developed by Stalnaker and Lewis. Although the semantics initiated by Stalnaker contains the context-dependent, vague term of selection function, Lewis takes serious efforts in working out the content of key notions like similarity or closeness between worlds. So our next job is to rely on Lewis's semantics to find out whether it provides a way for grounding the deliberative conditionals. I will argue that turning to Lewis's semantics leads us to face another objection—the locality objection.

According to Lewis's semantics, $p \mathrel{\Box\!\!\rightarrow} q$ is true if and only if p is true in no world or there is some world w such that p & q is true in w and w is closer to the actual world than any p & ~q world.[20] When he presented his theory in 1973, he seemed to intend closeness to mean overall similarity. But this causes a problem. If we measure how close a world is to the actual world in terms of how much overall similarity it shares with

[20] See David Lewis, *Counterfactuals*, Oxford: Basil Blackwell, 1973, Chapter One.

the actual world, then no counterfactuals with big-difference consequents will be true.[21] The following conditional is reasonably true:

(H): If Hitler had died in infancy, then it would not have occurred that millions of Jews were murdered in the 1930s and 1940s.

But if we use overall similarity to rank worlds in terms of their closeness to the actual world, a world in which Hitler dies in infancy and someone who has similar experiences as the actual Hitler and who ends up being the Führer of the third Reich and killing millions of Jews will be closer to the actual world than a world in which Hitler dies in infancy and no third Reich even comes into being. Then, based on Lewis's semantics, (H) will be false.

Lewis recognized this problem with his earlier theory. In his revised account in 1979, Lewis lists the factors for determining closeness on the basis of their relative weights:

(1) It is of the first importance to avoid big, widespread, diverse violations of law.

(2) It is of second importance to maximize the spatio-temporal region throughout which perfect match of particular fact prevails.

(3) It is of the third importance to avoid even small, localized, simple violations of law.

(4) It is of little or no importance to secure approximate similarity of particular fact, even in matters that concern us greatly.[22]

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[21] For the same diagnosis of Lewis's earlier theory, see Bennett's *Philosophical Guide*, 196, and Edgington, "On Conditionals," 255. The first such objection to Lewis's 1973 semantics was raised by Kit Fine. He used the famous "Nixon-pressing-button" example. See Fine's "Critical Notice," *Mind* 84, No. 335, (July, 1975), 452.

[22] David Lewis, "Counterfactual Dependence and Time's Arrow," *Nous* 13, No. 4, (November, 1979): 455-476.

As to violations of law, Lewis calls them 'miracles.' Two features of Lewis's analysis of closeness are noticeable: first, he uses the notion of law; second, he employs the notion of miracle. Lewis defines closeness in terms of the notions of law and miracle. And this will be a source of problem for us when we try to ground or explain the truth of the deliberative conditionals with his semantics.

Let's go back to the subjunctive model. We already noted that the deliberative conditionals must be contingent. Now the only option conceivable is to use a semantics to ground the contingent truth of the deliberative conditionals. David Lewis's semantics is the most respected semantics for subjunctives. So we turn to David Lewis's semantics as we try to ground the deliberative conditionals. But interpreting the grounding in terms of Lewis's semantics, though perhaps resolving the grounding objection, incurs a no less serious objection which I call the "locality objection."

In Lewis's semantics, the truth of a conditional is always associated with a particular world. For example, $p_1 \boxed{\rightarrow} q_1$ is true in world w_1, but false in world w_2. This is because under the Lewis's semantics and any other possible world semantics, a subjunctive may well have different truth values across worlds and the world in which a subjunctive is evaluated matters to its truth. When the world is not specified, it is simply assumed that it is in the actual world that the conditional is being evaluated. Now returning to the deliberative conditionals, we know that they are all true. But in which world are they all true? They are true in the actual world, obviously. Given that the deliberative conditionals are known by God and are used by him for deliberation, they are true prior to creation. Therefore, the deliberative conditionals are true before God decides which world to actualize. This generates a problem. Before God decides which

world to create, the actual world, i.e. the same world God is in, is in an indeterminate state. It includes God, certain necessary truths in the background, and the deliberative conditionals, and nothing more. Until God makes up his mind, it is genuinely indeterminate which world the actual world will develop into. Similarly, it is also indeterminate which worlds are the closest to the actual world, or how the spheres (i.e., sets of worlds equally close to the actual world) around the actual world are distributed in terms of closeness. We can thus infer that the truth of the deliberative conditionals is not determined given the possible world semantics, which leaves us with the conclusion that the truth of the deliberative conditionals cannot be grounded via the possible world semantics.

Furthermore, Lewis's revised semantics includes the use of natural laws. But when the actual world is indeterminate, it is equally indeterminate what the natural laws will be like in the actual world. This strengthens our conclusion that Lewis's semantics does not apply to the grounding of the deliberative conditionals.

Could this way of grounding be saved by claiming that the deliberative conditionals are true in all the feasible worlds? The feasible worlds are the worlds whose actualization is included in the consequents of the deliberative conditionals. In each particular world, the truth of the deliberative conditionals is determined, and God knows their truth values distinctly. Since the deliberative conditionals are true in all the feasible worlds and God knows that, God can simply use these deliberative conditionals for his deliberation. Though it appears reasonable, I think this adjustment only begs the question. Whether the deliberative conditionals are true in the feasible worlds or not, it is a separate issue how they are true in the actual world, given what the actual world is like while God

is deliberating. To claim that the deliberative conditionals are true in the feasible worlds does not help grounding their truth in the actual world.

Therefore, using the Stalnaker-Lewis possible world semantics does not help us ground the truth of the deliberative conditionals. The main reason is that the actual world is indeterminate during God's deliberation, which renders the semantics inapplicable. The same conclusion should follow from any way of grounding that relies on some version of possible world semantics. I dub my objection the "locality" objection because it concentrates on what the local circumstance is when God deliberates.

VI. The Deliberative Conditionals Are Grounded via the Alternatives to the Standard Semantics

The Stalnaker-Lewis semantics has been under attack and revision ever since it was discovered. Before the Stalnaker-Lewis semantics came into being in the 1960s, a family of theories about counterfactuals—called "support" theories—was already being discussed in the 1940s. Different from the possible worlds semantics, support theories do not involve any mentioning of worlds. Also, people like Edgington think that counterfactuals do not possess truth value.[23] In the meantime, new semantics—possible worlds ones or free-of-words ones—keep showing up in journals.[24] I will mainly discuss support theories and Edgington's no-truth-value claim and how they bear on the subjunctive model. As to the new semantics that have arisen recently, since they mostly

[23] See Edgington, "On Conditionals," Part 7.

[24] For samples of most recent developments, see Chales Cross, "Conditional Excluded Middle," *Erkentnis* 70, No. 2, (March, 2009): 173-188; Eric Hiddleston, "A Causal Theory of Counterfactuals," *Nous* 39, No. 4 (2005): 632-657; Douglas N. Kutach, "The Entropy Theory of Counterfactuals," *Philosophy of Science* 69, No. 1, (March, 2002): 82-104; Robert Williams, "Chances, Counterfactuals, and Similarity," *Philosophy and Phenomenological Research* 77, No.2 (September, 2008): 385-420; Seahwa Kim & Cei Maslen, "Counterfactuals as Short Stories," *Philosophical Studies* 129, No. 1, (2006): 81-117.

use the possible worlds language and hence are equally subjected to the locality objection, I choose to leave them aside for the moment.

Chisholm and Nelson Goodman were the leading voices in support of the support theories.[25] A later proponent of support theories is William Parry.[26] There is a family of different versions of support theories, the differences between which are derived from their incompatible definitions of certain key terms. A typical support theory can be summarized as:

A counterfactual conditional "A $\Box\!\!\rightarrow$ C" is true if and only if there is a conjunction of truths T which include a law of nature such that A & T entails C.[27] The difficulty for support theories is to explicate what conditions T should satisfy. But that does not concern us here. Based on the summary of the theory, we can already see that it is unsuitable for grounding the deliberative conditionals, for a similar reason as the possible world semantics. The conjunction of truths T includes natural laws, and natural laws have to be associated with particular worlds. Talks about natural laws without specifying worlds are meaningless. When God is deliberating, which world is the actual world is not determined yet and therefore, it is also undetermined what the natural laws are. So, when we use support theories to ground the truth of the deliberative conditionals, we are once again confronted with the locality objection.

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[25] See Chisholm, "The Contrary-to-fact Conditional," *Mind* 55, No. 220, (October, 1946): 289-307, and Goodman, "The Problem of Counterfactual Conditionals," *The Journal of Philosophy* 44, No. 5, (February, 1947): 113-128.

[26] Parry, "Reexamination of the Problem of Counterfactual Conditionals," *The Journal of Philosophy* 54, No. 4, (February, 1957): 85-94.

[27] Edgington, "On Conditionals," 248. An extra condition on T is that it should not entail the negation of A; otherwise, all counterfactuals will be true given this definition.

How about dropping the truth claim, like Edgington does? Obviously there will be no need for us to ground the truth of the deliberative conditionals. Edgington does provide some good reasons for denying that subjunctives have truth value, but let us set them aside for now and focus on the new subjunctive conditional model which is composed of subjunctives lacking in truth value. I think a model like this will not be significantly different from the indicative conditional model whose deliberative conditionals are indicative conditionals lacking in truth value. One's degree of belief in a subjunctive conditional $p\square\rightarrow q$, according to Edgington's view, is identical with $b(p\&q)/b(p)$, $b(p\&q)$ and $b(p)$ being one's subjective probabilities for $p\&q$ and p, respectively.[28] To maintain consistency with the conventional notion of God's providence, God's degree of belief in the conjunction of the deliberative conditionals should be equal to 1, which we also claimed in chapter three. In chapter five, I will explain how a model like this, along with the indicative model from chapter three, are inferior to a model built under the conditional decision theory, and how these three models actually have to be based on the causal decision theory.

Conclusion

I think my argument is powerful enough to show that the deliberative conditionals of the subjunctive model cannot be grounded. But in order to be a functional model, their truth has to be accounted for. Therefore, I suggest that we should get rid of the subjunctive model.

So far we have gone over four different conditional models. They all use conditionals to denote the relations between God's DCAs and the actualization of the

[28] Edgington, ibid., 263.

worlds. But most of them did not turn out very well. The only conditional models that appear to work are the indicative model and the subjunctive model under the presupposition that neither indicatives nor subjunctives have truth value. So in the next chapter, I shall discuss the possibility of building models without using conditionals, and I shall also compare those models with the indicative and subjunctive conditional models under the no-truth claim.

CHAPTER SIX

Decision Theories

For the previous four chapters, I have been assuming that God uses conditionals to deliberate. Hence, under that assumption, I have searched for one kind of conditional that can be used to play one of the key roles in modeling God's deliberation, i.e. to represent the relations between divine creative acts (DCAs) and the actualization of worlds. The conditionals we have gone through include strict, material, indicative, and subjunctive conditionals. Each time I built a model with one of them, I treated the deliberative conditionals as true (though the story for the indicative model is slightly intricate) and the outcome of each creative act by God as singular. Let 'a C w' be the general form for deliberative conditionals under these four models, and C stand for any one of these four conditionals. Also let U(w) stand for God's preference for a world. Hence the deliberation matrix for God appears as is shown in Table One:

Table One. Deliberation Matrix

DCAs	Utility of Outcomes
a_1	$U(w_1)$
a_2	$U(w_2)$
a_3	$U(w_3)$
…	…
a_n	$U(w_n)$

The background state of world is simply the set of all necessary truths, excluding those mentioning contingent beings.[1] Because DCAs and worlds are connected via true

[1] Perhaps my limiting clause here needs to be improved. Some necessary truths are probably useful for God's deliberation even though they do mention contingent beings. And on the other hand, some

conditionals and God knows their truth, when calculating the expected utility of each DCA, God equates it with his preference for the corresponding world that gets actualized. So the two-column deliberation matrix is relatively simple. However, as our previous discussion has hopefully shown, no matter which of the four conditionals we choose, the model built withal turns out to be problematic. Although my discussion may not warrant the conclusion that one should thereby give up those models, it does pose a notice that anyone committed to them has abundant theoretic work to do before she should feel satisfied. So what should we do now?

I believe that instead of biting the bullet by furbishing our previous models, we should reflect on the assumptions we have held and consider dropping some of them. Since one thing in common with the four conditional models is that they all have involved some sort of conditionals, perhaps the first assumption we should consider abandoning is that God uses conditionals to deliberate. Perhaps when we model divine deliberation, we should treat God as using something else to represent act-outcome relations. And we will not be alone in thinking this way if we do let go of this assumption. Certain conditional decision theorists, or rather, conditional decision theorists in general, have insisted on using conditional probabilities; causal decision theorists, a relatively younger group, have upheld the use of causal statements.

Therefore, in this chapter I shall discuss several ways of modeling God's deliberation that make no appeals to any conditional statements that characterize the relations between DCAs and the actualization of worlds. First, I shall briefly explain the main differences between conditional and causal decision theories. Then, I shall spend

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necessary truths, though not involving contingent beings, probably should not be included in the state of world.

one section focusing on the conditional decision theory. I first use a quick argument to show that if we use conditional probabilities to represent the relations between DCAs and worlds, these conditional probabilities had better be 1, for otherwise the model we have will go contrary to the traditional picture of God. Then I deal with one potential source of worry: according to the standard definition (viz. the Ratio analysis) of conditional probability, a conditional probability P(C/A) equals the ratio between the probability of A & C and the probability of A.[2] Since in the context of divine deliberation, both $P(a_n \& w_n)$ and $P(a_n)$ are undefined, $P(w_n/a_n)$ should also be treated as undefined, so the objection goes. I argue that this objection is based on a false premise and hence constitutes no real threat. However, I claim that we still face the task of explaining why the probability of $P(w_n/a_n)$ is 1. I canvass several possibilities and then conclude that we are compelled to resort to a causal explanation. Thirdly, I shall discuss the possibility of using causal decision theories to model divine deliberation. I shall go through three major candidates: Gibbard & Harper, David Lewis, and Brian Skyrms. Gibbard & Harper's version involves subjunctive conditionals, which makes a model using their theory not significantly different from the subjunctive model we already went through. So it is no live option for us. Lewis and Skyrm's versions are very close to each other, and they both avoid the explicit use of subjunctives. However, I argue, when we apply their versions of causal decision theory to the modeling of divine deliberation, we end up with models that are strikingly similar. In the end I conclude that the three models we have from this chapter, along with the indicative conditional model from chapter three, are essentially one and the same causal model.

[2] Unless otherwise noted, all the probability functions in this chapter refer to subjective probabilities.

I. Conditional Decision Theory versus Causal Decision Theory

In this section, I compare conditional and causal decision theories and explain their main differences. I then argue that using the two theories does not cause God's deliberation to commend different creative acts, assuming other things to be equal. However, as my next two sections will show, the two theories do have different theoretical implications in this context. So we should be careful when evaluating their applicability.

Conditional decision theory has also been called "evidential decision theory." The underlying intuition is that when we deliberate we should pick the act that has the *tendency* to bring about the biggest amount of good. And such tendencies have always been defined in terms of conditional probabilities. A noted advocate is Richard Jeffrey.[3] According to his view, the expected utility of an act, U(a), should be equal to

$$p_1d_1 + p_2d_2 + p_3d_3 + \ldots + p_nd_n.$$

Here d_i stands for the expected desirability of the ith possible outcome, S_i, of a given act a; p_i represents the probability attributed by the subject to S_i given the assumption that she is about to perform the act a. So p_i is clearly a conditional probability and can be written as $P(S_i/a)$. An act a has the highest expected utility if and only if U(a) is no lower than the expected utility of any other option. According to the theory, the ideal agent picks the act with the highest expected utility.

Stalnaker is probably the first person to propose causal decision theory as a major alternative to conditional decision theory. One of his motivations for the proposal seems

[3] See Jeffrey, *The Logic of Decision*, Chicago: University of Chicago Press, 1965, 5-6.

to be solving the Newcomb problem.[4] The problem goes like this. An agent is faced with a choice between taking an opaque box and taking both an opaque box and a transparent box. The transparent box has one thousand dollars in it and the agent knows this fact. He does not know what is in the opaque box but he knows that a prediction has been made by a very reliable source about his act. Also known to the agent is that if the prediction was that he will take both boxes, then the opaque box is empty, and if the prediction was that he will take only the opaque box, then the opaque box has one million in it. Let a_1 be taking the opaque box only, and a_2 be taking both boxes. The following matrix, Table Two, shows the agent's options and their outcomes:

Table Two. The Newcomb Problem

Options	Prediction that a_1	Prediction that a_2
a_1	one million	0
a_2	one million + one thousand	one thousand

According to conditional decision theory, the expected utilities of a_1 and a_2 should respectively be:

$U(a_1) = P(\text{prediction that } a_1/a_1) \times \text{one million} + P(\text{prediction that } a_2/a_1) \times 0;$

$U(a_2) = P(\text{prediction that } a_1/a_2) \times (\text{one million} + \text{one thousand}) + P(\text{prediction that } a_2/a_2) \times \text{one thousand}.$[5]

[4] For a good account of the history, see Paul Weirich's *Stanford Encyclopedia of Philosophy* entry "Causal Decision Theory," published in 2008, URL = <http://plato.stanford.edu/entries/decision-causal/>. The Newcomb's problem was formally introduced into the discussion on decision theory by Robert Nozick. See his "Newcomb's Problems and Two Principles of Choice" in Nicholas Rescher ed., *Essays in Honor of Carl G. Hempel*, Dordrecht: D. Reidel, 1970, 114-146.

[5] Let's assume in this case that the utility of a possible outcome is simply its monetary value. This assumption may not be carried over to every case.

Since the prediction is from a very reliable source, P(prediction that a_1/a_1) and P(prediction that a_2/a_2) should both be close to 1. That means $U(a_1)$ ≈ one million and $U(a_2)$ ≈ one thousand. So a_1 promises a much higher utility. Therefore, a_1 is the act that conditional decision theory commends. However, taking a_2 seems more intuitive. Under each possible state, a_2 corresponds to a higher utility than a_1. In other words, a_2 dominates a_1. So we should take a_2.[6]

Stalnaker proposed his decision theory partly to support the more intuitive option regarding the Newcomb problem. According to him, when we calculate the expected utility of possible acts, we should use probabilities of subjunctive conditionals, rather than conditional probabilities. Let $S_1, \ldots, S_n$ be a mutually exclusive and jointly exhaustive set of propositions each of which characterizes a possible outcome of a certain act A. Let "$A \mathrel{\square\!\!\rightarrow} S_1$" be the proposition that "if it were the case that the agent takes A, then S_1 would be true." Hence, the expected utility of A is defined by Stalnaker as:

$$U(A) = P(A \mathrel{\square\!\!\rightarrow} S_1) \times U(S_1) + P(A \mathrel{\square\!\!\rightarrow} S_2) \times U(S_2) + \ldots + P(A \mathrel{\square\!\!\rightarrow} S_n) \times U(S_n).$$[7]

Applied to the Newcomb problem, Stalnaker's theory does generate the same result as our intuition, viz. taking both boxes. Because the prediction has been made, whether I take a_1 or a_2 is causally irrelevant to it. Therefore, $P(a_1 \mathrel{\square\!\!\rightarrow}$ prediction that $a_1) = P(a_2 \mathrel{\square\!\!\rightarrow}$ prediction that $a_1)$, and $P(a_1 \mathrel{\square\!\!\rightarrow}$ prediction that $a_2) = P(a_2 \mathrel{\square\!\!\rightarrow}$ prediction that $a_2)$. Calculated using Stalnaker's formula, $U(a_1)$ thus turns out to be smaller than $U(a_2)$.

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[6] For an introduction to the Dominance Principle, check out Michael Resnik's *Choices: an Introduction to Decision Theory*, Minneapolis: University of Minnesota Press, 1987, 9-10. The Dominance Principle basically says that an agent should pick the act that dominates the others in the case of dominance. Though appearing highly intuitive, it may not deliver the true result in every deliberative circumstance.

[7] For the exact way he presented his decision theory, see Stalnaker's "Letter to David Lewis," written in 1972, in Harper et al ed., *Ifs: Conditionals, Belief, Decision, Chance, and Time*, Dordrecht: D. Reidel, 1981, 151-152.

Hence, a_2 is the act that should be taken, under the principle that utility should be maximized.

Following Stalnaker's lead, Gibbard & Harper, David Lewis, and Brian Skyrms have each come up with their own versions of causal decision theory. In section III of this chapter I will discuss whether any one of their theories can be used for modeling divine deliberation. But for now, I still have a few more general comments about the applicability of the two decision theories to the modeling of divine deliberation.

In the Newcomb problem, conditional decision theory and Stalnaker's causal decision theory favor different options. And imaginably, there are many situations that resemble the Newcomb problem so that the two decision theories have conflicting results. Such circumstances will not arise if the act is probabilistically independent of its causal propensity; or put differently, if for any option A, $P[(A \mathrel{\square\!\!\rightarrow} \text{Outcome})/A]$ equals $P(A \mathrel{\square\!\!\rightarrow} \text{Outcome})$.[8] Now moving to the subject of divine deliberation, the alternative acts, $a_1, \ldots, a_n$, are divine creative acts, the state of the world is the set of all necessary truths excluding those mentioning contingent beings, and the outcomes are the actualization of worlds, $w_1, \ldots, w_n$. Clearly, $P(a_i \mathrel{\square\!\!\rightarrow} w_i)$ and $P[(a_i \mathrel{\square\!\!\rightarrow} w_i)/a_i]$ are equal. Each divine act in the deliberation matrix is causally related to its corresponding world. And this causal connection between a DCA and its related world is neither strengthened nor weakened by the hypothetical supposition that God decides to take a_i. It follows that the probability of

[8] For a detailed proof of this claim, see Gibbard and Harper, "Two Kinds of Expected Utility," in *Ifs*, 157-159. For a general discussion of this claim, see Brian Skyrms's "Causal Decision Theory," *The Journal of Philosophy* 79, No. 11, (November, 1982): 697-698.. Notice in the original Newcomb problem, the if-clause is not satisfied. For example, $P(a_1 \mathrel{\square\!\!\rightarrow} \text{one million}) = P(a_2 \mathrel{\square\!\!\rightarrow} \text{one million plus one thousand})$ because both a_1 and a_2 are causally unrelated to whether the opaque box has one million in it, yet $P[(a_1 \mathrel{\square\!\!\rightarrow} \text{one million})/a_1]$ is much higher than $P[(a_2 \mathrel{\square\!\!\rightarrow} \text{one million plus one thousand})/a_2]$. Hence, $P(a_1 \mathrel{\square\!\!\rightarrow} \text{one million}) \neq P[(a_1 \mathrel{\square\!\!\rightarrow} \text{one million})/a_1]$ or $P(a_2 \mathrel{\square\!\!\rightarrow} \text{one million plus one thousand}) \neq P[(a_1 \mathrel{\square\!\!\rightarrow} \text{one million plus one thousand})/a_2]$. Admittedly, the if-clause only refers to a sufficient condition for the two decision theories to match their recommendations; it may not refer to a necessary condition. But that should not concern us here.

$P(a_i \mathrel{\square\!\!\rightarrow} w_i)$ per se is equal to the probability of $P(a_i \mathrel{\square\!\!\rightarrow} w_i)$ given the assumption that God performs a_i. Therefore, $P(a_i \mathrel{\square\!\!\rightarrow} w_i)$ and $P[(a_i \mathrel{\square\!\!\rightarrow} w_i)/a_i]$ should be equal. God is an omniscient being; so he knows that they are equal. It follows that as we model divine deliberation, using conditional decision theory and causal decision theory will not generate conflicting results for God, *ceteris paribus*. But we should not thereby think that the two decision theories are equally eligible for being used to model divine deliberation. Not only do they employ different ways of calculating expected utilities, they rely on different relations between acts and outcomes. As the previous chapters have shown, the relation we ascribe to DCAs and world actualization tends to have nontrivial metaphysical implications or presuppositions. We have used these metaphysical implications/presuppositions as one chief criterion for evaluating the propriety of a conditional model. In the next two sections, I shall treat the two decision theories one at a time, exploring their implications and deciding how useful they will be for modeling God's deliberation.

II. Using Conditional Decision Theory

In this section, I focus on the possibility of using the conditional decision theory to model divine deliberation. The matrix we draw at the beginning remains accurate except that we calculate the expected utilities of the DCAs as such:

$$U(a_i) = P(w_i/a_i) \times U(w_i).$$

In the following I first use a quick argument to show that all the conditional probabilities in the divine deliberation should be treated as 1, in order for the model to be plausible. Then I consider one objection that $P(w_i/a_i)$ should instead be treated as undefined. I argue that this objection fails. We are justified to take all $P(w_i/a_i)$s as 1. But, as I shall

argue, we need to provide an appropriate explanation for $P(w_i/a_i)$'s being 1. After rejecting several trials, I conclude that the only working option is to appeal to God's causal power, and that will in effect lead the model to adopt the causal decision theory instead of the conditional decision theory. So the model that results is really a causal model, not a conditional model.

First, I argue that the probability of the actualization of world w_i conditional upon God's taking a_i, i.e. $P(w_i/a_i)$, should be 1. The argument is quite simple. We should all agree that $P(w_i/a_i)$ is either 1 or very close to 1. We stipulated earlier that a DCA is causally efficacious to bring about its corresponding world. Thus, if God decides to perform a certain DCA, the actualization of its corresponding world should be extremely probable for God, or rather, simply be certain for him. Given an Anselmian account of God, God is the being than which none greater can be conceived. A God who is certain about the outcome of a given DCA is more perfect than a God who is less than fully certain about the outcome of the same DCA. Therefore, we should accept that if God decides to perform a certain DCA, God is certain about the actualization of its related possible world. Besides, treating God as being certain under the imagined situation does not bring us more metaphysical commitment than treating God as being near certain. On the contrary, if we treat God as merely near certain, we will have to construct a multi-column deliberation matrix. Assuming that there is always a partition of possible states/outcomes in a matrix, when we take $P(w_i/a_i)$ as less than 1, we will be obliged to furnish alternative outcomes of a_i such that $P(\text{alternative}_1/a_i) + P(\text{alternative}_2/a_i) + \ldots + P(w_i/a_i) = 1$. That, I think, is a distorted representation of God's greatness and providence. As the master of creation, God knows the exact outcome of each of his alternative acts,

and because God is as omniscient as any being can possibly be, God knows the outcome with full certainty. Moreover, treating God's DCA as having multiple possible outcomes in God's deliberation matrix presents an image of a God who does not know with certainty what exactly will happen once he takes a particular DCA and thus, lacks full sovereignty over his creatures. Therefore, we should insist that God is certain that if he takes a certain DCA, the actualization of its related possible world will occur. That means that the conditional probability of the actualization of w_i given God's taking a_i has to be 1.

Here one may object that the conditional probabilities in issue are undefined. According to the RATIO analysis,

$$P(C/A) = P(A \ \& \ C) / P(A).$$

Replacing the variables with elements of the deliberative model, we have

$$P(w_i/a_i) = P(a_i \ \& \ w_i) / P(a_i).$$

When God is contemplating over which world to actualize, he does not assign probabilities to either a_i or a_i & w_i. The explanation goes as follows. No matter which DCA God is about to perform, God will choose one DCA from a_1, a_2… and a_n, and performs it to finish his creation project. So

$$P(a_1 \text{ v } a_2 \text{ v } a_3 \ldots \text{v } a_n) = 1.$$

Because God will never perform two DCAs, that is, for any two DCAs a_m and a_n, $P(a_m \ \& \ a_n) = 0$,

$$P(a_1) + P(a_2) + P(a_3) \ldots + P(a_n) = P(a_1 \text{ v } a_2 \text{ v } a_3 \ldots \text{v } a_n) = 1.$$

I imagine the number of feasible worlds is infinite, and based on our assumed one-on-one correspondence between DCAs and feasible worlds, the number of DCAs at God's

disposal should also be infinite. Now suppose God assigns equal probabilities to all the DCAs. Then, because the alternative DCAs are infinitely many, the probability of each DCA will be 1 divided by infinite, i.e. 0. So under the presumption that God assigns an equal probability to all the DCAs, all the DCAs will be zero probable for God, which is absurd because that will simply amount to disqualifying all the possible actions and the cancellation of the deliberation. Now suppose God assigns nonzero probabilities to some of the DCAs, then the remaining, infinitely many DCAs will all have zero probability. That, once again, will lead to the collapse of God's deliberation matrix into one with a finite number of alternative acts and a finite number of feasible worlds, which is contrary to our assumption that God is faced with an infinite number of options. Therefore, God does not assign prior probability to any of the DCAs. That is to say, both $P(a_i)$ and $P(a_i \ \& \ w_i)$ are undefined for God. If we treat the Ratio analysis as definitional, then we have to claim that $P(w_i/a_i)$ is undefined for God. Therefore, it is mistaken to identify $P(w_i/a_i)$ as 1.

A key move in this objection is to take the Ratio as a definition of conditional probability. Several philosophers have explicitly or implicitly endorsed this. Frank Jackson writes: "it is important to take the conditional probability of consequent given antecedent to be *defined* as the probability of the conjunction of the antecedent and the consequent divided by the probability of the consequent" (Jackson's emphasis). Besides, Skyrms and Earman have both referred to the Ratio as the "definition" of conditional probability, among other philosophers.[9]

[9] Both the quote and the observation are from Alan Hajek's "What Conditional Probability Could not Be," *Synthese* 137, No. 3, (December, 2003), 274. Jackson's quote is from his *Conditionals*, Oxford: Basil Blackwell, 1987, 12.

Though appearing powerful, the objection should be rejected. In his "What Conditional Probability Could not Be," Hajek powerfully shows that the Ratio should not be treated as a definition. Part of his strategy is to list examples in which certain conditional probabilities have definite values even though in their corresponding ratios, the denominator equals 0 or the numerator or/and denominator are vague or undefined or infinitesimal. One of his examples is a coin-tossing case.[10] Suppose here is a coin which you believe to be fair. Now I am about to toss the coin but haven't yet. What is the probability of "the coin lands heads (Heads)" given that "I toss it fairly (Toss)"? You would surely agree that P(Heads/Toss) is ½. According to the Ratio, P(Heads/Toss) = P(Heads & Toss)/ P(Toss). But both the numerator and the denominator of the right-hand ratio are undefined for you. I haven't tossed the coin yet, and I can freely decide when to toss it and how to toss it. I may even act out my cranky preferences about coin-tossing. However, all these do not cast any doubt on P(Heads/Toss) being ½. Based on a series of examples and arguments, Hajek rejects the Ratio's status as definitional analysis of conditional probability while showing his willingness to treat it as a constraint. So a key lesson from him is that $P(w_i/a_i)$ might be sharply defined even when $P(a_i)$ and $P(a_i \& w_i)$ both remain undefined. So the objection includes a mistaken premise and thus fails.

Therefore, it is possible to use conditional decision theory to model God's deliberation and at the same time, treat the conditional probabilities involved as equal to 1. But we are not done yet! Our argument in the beginning of this section defends the claim that in order to cohere with the conventional notion of God's omniscience and sovereignty, the model should identify all the $P(w_i/a_i)$s to be 1. However, it is a different

[10] Hajek, "What Conditional Probability Could not Be," 296.

issue whether the model is capable of, or has enough resources for, making the value of $P(w_i/a_i)$s to be 1, and a further distinct issue is how God—the deliberating agent—is aware of the stipulated value of all the $P(w_i/a_i)$s.

Suppose we, or rather God, treat the relation between DCAs and worlds as strict implication. That will explain how all the $P(w_i/a_i)$s are equal to 1 and will also afford enough resources for explaining how God knows the $P(w_i/a_i)$s to be 1. On the presumption that a_i strictly implies w_i, $P(w_i/a_i)$ surely equals to 1. God is knowledgeable about all the necessary truths in the background and strict conditionals are necessary truths, hence God knows the $P(w_i/a_i)$s are equal to 1. But we do not want to characterize the conditional probabilities in the matrix in such a manner, because once we do that we will be in effect committing ourselves to a strict conditional model and thereby facing all the objections toward it. For example, one major problem with the strict model, as we showed in chapter 1, is that it implies determinism. If we treat a_i as capable of entailing w_i and explain the value of $P(w_i/a_i)$ in terms of it, we will have to accept that no matter which DCA God eventually picks, whatever is true in the actual world is entailed by that DCA. Therefore, whatever happens in the actual world is pre-determined. Hence, we are committed to a strict model, which is not desirable.

For the same reason, we should not try to explain the value of $P(w_i/a_i)$ by positing a logical relation between DCAs and corresponding worlds. Historically, Carnap was a leader in raising logical interpretations for conditional probabilities (and all probabilities).[11] According to Carnap's program, probability is a useful tool for measuring the degree to which a sentence supports another sentence. But as you may

[11] For a brief introduction to the logical interpretation of probability and its alternatives, see Alan Hajek's "Probability—A Philosophical Overview," § 4.2, in *Proof and other Dilemmas*, Gold and Simmons eds, Mathematical Association of America, 2008, 323-339.

have seen, positing a deductive relation between a_i and w_i will commit us to a problematic strict model. On the other hand, if we limit the relation between a_i and w_i to be inductive, then we will have trouble equating $P(w_i/a_i)$ to 1.

So ultimately, in order to account for the value we have assigned to the $P(w_i/a_i)$s and God's knowledge of their value, we have to resort to God's causal power, or more specifically, the causal efficacy of the DCAs, unless we can construe a different explanation. If we use the conditional decision theory to model divine deliberation, we had better treat the conditional probability of the actualization of worlds given their related DCAs as 1. The best candidate as well as the only candidate for being the explanans seems to be the causal connection between DCAs and the actualization of worlds. People's conceptions of God's causal potency vary, but no matter what conception one holds, it should be strong enough to make the $P(w_i/a_i)$ to be 1. But this generates a problem. Adopting a causal explanation for the conditional probabilities simply changes the nature of the model. The model we end up with, though it contains conditional probabilities, is essentially a model under the causal decision theory. If the only good explanation we can find for the conditional probabilities in the model bases itself on the causal power of the agent or the causal efficacy of the alternative acts, then the model is actually built with a causal decision theory. So it seems impossible or at least highly improbable to build a model for God's deliberation purely with the conditional decision theory.

The indicative conditional model faces a similar problem. In chapter three, I argued that indicative conditionals lack truth value and I espoused an expressivist view on indicative conditionals. Then I suggested that a model built with expressivist

indicative conditionals would be implausible unless we add the qualification that for each deliberative conditional in the model, God is certain about the consequent given the assumption that the antecedent is true. Now in light of my previous trial at finding resources to explain the conditional probabilities in the conditional decision theoretical model as being 1, it is evident that for the indicative conditional model, we have to adopt a causal explanation for God's certainty about the consequents of the deliberative conditionals conditional upon their antecedents. That will make the indicative conditional model essentially a model based on the causal decision theory. In the next part, I shall survey three leading versions of the contemporary causal decision theory and discuss their candidacies for helping us model God's deliberation.

III. Using Causal Decision Theory

In the previous section we focused on the conditional decision theory. Our conclusion was that the success of using conditional decision theory to model divine deliberation depends on a causal explanation of the conditional probabilities in the model, and adopting that explanation will, as a result, turn the model into a causal decision theoretical model. In this section, I search for the possibility of building a model for God's deliberation by directly using the causal decision theory. I first go over Stalnaker and Gibbard & Harper's version, and point out that a model built withal is a subjunctive conditional model which we have already rejected in the previous chapter. Then I introduce Harper and Lewis's versions. Their theories are essentially the same with technical differences that will have no significant bearings on my project.

Gibbard and Harper's version is no different than Stalnaker's.[12] Several features are worth noticing with this version. First, their version (as well as Stalnaker's) utilizes the probability of subjunctives. These subjunctives have available acts as antecedents and possible outcomes as consequents. This leaves it vulnerable to the objection that sometimes one can rationally assign 0 as the probability of all the deliberative subjunctives. Second, Gibbard and Harper's version does not rule out back-tracking subjunctives, which David Lewis finds problematic.[13]

It is clear that we should not build a model with Stalnaker's or Gibbard and Harper's version of causal decision theory. A model built with either will be a subjunctive model, and the immediate preceding chapter has shown the problems with a subjunctive model. To quickly reiterate, the main problem is how to ground the truth of the subjunctives in issue. I canvassed several options, and none of them works.

Skyrms's version of causal decision theory does not involve the explicit use of subjunctives.[14] He distinguishes between factors the agent may influence and factors the agent may not influence. Let $K_1, K_2, \ldots, K_n$ be a partition each of which is a possible specification of all the factors the agent may not influence. Let $C_1, C_2, \ldots, C_n$ be a partition each of which is a possible specification of all the factors the agent may influence. The expected utility of an act A, EUk(A), then equals $\sum_i P(K_i) \sum_j P(C_j/K_i \,\&\, A)$

[12] See Gibbard and Harper, "Two Kinds of Expected Utility." Although their focus seems to be on contrasting conditional with causal decision theory, their sympathy clearly lies with the latter.

[13] See Lewis's "Causal Decision Theory," first published in *Australian Journal of Philosophy* 59, (March, 1981): 5-30. All the page references here are based on the version collected in his *Philosophical Papers II*, New York: Oxford University Press, 1986: 305-339. On 326, Lewis writes 'we must exclude "back-tracking counterfactuals" based on reasoning from different supposed effects back to different causes and forward again to differences in other effects.'

[14] Here I partially rely on Weirich's *Stanford Encyclopedia of Philosophy* entry on causal decision theory.

$U(C_j \& K_i \& A)$. Here $P(C_j/K_i \& A)$ describes the causal propensity of A under K_i, rather than the conditional probability.[15] Applied to divine deliberation, there is no partition of full specifications of factors beyond God's causal influence. As we said in the beginning, the background state of world for God's deliberation is the set of all necessary truths excepting those mentioning contingent beings. I think we are allowed to treat these necessary truths as beyond God's causal influence. The partition of C_j, the set of full specifications of factors God may causally influence, can simply be treated as the partition of $w_1, w_2, \ldots, w_n$. The actualization of worlds is under God's influence and is a partition. So, given Skyrms's causal decision theory, $EUk(a_i) = P(w_i/a_i)\ U(a_i \& w_i)$.[16] This is a really neat result; however, we encounter the same problem as we did in section II. How should we construe the causal propensity of a_i? Obviously the value of $P(w_i/a_i)$ (i.e. the propensity of a_i to bring about the actualization of w_i) should be 1, since God's omniscience and sovereignty underwrite the causal propensity of a_i to bring about w_i as 1.

David Lewis's version of causal decision theory is essentially the same as Skyrms's.[17] Let K_i be a dependency hypothesis which is a maximally specific proposition about how the things the agent cares about do and do not depend on the agent's present actions. The expected utility of a possible act A equals $\sum_i P(K_i)\ U(A \& K_i)$. When applied to divine deliberation, the partition of dependency hypotheses simplifies to the collection of subjunctives in the form of $a_i \ \square\!\!\rightarrow w_i$.[18] So for a DCA a_i,

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[15] Check out Skyrms's "Causal Decision Theory," 696-697.

[16] The reference to background necessary truths can be properly omitted.

[17] See Lewis's "Causal Decision Theory."

[18] In his article, Lewis hints that dependency hypotheses should be defined in terms of subjunctives. He says, "If we want to express a dependency hypothesis in ordinary language, it is hard to avoid the use of counterfactual conditionals saying what would happen if the agent were to realize his

$U(a_i) = P(w_i/a_i)\, U(a_i \& w_i)$, no different than Skyrms's version. And surely it is beyond doubt that $P(w_i/a_i)$ should be 1, as is required by the conventional notion of God's omniscience and sovereignty.

Conclusion

In this chapter I looked at four different models. The first one is based on the conditional decision theory and involves conditional probabilities in the form of $P(w_i/a_i)$. I argued that the conditional probabilities should be treated as 1, based on the notion of an Anselmian God. But, I then claimed, we need to find a proper explanation in the model for those probabilities' being equal to 1, and the only plausible explanation will rely on the causal connection between DCAs and the feasible worlds. The second model uses Stalnaker and Gibbard & Harper's version of causal decision theory. Their model clearly involves subjunctives, and hence, is no different than the subjunctive conditional model which we considered in chapter four. The last two models are built on Skyrms's and Lewis's causal decision theories, respectively. I discovered that when we apply the two decision theories to build our models, we end up with models that are strikingly similar to one another. These two models both utilize God's causal power to account for the conditional probabilities. So the three working models from our discussion in this chapter boil down to one generic model built with the causal decision theory:

There are an infinite number of alternative DCAs, each DCA corresponding with one unique feasible world. God is certain that a world w_i will be actualized given that he performs the DCA that matches w_i, i.e. a_i. God's certainty as such is derived from God's confidence in the propensity of a_i to trigger the actualization of w_i. So the expected

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various alternative options." ("Causal Decision Theory," 325) The examples he uses to illustrate the content of dependency hypotheses are also limited to subjunctives.

utility of each DCA is equal to the utility of the related world. God compares the feasible worlds, selects a world he most wishes to be actual, then performs the DCA that he is certain will cause the selected world to be actual.

The aforementioned indicative conditional model is essentially also a derivative of this generic causal model. But this generic model is just a bare structure. People in different theological camps can insert different specifications to make a fleshier model. And I will not deal with that subject in this project. In the next chapter, I shall consider one question that has been left unattended so far: Which world will God choose to create? Since God is an all-good God, it is natural to think that God will simply actualize the best world. But what if there is no best world, or there are multiple or infinitely many best worlds? Those are the issues I will deal with in the ensuing chapter.

CHAPTER SEVEN

Which World Gets Chosen?

My goal is to build a model for God's deliberation as to which world he should create. A model has three essential elements: alternative acts, possible outcomes of each alternative act, and the relations between corresponding members of the two groups. Specified to a model for divine deliberation, the three essential elements are: divine creative acts (hereafter DCAs), possible worlds that are feasible for creation, and the logical relations between DCAs and possible worlds. In the previous chapters, I have focused on the logical relations. I experimented with various kinds of conditionals and decision theories and drew implications from the models that resulted. In this chapter I shall concentrate on the worlds. My central question will be: Which world does God choose to create? Put differently, which world does God choose to bring into actuality? For the present moment, I assume that only one world gets actualized, and prior to God's decision, no particular world is actual and God exists in an "unidentified" world.

According to classical theism, God is an intelligent being with personhood. So it is not unreasonable to assume that God's decision is driven by certain considerations. These considerations may or may not be sufficient. This issue I will discuss later. Since God is an all-good being, his goodness may well play a role in God's decision and is likely reflected by the world eventually chosen. So one question becomes important at this moment: how much goodness, or value, does God desire in the selected world? A general consensus is that there is a bottom threshold, say *T*, such that only worlds whose values are above *T* are worth creating, no matter what extra considerations God might

have. However, this does not solve all the problems. There are, imaginably, an infinite number of worlds above the threshold. How does God choose from among them? Does the selected world have to be both above *T* and better than all the other worlds? Does it have to be the best possible world?

There are three possibilities concerning the best possible world:

(1) There is exactly one world that is better than any other world;

(2) There are many worlds that are equally good and better than all the other worlds;

(3) There is no best world, and for any world, there is at least one better world.

These three possibilities are not overlapping and are jointly exhaustive. For the sake of brevity, I will name them, respectively, OBW ("one best world"), MBW ("many best worlds"), and NBW ("no best world"). I think that among the three, NBW is true while OBW and MBW are both false. In the following, I will examine prominent arguments for OBW and MBW. I first deal with Kraay's argument for OBW and argue that his notion of the best world is self-inconsistent. Then I discuss Leibniz's version of argument for OBW, and point out certain problems with his argument. I then move onto O'Connor's argument for MBW. After reviewing the gist of his argument, I shall argue that it does not, as a matter of fact, guarantee MBW. After these are done, I then provide my own argument for NBW. I shall explain how God makes a decision under NBW and how that does not contradict his omni-benevolence.

Kraay's Argument for OBW

Kraay's argument for the claim that there is exactly one world superior to all other worlds is unique and recent. He introduces his TM theory mainly in "Theism, Possible

Worlds, and the Multiverse."[1] After listing the three jointly exhaustive and mutually inconsistent possibilities about the best worlds as we did above, Kraay labels the situation in which we find ourselves "an unpalatable trilemma," and contends that his TM theory can lead us into accepting one horn of the trilemma—OBW—and hence resolve the trilemma.

Before getting to the details of his theory, we need to know the differences between worlds and universes, especially since the distinction will turn up again in O'Connor's argument. Usually we take worlds to be in one-to-one correspondence with universes: one world comprises one universe. But Kraay suggests that we can be wrong here: philosophers and scientists have speculated and sometimes approved the existence of multiverses, or worlds that comprise more than one universe.[2] A universe is a self-enclosed spatiotemporal whole. It has its own causal laws, but it is causally disconnected from other universes. A world may contain one or more than one universe. In the case that a world contains more than one universe, it is a multiverse and one should not think of a multiverse as a container for these universes (admittedly, the verb "contain" is misleading). Rather, a multiverse, on Kraay's account (which O'Connor seems to agree), "is simply *comprised of* whatever universes there are in that world, together with whatever nonphysical entities there are."[3] These universes have different causal laws and different individuals. Because they comprise the same world, these universes must not contradict one another. Kraay holds that this has two implications. The first one is that

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[1] *Philosophical Studies* 147, (November, 2010): 355-368.

[2] For a historical survey of this issue, see M. K. Munitz's "One Universe or Many?" *Journal of the History of Ideas* 12, No. 2 (April, 1951), 231-255.

[3] Kraay, "Theism, Possible Worlds, and the Multiverse," 360.

there can be no exact copies of universes within a multiverse. He thinks that to assert the contrary will violate the Identity of Indiscernibles. The second implication is that there is no trans-universe identity of individuals within a multiverse: 'individuals in one universe can perhaps have *counterparts* in other universes, but no individual can exist in more than one universe within a single possible world.' I believe that by "counterparts" Kraay is appealing to a Lewisian definition of counterparts across worlds, although he never specifies it.

Kraay then moves onto a special world, or multiverse, which he calls the "theistic multiverse" (hereafter TM). TM comprises all and only the universes that are worth creating and sustaining (that is, the universes whose values surpasses some objective threshold *T*)[4]. He never provides direct evidence for the existence of such a world, but I can imagine someone defending its existence by defending its logical possibility. Kraay argues that TM is *the* best world; furthermore, God necessarily actualizes TM and God actualizes TM only. Thus for Kraay, the actual world is TM and our universe is one of the numerous universes comprising the actual world.

Kraay's argument for OBW goes in this way. If we admit that TM is a possible world, then we have to agree that there is exactly one best world and that best world is TM. Implicitly, he presumes that we all should admit that TM is a possible world.[5] Therefore, we have to agree that TM is the best world. Consequently, we have to adopt OBW ("exactly one best world") and give up NBW and MBW. Here are the details of his argument. First of all, if we adopt NBW ("no best world"), then we have to agree that

[4] Kraay, ibid., 361.

[5] Ibid., 363.

some worlds are more valuable than TM. By the definition of TM, these worlds must either fail to comprise all the worlds worth creating and sustaining or fail to comprise only the universes worth creating and sustaining. But we have no reason to think that worlds like this surpass TM. A world that fails to comprise all the universes worth creating and sustaining is actually surpassed by TM because TM comprises more worthy universes. As for a world that includes universes unworthy of creating and sustaining, it should also be considered to be surpassed by TM, because TM lacks these unworthy universes. So NBW is not a live possibility once we introduce TM. Secondly, we should also discard the possibility of MBW ("multiple best worlds"). Suppose we accept MBW. That means, there are a number of best worlds. As we have seen, worlds distinct from TM are surpassed by TM. So, TM is among the best worlds and there is only one best world. Kraay further assumes that an unsurpassable God will create and sustain all and only the universes worth creating and sustaining.[6] Therefore, Kraay concludes that God will actualize TM and God will not actualize any other world.

Kraay argues that TM is the best world. But I argue that TM does not exist: no world is such that it comprises all and only the worthy universes, or worlds above a threshold. Kraay's notion of TM is inconsistent with his other claims, as I shall argue. Kraay denies trans-universe identity within the same world. He claims that nothing exists across universes in the same world. This is implied by his belief that universes are causally closed spatio-temporal wholes. But he also says that his denial of trans-universe identity in the same world does not imply the negation of trans-world identity. And in his works, he leaves it open whether any physical being exists across worlds, i.e. whether any

[6] He expresses his assumption in the form of eight principles: PP1, PP2, PP3, PP4, and PR1, PR2, PR3, PR4. See Kraay, "Theism, Possible Worlds, and the Multiverse," 361-362.

physical being exists across universes that belong in different worlds. So in my rebuttal, I shall first presume trans-world identity and argue for my conclusion that TM does not exist, then I shall start over by assuming the contrary and argue for the same conclusion.

First of all, let's suppose that trans-world identity is real, i.e. some physical beings exist across worlds. So when we say "Socrates could have never met Plato," we can be interpreted as saying that there is one world different than ours in which there is a being sharing Socrates' essence yet not sharing his property of having met Plato. The same Socrates exists in both our world and that particular world, but leads different (world-indexed) lives. We do not contradict ourselves when we claim this, as we are in effect claiming that the same Socrates has both the property of having-met-Plato-in-the-actual-world and the property of not-having-met-Plato-in-world α. Now think of another famous person, Mother Teresa. She led a truly impressive life in our universe. Our universe is clearly worthy, for otherwise God would not have created it. But surely Mother Teresa could have led a different yet no less impressive life in another worthy universe. We can easily imagine a universe only marginally different than ours in which Mother Teresa carries on all those charity endeavors and which is worthy. So there are at least two worthy universes in which Mother Teresa exists. Because of our assumption of trans-world identity, what we meant is that there are at least two worthy universes each of which contains a being exemplifying Mother Teresa's essence, and these two universes are located in different worlds since Kraay does not allow for trans-universe identity within the same world. Now, based on Kraay's definition of TM, both these universes should be components of TM since they are both worthy. Therefore, in TM, there are two universes sharing the same human being. But Kraay holds the view that no two

universes in the same world can share the same physical being. So there is a contradiction. Therefore, I conclude that Kraay's notion of TM is inconsistent with his own position.

Next, assume instead that trans-world identity does not obtain. Based on this assumption, we must not say, for example, that the same human being exists in two different worlds. What we can say legitimately is that Socrates exists in world w_1 while a counterpart of his exists in world w_2. A being and its counterparts are not numerically the same. They are distinct beings, and the reason we associate them as mutual counterparts is, perhaps, because the name "Socrates" is a rigid designator and refers to both of them across worlds. A counterpart can never be an exact copy of the actual version: they dwell in distinct worlds and as a corollary, they must have different properties. However, under Kraay's characterization and our assumption that trans-world identity does not obtain, universes can have exact copies that are components of different worlds. Let u_1 be a universe in world w_1. So u_1 is a causally enclosed spatio-temporal whole. It is logically possible that this enclosed whole—u_1—is grouped with a different set of universes when forming a world. I have assumed that worlds are maximal consistent propositions. For a world that includes multiple universes, each universe is to the world as a clip to a movie. A multiverse world is like a movie that is divisible into multiple clips. We can imagine one of the clips being separated from the others and attached to different clips to form a new movie. Similarly, it is possible for a universe u_1 in world w_1 to form a different world with a different set of universes. Under our default possible worlds interpretation of modality, that means there is one possible world different from w1 that includes universe u_1. Therefore, there is one multiverse world

which comprises a counterpart of u_1 along with a set of neighboring universes different than the ones partnering with u_1 in forming w_1.

Since we have denied that any physical being exists across worlds, we must not say that u_1 exists in that other world, say w_2. What we can say, instead, is that a counterpart of u_1, say u_2, exists in w_2. This counterpart of u_1 is exactly the same as u_1 except that it is grouped with a different set of neighboring universes. Because of this, it is totally safe to say that u_1 and u_2 are exact copies and are numerically distinct. Back to Kraay's TM, it comprises all the worthy universes. Many of these universes could have existed in other worlds; so their counterparts exist in other worlds. Among these counterparts are exact copies. These exact copies, compared with their counterparts in TM, are exactly the same except that they are numerically distinct and belong in different worlds. So these exact copies must also be worthy universes. However, given Kraay's conception, TM must not comprise exact copies because he thinks that comprising a universe and its exact copy in the same world will violate the Identity of Indiscernibles. So TM must not comprise both u_1 and u_2. On the other hand, by definition, TM is supposed to comprise both u_1 and u_2 since they are both worthy universes. So there is a contradiction. Therefore once again, I conclude that Kraay's notion of TM is inconsistent with his own position.

Either trans-world identity obtains or it does not. Either way, I have shown that the notion of TM that Kraay provides is inconsistent and no world can satisfy the conditions that Kraay prescribes for being TM. Therefore, TM does not exist. Therefore, Kraay's argument for OUW fails.

Would it help if Kraay revoked his denial of trans-universe identity within the same world? That move would save his notion of TM from my objection under the assumption of trans-world identity. But if he does admit that objects exist across universes in the same world, then he will be contradicting his own claim that universes are causally closed spatio-temporal wholes. Besides, no one should admit that concrete objects (other than God, if he is indeed concrete) exist across the universes that comprise the same world, as the notion of universe, under that characterization, will become superfluous and serve no good.

In a footnote of his "Theism, Possible Worlds, and the Multiverse," Kraay alludes that Talbott and van Inwagen have independently suggested to him that he cannot reasonably claim that TM comprises all universes worth creating and sustaining.[7] The objection that Talbott and van Inwagen provide somewhat overlaps with the argument I just presented. They suppose that at least some worthy universes share the *same* individual and these universes, on Kraay's account, must not be included in the same world. Therefore, Talbott and van Inwagen claim that TM cannot include all the worthy universes. This line of reasoning is similar to the first part of mine where I assumed trans-world identity. But my argument has also included a consideration of the possibility of there being no trans-world identity. Kraay poses a response to Talbott and van Inwagen's objection in his "Theism and Modal Collapse."[8] There he argues that if theism is true then TM is the only possible world there is, mainly because it is not morally acceptable for God to permit a worse world to be actual when a better alternative

[7] See 363, fn. 34.

[8] *American Philosophical Quarterly*, forthcoming. Comments are based on electronic preprint on Kraay's website.

is available and TM is *the* best world. Accepting this response culminates in modal collapse, or so Kraay argues: one has to admit that there is only one possible world—TM. I find his argument highly controversial and I do not think that to argue this way will enable him to resolve Talbott and van Inwagen's worry or my own objection. So I will insist on my conclusion that Kraay's notion of TM is inconsistent with his own position and his argument for OBW fails.

Leibniz's Argument against NBW and MBW

Leibniz is famous for his claim that this actual world is the best possible world. He believes that God is obligated to create the best, because God voluntarily subscribes to the principle of perfection: 'It is sufficient therefore to have this confidence in God, that he has done everything for the best…'; 'No more am I able to approve of the opinion of certain modern writers who boldly maintain that that which God has made is not perfect in the highest degree, and that he might have done better.'[9] Let's call it the principle of perfection that God always choose the best.

Leibniz has never explicitly argued that the best world exists or that the notion of the best possible world is a consistent one. However, he does directly suggest why NBW and MBW are false:

> [A]s in mathematics, when there is no maximum nor minimum, in short nothing distinguished, every-this is done equally, or when that is not possible, nothing at all is done: so it may be said likewise in respect of perfect wisdom, which is no less orderly than mathematics, that if there were not the best (optimum) among all possible worlds, God would not have produced any.[10]

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[9] *Discourse on Metaphysics*, trans. by George R. Montgomery, NY: Dover Publications, INC., 2005, quoted from Section III and V.

[10] *Theodicy Works of Leibniz*, trans. by G. M. Duncan, New Haven, 1890, 128; here I quoted from David Blumenfeld's "Is the Best Possible World Possible?" *The Philosophical Review* 84, No. 2 (April,

Leibniz reiterated this view in a letter to De Bosses:

> In my opinion, if there were no best possible series, God would have certainly created nothing, since he cannot act without a reason, or prefer the less perfect to the more perfect.[11]

Let's first deal with Leibniz's argument against NBW. Suppose NBW is true. Leibniz contends that God would not have produced any world. This is grounded on his principle of perfection. In the case that there is no best world, no matter which world God chooses to create, there will be a number of better alternatives. Because God always chooses the best, Leibniz concludes that God would not have chosen any world to actualize. But on the other hand, Leibniz holds the view that being is better than nothing. An implication of that view is that God always prefers to create something rather than create nothing. So there is a genuine dilemma for God here: if he chooses to create a world, he will have to choose a world while leaving out better alternatives, which violates the principle of perfection; if he chooses to not create any world, he will violate his own belief that creating any world is better than creating nothing. Blumenfeld calls this "the metaphysical paralysis of the divine motivational system."[12] If Leibniz could show that facing this dilemma forces God to create nothing, then his argument against NBW would succeed. However, he couldn't. First of all, as Blumenfeld points out, God's adherence to the principle of perfection is voluntary. This means that God has *decided* to follow the principle of perfection. So if God creates nothing, God's creating nothing must have arisen from a conscious decision. But it is mistaken to think that God decides to create

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1975), 166.

[11] *Leibniz Selections*, edited by P. Weiner, New York: Charles Scribner's Sons, 1951, 95; here I quoted from Blumenfeld, ibid., 166.

[12] Blumenfeld, ibid., 172.

nothing, because God always prefers something to nothing. So Leibniz' argument against NBW fails.

How about his argument against MBW? Leibniz argues that there must not be many best worlds, because if there were, then God would have created nothing. What is at work here is his principle of sufficient reason: when faced with many best worlds, God lacks a sufficient reason for choosing any one of them rather than the rest. No matter which best world God chooses, the relevant difference between this chosen world and its equally best alternatives is not sufficient for its being chosen. There is a similar problem with this argument as with Leibniz's argument against NBW. Leibniz argues that when God lacks a sufficient reason for choosing among the best worlds, God would have created nothing. But God's commitment to the principle of perfection is voluntary. So his creating nothing, in this situation, must have arisen out of a conscious decision. However, it cannot happen that God decides to create nothing, as God prefers something to nothing. Therefore, Leibniz' argument against MBW also fails. So his arguments both fail.

An Argument against OBW

The following argument against OBW has been inspired, intriguingly, by Kraay's argument for OBW. My argument contains three steps:

(1) If a world is the best world, then it comprises all and only the worthy universes.

(2) No world comprises all and only the worthy universes.

(3) Therefore, no world is the best world.

My objections against Kraay's position have demonstrated the second premise. It should be noted that the conclusion I drew, on the basis of my objections, was that Kraay's notion of TM is inconsistent with his own position. This conclusion is not an insignificant one. Kraay's position does include certain seemingly idiosyncratic claims, which I argue to be inconsistent with his notion of TM. But those seemingly idiosyncratic claims are highly intuitive. For example, Kraay claims that no physical objects exist across universes in the same world. As I mentioned above, he has to claim so because he defines universes as causally disconnected, and it is far from idiosyncratic to claim universes as causally disconnected. Another claim of his is that there are no exact copies of universes in the same world. Kraay views this claim as true because he takes it to be derivable from the Identity of Indiscernibles, and once again, it is far from idiosyncratic to adhere to the Identity of Indiscernibles. So although I concluded above that Kraay's notion of TM is incompatible with his own position, I might well have concluded that Kraay's notion of TM is incompatible with certain highly intuitive claims. In other words, I might well have concluded that no world comprises all and only the worthy universes. This is why my objections are, in effect, a demonstration of premise (2).

As to premise (1), I think its truth should be obvious. Suppose w is the best world. Then w must comprise all the universes that God deems as worthy of creating. Other things being equal, a world that fails to comprise all the worthy universes is not as good as a world that does comprise all the worthy universes. Furthermore, w must comprise only the worthy universes. Compare two worlds w_1 and w_2. While w_1 comprises only worthy universes, w_2 comprises the same set of worthy universes plus an unworthy universe. Which world is better? I think, intuitively, w_1 is better than w_2. A deeper

reason is that a perfect being prefers to create w_1 than w_2, because w_2 contain a universe not worth creating and a perfect being, by nature, refrains from creating an unworthy universe. In summary, the best world must contain all the worthy universes and not one single unworthy universe.

So the truth of both premises is now established. The argument is clearly valid. Therefore, the conclusion is also established: no world is the best world. Granted, my argument employs the notion of universe and presupposes the distinction between worlds and universes. It is not as effective for those not recognizing their distinction. In what's to come, I shall explain why no world is the best even if there is no distinction between worlds and universes.

O'Connor's Argument for MBW

There are very few arguments for the view ("MBW") that there are more than one best world. O'Connor's argument for MBW is a most promising candidate. Like Kraay, O'Connor also adopts a distinction between worlds and universes and he shares with Kraay a very similar notion of universes. O'Connor argues that there are many unsurpassable worlds because there are many worlds with an infinite amount of goodness and such worlds are equally the best. Worlds are composed of single or multiple or even infinitely many universes. The amount of goodness that a universe possesses is to be measured in three dimensions:

> (i) the intensive value of each of its basic objects, determined by the kinds of the objects and the degree to which these objects exemplify their respective kinds;
>
> (ii) the aggregate value of its objects taken collectively,

(iii) the organic value it has in virtue of the relational structure (aesthetic, moral, et al) its objects have.

No created object has infinite intensive value. God is the most perfect being, and only God has infinite intensive value. Similarly, no universe or world can have infinite organic value while as the most perfect being, God alone has infinite organic value. But a universe can have infinite value simply by having an infinite number of objects, because a universe containing infinitely many objects has infinite aggregate value. The value of a universe is "a point in a 3-space": its value is determined by its intensive, aggregate, and organic value. So a universe with infinitely many objects has infinite value. And a world containing such a universe also has infinite value.

There are an infinite number of universes whose values surpass a certain threshold *T*. So there are infinitely many worthy universes. But we should not thereby think that God creates a super-universe that comprises all universes whose values surpass *T*, because it is implausible to think that God "would desire to pursue maximal aggregate value at all." A super-universe that comprises all the worthy universes is neither better nor worse than a super-universe that comprises every second or third or nth worthy universe. Because they all have infinite values, these super-universes are equally top-valued such that none of them is better than any other. The super-universe that God chooses to create at least has the following features: (1) All the universes in it are worthy; (2) There is no upper bound on the aggregate value, or intensive value, or organic value of the universes. Despite these restrictions, God is faced with a wide range of options. And no matter which super-universe he chooses to create, as long as it satisfies these two conditions, it is indeed the case that God could not have created a better world.

O'Connor's theory of creation has certain virtues that are not possessed by Kraay's. First of all, in O'Connor's picture of Creation, God genuinely has options. There are infinitely many super-universes which are equally top-valued, and God is free to choose any one of them. In contrast, Kraay's theory has God face one and only one option: TM—the world that comprises all and only the worthy universes. So in Kraay's picture, there is actually no deliberation. For this reason, O'Connor's theory is more congenial to our task of modeling divine deliberation. Secondly, O'Connor dismisses Kraay's assertion that God is obligated to create all the worthy universes. In "Theism and the Scope of Contingency," O'Connor emphasizes that God is not a being pursuing maximal aggregate value which is partially determined by the number of beings. O'Connor is willing to concur that God only creates a portion of all the worthy universes. Once again, I think his theory is superior to Kraay's in this aspect. Lastly, O'Connor provides a uniquely specific way of measuring the values of universes and worlds, which I think is very helpful for the discussion.

Despite its virtues, I think O'Connor's theory of Creation has certain fundamental defects. These defects are enough to show that his argument for MBW fails.

The first problem in O'Connor's theory is that the top-valued super-universes are not, as he asserts, equally the best. The values of the infinitely good universes do not really "flattens out," contrary to what O'Connor claims. According to him, "The natural object of a perfect Creator's consideration will be any infinitely-membered, partially-ordered super-universe for which there is no finite upper bound on the organic value of its members, all of which exceed threshold T."[13] Suppose we have two hypothetical

[13] O'Connor, ibid., 144.

universes, u_1 and u_2, and they both satisfy these conditions. Also suppose that the objects in these two universes are all of equal intensive value, and their value is all positive. Further suppose that u_1 and u_2 are the same in all aspects except that the number of objects in u_2 is of a strictly higher cardinality than u_1. Under these suppositions, even though both u_1 and u_2 have infinite aggregate values, u_2 is clearly more valuable than u_1 in terms of aggregate value. O'Connor denies that any universe can have infinite organic value. We can devise a similar thought experiment to show that two super-universes may not have identical organic value even though they both comprise infinitely many universes and there is no finite upper bound on the organic values of their universes. Suppose w_1 and w_2 are two infinitely good super-universes. Now further suppose that w_1 and w_2 are such that: (a) each universe of w_2 has positive value; (b) w_2 has at least one universe; (c) for every value v, the set $L(v,w_1) = \{ u : u \text{ is a universe of } w_1 \text{ and } Value(u) >= v \}$ has cardinality less than or equal to the cardinality of the set $L(v, w_2) = \{ u : u \text{ is a universe of } w_2 \text{ and } Value(u) >= v \}$; and (d) and for every value v for which $L(v, w_1)$ is non-empty, $L(v, w_2)$ has strictly greater cardinality than $L(v, w_1)$. Given these suppositions, w_2 is clearly superior to w_1 even though neither of the two has infinite organic value. Therefore, even though, as O'Connor claims, there are infinitely many best worlds, they are not equally good.[14] We can further rank these worlds. As a matter of fact, for any world, whether it has infinite value or not, we can devise an infinite number of better, more valuable worlds. This I will show in an argument below. So ultimately, O'Connor's argument fails to demonstrate that there are many worlds that are

[14] I owe these two arguments to Alexander Pruss.

equally the best: the worlds he claims to be equally the best can be further ranked in terms of their value, and O'Connor fails to preclude the further ranking.

Another problem with O'Connor's argument lies in his assertion that the top-valued super-universes all include universes that contain infinite aggregate value and God is to select one from these top-valued super-universes as the actual world. I have no trouble with the first part of his assertion: there are certainly worlds that possess infinite aggregate value by comprising an infinite number of objects. But clearly what he means here are concrete objects.[15] O'Connor says: "It would seem that a universe could have infinite value…*extensively* simply in virtue of its having infinitely many natural objects, all possessing finite value."[16] If the aggregate value of a universe is measured in terms of both the abstract and concrete entities it contains, then all universes, arguably, will have infinite value because every universe contains an infinite number of abstract entities like properties, relations, essences, causal laws. So I take him to mean by aggregate value the total value calculated only out of all physical entities. So all the top-valued super-universes have infinite aggregate value by having an infinite number of finite-valued physical objects, and the selected world is going to be chosen from these super-universes. But a fundamental error is, how can the actual world contain an infinite number of physical objects? Non-actual worlds may have an infinite number of objects, but not the actual world. There is no infinite in actuality, as William Craig has shown in his cosmological argument.[17] To assert the contrary will lead one to absurdities. So

[15] I count angels as concrete objects.

[16] O'Connor, ibid., 142.

[17] For Craig's argument that an actual infinite cannot exist, check out his "The Existence of God and the Beginning of the Universe," in *Truth: A Journal of Modern Thought* 3 (1991), 85-96, also available on his website.

O'Connor is mistaken in claiming that universes can have infinite aggregate value by having an infinite number of objects.

An Argument for NBW

Here I present an argument for NBW ("no best world"), based on O'Connor's way of measuring the value of universes. The value of a universe is determined by the intensive values of its objects, its aggregate value, and its organic value. A super-universe, i.e. a world that comprises more than one universe, has its value determined by that of its component universes. Now I claim that given this manner of measuring worlds, for any world, whether it contains an infinite number of physical objects or not, we can find at least one better world, or rather, many better worlds. Suppose w is a random world with n number of universes, n being either finite or infinite. Now suppose w_1 is a world also with n universes, and w_1 satisfies such conditions: there is a one-to-one correspondence between the universes in w and w_1; and for each pair of corresponding universes, their organic values are equal and they contain equally many objects, and furthermore, there is a one-to-one correspondence between the objects therein such that the object in w_1 is invariably more valuable than its corresponding object in w. Based on such conditions, w_1 is clearly superior to w. Because I started by assuming w to be a random world and did not place any limit on the number of universes it comprises nor on its component universes, my argument has shown that for any given world, there is a better, more valuable one. Therefore, no world or worlds are better than all other worlds. That is equivalent to claiming that NBW is the true option, rather than OBW or MBW.

NBW and Creation

My objections to Kraay, Leibniz, and O'Connor's arguments, along with my own arguments, are sufficient to show that the best world does not exist. For any given world, there is at least one better world. One may worry that both of my arguments (the one against OBW and the one for NBW) rely on a distinction between worlds and universes while such a distinction might not actually obtain. That is a justified worry, but I think it is no harder to show that the best world does not exist even without using a distinction between worlds and universes.

There are infinitely many worlds, and these worlds can be ranked in terms of value. The value of one world may not be directly comparable with that of some other worlds, and some worlds may have equal amount of goodness. But I think I am warranted to claim that worlds can be ranked into a network: the higher a world is found in the network, the more valuable it is. Every world has a spot in the network. Above the top of the network is God who is the most perfect and most valuable being. God's value is infinite. No world is as valuable as God, but there is no finite upper bound on the value of world either. So for any given world, there are an unlimited number of better worlds which are located higher on the network while closer to God. No world is the best world, because worlds can get infinitely closer to God in terms of value.

Here we may face an issue. Kraay and Leibniz share one common belief: as the all-good being, God is obligated to create the best world. Obviously, for someone like me who adopts NBW ("no best world"), it cannot be the case that God is obligated to create the best world because no matter which world God chooses, there are many better alternatives. Fortunately, I do not believe that God is obligated to create the best. One

quick reason is that to think that God has such a moral obligation will commit one to denying that God has genuine freedom in creation. Instead, this obligation predetermines which choice God is to make. O'Connor tries to reconcile Kraay and Leibniz' belief while, at the same time, denying NBW. However, his attempt fails.

In his "Must God Create the Best?"[18] Robert Adams argues that God is not morally obligated to create the best. He argues that God's decision of creation is partly motivated by the goodness of worlds, but partly also by God's loving grace. Adams argues against the following two theses, because for him they are 'the only two types of reason that could be given for' the claim that a perfect God must create the best world he could:

> (1) A perfect Creator would necessarily wrong someone (violate someone's rights), or be less kind to someone than a perfectly good moral agent must be, if he knowingly created a less excellent world instead of the best that he could.
>
> (2) Even if no one would be wronged or treated unkindly by the creation of an inferior world, the Creator's choice of an inferior world must manifest a defect of character.[19]

In opposition to (1), Adams claims that it is plausible to suppose that God could create a world with these characteristics:

> (A) None of the individual creatures in it would exist in the best of all possible worlds.

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[18] *The Philosophical Review* 81, No. 3 (July, 1972): 317-332.

[19] Adams, ibid., 318.

(B) None of the creatures in it has a life which is so miserable on the whole that it would be better for that creature if it had never existed.

(C) Every individual creature in the world is at least as happy on the whole as it would have been in any other possible world in which it could have existed.[20]

According to (A), this world, say W, is not the best world. But (B) and (C) together seem to guarantee that God, by creating W, would not wrong anyone or be less kind to anyone than a perfectly good moral agent must be.

Against (2), Adams proposes his famous "grace" account. Creating an inferior world does not have to manifest a defect of character; on the contrary, creating a less-than-the-best world manifests a disposition to love independently of the merit of the ones loved.

In agreement with Adams, I do not think that an all-good God is obligated to create the best. When deliberating over his choice, God is also motivated by his divine grace which exactly neglects the amount of goodness in the candidate worlds. This does not necessarily mean that God's choice is blind: that he randomly picks one world out of all the worthy ones. No. God has a reason for his choice, except that it is beyond our perception. But this much is certain: whichever world God chooses to actualize, the creatures in that world will be shrouded by God's love.

[20] Adams, ibid., 320.

CHAPTER EIGHT

Conclusion

Let me briefly take stock. Our task is to model God's deliberation when he is deciding which world to create and which creative act to perform in order to create the chosen world. We have tried four different conditional models. The strict conditional model is unreasonably strong; the material conditional model is ill-suited for guiding deliberation; the subjunctive model is groundless. We have an indicative conditional model under the view that indicative conditionals have no truth value and are only good for expressing subjective confidence in conditional probabilities. This model is essentially the same as the model we built under the conditional decision theory in Chapter Five. But I discovered that these two models have to rely on God's causal power to account for their conditional probabilities. So in the second half of Chapter Five, I turned to the causal decision theory and found a causal model for God's deliberation. With all the candidates canvassed, we end up with essentially one and the same model: a generic causal model which relies on the causal connections between God's creative acts and worlds to account for the conditional probabilities in the model being one. Then in Chapter Six, I argued that there is no best world. No matter what a world is like, there are infinitely many better ones. The world that God chooses to create is not as valuable as many other worlds. Yet in his endless love, God actualizes that world and shrouds its creatures with his love.

It is not surprising to build a causal model for God's deliberation. We humans use a causal model or something like it all the time. Suppose my apartment lease is about

to expire, and after careful research, I have prepared myself with two options about my new lease: option one—I live on campus and pay $600 a month for rent, and option two—I live off campus, paying $500 monthly rent and $150 a month for commute. With money being my only concern (It's not true!), I decide to live on campus. Though I do not use expressions like causing or resulting in, I am implicitly using a causal model. Boiled down to its bone, either option stands for one alternative act, and the relevant cost is the causal result of that particular act. In other words, implicitly I have been thinking that living on campus will cause me to pay $600 a month for rent, while living off campus will cause me to pay $650 in total for monthly rent and commute. The model we have laid down for God is pretty much the same: each DCA will cause the actualization of its associated world, and God's knowledge of that guides his thinking. We can be make the model more specific by inserting conditional probabilities: $P(w_1/a_1) = P(w_2/a_2) = \ldots = 1$. That should not be surprising, either. Also, the causal model seems simple, consistent, and adequate. As to its adequacy, we have nothing to worry about. The ground of the conditional probabilities is God's causal potency, which may well be treated as a fundamental feature of the world.

But we do have something to worry about. Is it really alright to say that God's creative act causes a world to be actualized? All along I have been assuming that worlds, prior to being actualized, are nothing but maximal consistent propositions, and I have also been assuming that actualizing a world is nothing but bringing about the truth of the proposition that that world amounts to. Given these assumptions, to say a creative act causes a world to be actualized is equivalent to saying that a creative act causes that world's proposition to become true. God performs a creative act. Therefore, we can then

say that God's performing a creative act causes a world's proposition to be true. But I am not sure that is appropriate to say. The proposition that constitutes a possible world is maximally comprehensive: it includes every truth in that world. Can we really claim that God causes every truth of a world to be true? I fear that this claim might lead to occasionalism, which is the doctrine that God is the only genuine cause and no creatures are ever genuine causes.[1] Suppose I hit a glass window with a baseball bat, and the window falls apart. Quite naturally, my swinging the bat at the window causes the window to fall apart. Yet, under the causal model, God's creative act has caused the statement "the window just falls apart" to be true. So who is responsible for bringing about the truth of "the window falls apart," me or God? Intuitively, I am responsible; yet the model says God is also responsible. We have three choices: (1) God and I are both responsible; (2) I am and God isn't; (3) God is and I am not. Choice (3) implies occasionalism, since this example can be easily generalized. Choice (2) goes against the causal model. Choice (1) affirms that every caused outcome in the actual world has at least double causes.

I view myself as facing a seriously unpleasant trilemma, and each horn of the trilemma is hard to accept. Now taking a step back, we can see that the reason we are facing this trilemma is because we wish to preserve the generic causal model and its variants. The reason we wish to preserve those models is because they are the only models that satisfy our criteria. Denying those models will leave us with no suitable models for God's deliberation. The other factor that has helped corner us into the trilemma is our assumption that worlds are maximal consistent propositions and the

[1] This is the full-blown version, and not all occasionalists accept it. Check out Sukjae Lee's "Occasionalism," *Stanford Encyclopedia of Philosophy*, E. Zalta ed., URL = <http://plato.stanford.edu/entries/occasionalism/>.

actualization of worlds is nothing but the propositions becoming true. Therefore, it seems that the only way out of the trilemma is to abandon that assumption. Once we drop the assumption that worlds are propositions, we will no longer regard "w is actual" as synonymous as "w is true," and hence, the actualization of worlds is no longer equivalent to the process of certain maximal propositions becoming true. As a result, to say that God causes a world to actualize no longer implies that God causes every truth proposition in a world to become true. Thus we will not fall into that same trilemma again.

But if worlds are not propositions, then what are they? David Lewis's realism affords an answer to that question. Worlds, in fact all the worlds, are giant, causally enclosed concrete entities. No world is singled out as the actual world, as all the worlds are equally real. So once we introduce the Lewis's realism, there is no deliberation. God need not choose one world to be the actual world, because God will create all of them. Under that circumstance, when we refer to the actual world, we will be simply referring to the world we dwell in, while the intelligent denizens of other worlds can equally legitimately refer to their own worlds as the actual worlds.

Is that picture of creation going to be consistent? Will that once again drag us into an embarrassing situation like the trilemma we just mentioned? How do we make sense of Lewisian realism? Those could be the topics of another lengthy project.

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