COSMOLOGICAL ARGUMENTS

Suppose that arguments are identified with—or, at any rate, characterized by—sets of sentences. If a set of sentences C is a cosmological argument, then there is a $c \in C$ that is identified as the conclusion of the argument; and the remaining $c' \in C$, $c' \neq c$, are the premises of the argument. (For later purposes, let $\Delta = \{c' \in C: c' \neq c\}$.)

There are various ways in which the conclusion of a cosmological argument might be— or might be intended to be—related to the premises of that argument.

For instance, it might be—or it might be intended to be—that it is necessarily that case that, if Δ then c. Or it might be—or it might be intended to be—that it is obvious *a priori* that, if Δ then c. Or it might be—or it might be intended to be—that it is uncontroversially a truth of logic that, if Δ then c. And so on. Speaking roughly, in these kinds of cases, we might say that the argument is a *deductive* cosmological argument.

Alternatively, it might be—or it might be intended to be—that it is highly probable that, if Δ then c. Or it might be—or be intended to be—that the best explanation of why Δ—or of why Δ', for some $\Delta' \subseteq \Delta$—is that c. And so on. Speaking roughly, in these kinds of cases, we might say that the argument is an *evidential* cosmological argument.

Of course, the above considerations—concerning kinds of relationships between premises and conclusions—are not unique to cosmological arguments. What distinguishes cosmological arguments from other arguments is the nature of c (the conclusion of a given cosmological argument), and the nature of Δ (the set of premises of that given cosmological argument).

In principle, it could be that philosophers offered cosmological arguments for specifically Christian doctrine, e.g. the claim that there is an immaterial, omnipotent, omniscient, wholly good creator (*ex nihilo*) and sustainer of all things who is three persons in one substance, with one of these three persons being numerically identical to a human being who died to atone for human sins; who exercises providential control over free human beings; who will bring about the bodily resurrection of all to eternal life; who allows some lives to lead to eternal bliss and other lives to lead to eternal torment; and who is the ultimate author of authoritative (and perhaps inerrant) scripture, viz. the Christian *Bible*.

In practice, however, what Christian philosophers typically do is to offer cosmological arguments for the conclusion that some proper part of the role that they take to be occupied by the Christian God is actually occupied. Exactly how these sub-roles are to be characterized is a matter of controversy, but it seems to me to be right to say that they all

arise from particular interpretations of the claim that the Christian God is the sole creator of 'the world' *ex nihilo*.

We can think of Christian philosophers as beginning with the following picture:

$$\text{GOD} \quad \Rightarrow \quad \text{THE WORLD}$$

where both 'THE WORLD' and '$\Rightarrow$' are items in need of further explanation. In typical cosmological arguments, what Christian philosophers then aim to show is that *there is* a * such that

$$* \quad \Rightarrow \quad \text{THE WORLD}$$

where 'THE WORLD' and '$\Rightarrow$' are given that particular further explanation.

Given that this is an accurate characterization of the way in which typical cosmological arguments proceed, it is clear that there are several different points at which the *conclusions* of arguments of this kind might be attacked. In particular, on the one hand, it is possible for opponents to claim that, while there is a * that occupies the role in question, that * is not the Christian God. And, on the other hand, it is possible for opponents to claim that there is no occupant of the role in question. Of course, it is also

possible for opponents to adopt a mixed strategy, i.e. to claim that, on some interpretations of '⇒' and 'THE WORLD', there is no occupant of the role while, on other interpretations of '⇒' and 'THE WORLD', there is an occupant of the role but that occupant is not the Christian God.

Given that we are talking about *arguments* for a conclusion of the form 'there is a * such that * ⇒ THE WORLD', there are numerous ways in which these arguments are susceptible to criticism. In some cases, the relationship that is alleged to hold between the premises and the conclusion will be contested. In some cases, the premises will be claimed to be inadequate: false, or rationally rejectable, or evidently controversial, or the like. In some cases, both of these criticisms will be made together. (Some philosophers may think that there is another class of criticisms that I have overlooked: criticisms that hold that certain arguments are circular, or question-begging, or the like. I take it that these kinds of criticisms may be subsumed under criticisms of the premises: given that a claim is plainly controversial, any circular or question-begging argument with that claim as conclusion will also have premises that are plainly controversial, and hence unsuited to the persuasive task that I take to be the principle aim of cosmological arguments.[1])

One way to approach the task of criticizing cosmological arguments is to examine them one by one, scrutinizing the premises and inferential steps in each argument. If one adopts this approach, one will find that there are many defective cosmological arguments

out there. Moreover, in my opinion, one will also find that, to date, there is no *persuasive* cosmological argument that has been produced.[2] (That is, there is no cosmological argument which is such that it ought to persuade reasonable people like me who are not already persuaded of the conclusion that there is a * such that * $\Rightarrow$ THE WORLD, that this claim is indeed true, on some appropriate interpretation of '$\Rightarrow$' and 'THE WORLD'.) But, even if I am right in claiming that no persuasive cosmological arguments have yet been produced, it is clear that the truth of this claim does not in any way foreclose on the possibility that there is a persuasive cosmological argument out there, awaiting formulation. In particular, it seems, those of us who deny that there is a * such that * $\Rightarrow$ THE WORLD—on any suitable interpretation of '$\Rightarrow$' and 'THE WORLD'—are required to have some justification for our contention that there is no such *.

As I have argued elsewhere[3], I do not suppose that it is incumbent upon opponents of cosmological arguments to come up with arguments that ought to persuade Christian philosophers that there is no God of the kind in which they believe. Indeed, I see no reason to suppose that such arguments will ever be within the reach of non-Christians. However, it should be possible for reasonable non-Christians to explain to reasonable Christians how things look from their point of view, in such a way that reasonable Christians can see how it is possible for reasonable people to see things that way, even though, of course, they suppose that those who see things that way hold false beliefs in consequence of seeing things that way. (And *vice versa*: it should be possible for

reasonable Christians to explain to reasonable non-Christians how things look from their point of view, in such a way that reasonable non-Christians can see how it is possible for reasonable people to see things that way, even though, of course, they suppose that those who see things that way hold false beliefs in consequence of seeing things that way. But that's not my present topic.)

So, what I propose to do in this paper, is to set out my reasons for thinking that there is no * such that that * $\Rightarrow$ THE WORLD, on any interpretation of '$\Rightarrow$' and 'THE WORLD' that would set this claim at odds with anti-supernaturalism. As just indicated, my aim is not to convince Christians to embrace anti-supernaturalism. Rather, my aim is to convince Christians that it is *highly unlikely* that there is a convincing cosmological argument that ought to persuade reasonable anti-supernaturalists like me to give up their anti-supernaturalism. (Remember: I'm taking for granted that cosmological arguments that have been presented so far are representative of the cosmological arguments that there are; and I'm also taking for granted that all cosmological arguments that have been produced so far have been shown to be unpersuasive.)

I shall divide the argumentative strategies that I consider into three classes, which I shall call TOTALITY, CHAIN, and FIRST. I shall try to say more about the nature of these classes later. For now, a rough initial characterization will suffice.

First, arguments that belong to TOTALITY aim to show that there is a certain totality—the conjunction of all contingently obtaining states of affairs, the aggregate of all contingently existing objects, the aggregate of all contingently occurring events, or the like—to which God stands in an appropriate relation, as cause, or sufficient reason, or explanation, or the like. Of course, in the notation introduced above, the totality in question is THE WORLD.

Second, arguments that belong to CHAIN aim to show that, if one starts with uncontroversial instances of pairs that stand in appropriate relations—of cause and effect, or explainer and that which is explained, or sufficient reason and that which is provided with sufficient reason, or the like—and then traces back the ancestry of pairs that stand in that relation, one will eventually come to a pair in which God is—or is crucially implicated in—the first member of the pair, i.e. the cause, or the explainer, or the sufficient reason, or the like, of the second member of the pair. (Moreover, of course, these arguments will also aim to show—or will take for granted—that there is no pair in which God is—or is crucially implicated in—the second member of that pair; i.e., there is nothing that is a cause, or an explainer, or a sufficient reason, for God, or God's existence, or God's intentions, or God's reasons, or the like.)

Third, arguments that belong to FIRST aim to show that, if one considers the temporal organization of THE WORLD, then one finds that there is an initial PART (or STAGE,

or SEGMENT) of the WORLD that requires a cause, or an explanation, or a sufficient reason, or the like.

The class of paradigmatic instances of TOTALITY includes the cosmological arguments recently propounded by Robert Koons[4], and by Richard Gale and Alexander Pruss[5]; the class of paradigmatic instances of CHAIN includes at least the first three of Aquinas' five ways; the class of paradigmatic instances of FIRST includes numerous versions of the *Kalām* cosmological arguments[6].

There are some arguments that have been called 'cosmological arguments' that do not fit neatly into this system of classification. However, it seems to me that these arguments are much less worthy of consideration than the familiar, standard arguments that do clearly fit neatly into this scheme. Consequently, I shall have nothing more to say about these other so-called 'cosmological arguments' here. (One possible example, I think, is the family of cosmological arguments that have been defended by Barry Miller in a steady stream of publications over the past thirty years or so.[7])

1. TOTALITY

It is uncontroversial that it is part of orthodox Christian doctrine to claim that God is the maker of heaven and earth. The intuition that guides the construction of arguments that

belong to TOTALITY is that it is possible to show that it *must* be the case that—or that it is *highly probable* that it is the case that, or that it is *most reasonable to believe* that—there is a maker of heaven and earth. (There is a * such that * MAKES HEAVEN AND EARTH.)

In order to construct a particular argument that belongs to TOTALITY, we need to decide what we mean by HEAVEN AND EARTH. There are at least four potential candidates here.

First, we might mean (roughly) the mereological aggregate of particular individuals, or objects, or things. (An alternative possibility is that one might mean the set, or class, of particular individuals, objects, or things. But I do not think that there are any advantages to be gained by framing cosmological arguments in terms of set theory rather than in terms of mereology.) This formulation is rough because there are some particular individuals—most notably, God—that should not be thought to be part of HEAVEN AND EARTH (at least for the purposes of the present exercise). However, it does not seem particularly problematic to repair the formulation so as to overcome this difficulty.

Second, we might mean (roughly) the maximal actual state of affairs, i.e. the global way that things are. This formulation is rough because we need to 'subtract' the way that God is from the global way that things are in order to arrive at a characterization of the way

that heaven and earth are. Moreover—as we shall soon see—it is no easy matter to see how to repair the initial formulation in a way that effects the needed 'subtraction'.

Third, we might mean (roughly) everything that happens, i.e. the sum total of history, or the maximal actual event. Again, this formulation is rough because we need to 'subtract' God-events from the global total of events in order to arrive at a characterization of the total heaven-and-earth event; and, again, it is no easy matter to see how to repair the initial formulation in a way that effects the needed 'subtraction'.

Fourth, we might mean (roughly) everything that is true, i.e. the maximal actual truth, or the maximal actual fact. Once again, this formulation is rough because we need to 'subtract' God-facts from the maximal actual fact in order to arrive at a characterization of the total heaven-and-earth fact. But the formulation is also rough because we need to 'subtract' necessary facts as well. (Perhaps there is a similar need to 'subtract' necessary states of affairs in the previous case as well. Whether there is such a need depends upon the theory of states of affairs that one adopts.) There are even more formidable complexities here than there are in the case of the maximal actual state of affairs and the maximal actual event.

In order to construct a particular argument that belongs to TOTALITY, we also need to decide on a suitable interpretation of '$\Rightarrow$' in our conclusion 'there is a * such that * $\Rightarrow$

THE WORLD'. There are several potential candidates here. For example, we might think that HEAVEN AND EARTH requires a cause; or we might think that HEAVEN AND EARTH requires a sufficient reason; or we might think that HEAVEN AND EARTH requires an explanation; and so forth. (Strictly, the formulations here are required to vary depending upon which interpretation of HEAVEN AND EARTH is adopted. So, for example, we might think that the *existence* of a particular mereological aggregate requires explanation; or that the *coming into existence* of that particular mereological aggregate requires a cause, or an explanation, or a sufficient reason. Or we might think that the *obtaining* of a particular near-maximal actual state of affairs requires explanation; or that the coming to obtain of that particular near maximal actual state of affairs requires a cause, or an explanation, or a sufficient reason. Or we might think that the *occurring* of a particular near-maximal event requires an explanation; or that the *coming to occur* of that particular near-maximal event requires a cause, or an explanation, or a sufficient reason. Or we might think that the *obtaining* of a particular near-maximal fact requires explanation; or that the *coming to obtain* of a particular near-maximal fact requires an explanation or a sufficient reason, or the like. Perhaps we shan't need to fuss too much about these grammatical distinctions in what follows.)

1.1 Near-Maximal Mereological Aggregate

Let U be the maximal mereological aggregate that is HEAVEN AND EARTH (on the mereological interpretation). Then, according to Christian doctrine, there is an entity * such that * $\Rightarrow$ U, on one of the above described interpretations of '$\Rightarrow$'; but it is not the case that there is an entity $ such that $ $\Rightarrow$ *+U, where, of course, *+U is the mereological fusion of * and U. So, if there is to be a successful cosmological argument constructed in these terms, then we need a compelling reason for thinking that there is a * such that *$\Rightarrow$U, even though there is no $ such that $ $\Rightarrow$ *+U. What could this compelling reason be?

The first point to note is that, on each view—i.e. the Christian view according to which there is a * such that * $\Rightarrow$ U, and the anti-supernaturalist view according to which there is no such *—there is a mereological aggregate A for which it is true that there is no # such that #$\Rightarrow$A. So it isn't true that the Christian view should be favoured because it avoids the existence of mereological aggregates A for which there is no # such that #$\Rightarrow$A.

The second point to note is that there is no *evident*, *neutral* reason for supposing that one of U and *+U is a better candidate for being the maximal mereological aggregate A for which there is no # such that #$\Rightarrow$A. Of course, that's not to say that there aren't *putative* reasons that might be suggested. For instance, it might be said that, while U is an entity that only exists contingently, * is an entity that exists necessarily (and, of course,

whatever is necessary has, and requires, *no* explanation, since there is no alternative to the necessary that *could* be set aside by adverting to considerations of some kind). But the difficulty with this suggestion is that, even if we suppose that * exists necessarily, we need to examine our $\Rightarrow$ in order to decide whether there is a genuine advantage here. There are two doxastic possibilities. On the one hand, it might be necessary that * $\Rightarrow$ U. But, in that case, since * exists necessarily, it will surely follow that U exists necessarily (contradicting the assumption that U exists only contingently, which was the reason advanced for supposing that there is genuine advantage in postulating *). On the other hand, it might be contingent that * $\Rightarrow$ U. But, in that case, what is the *clear* advantage in postulating the existence of a (necessarily existent) * such that * $\Rightarrow$ U, given that there remains unexplained contingency in the relationship between * and U? Why not settle instead for unexplained contingency in the existence of U? (There is more to say here; I shall return to these considerations below.)

1.2 **Near-Maximal Actual Event**

Suppose that N is the near-maximal actual event that is required by the interpretation in terms of events. Then, according to Christian doctrine, there is a * such that * $\Rightarrow$ N, for some suitable interpretation of ' $\Rightarrow$ '; but there is no $ such that $ $\Rightarrow$ (*'s $\Rightarrow$–ing N), where, of course, *'s $\Rightarrow$-ing N is a further *event*.

This is trouble. Recall that the aim of the cosmological arguer is (roughly) to show that there *must* be a * such that *⇒N. But, if there must be a * such that *⇒N, how can we avoid the conclusion that there must be a $ such that $ ⇒ (*'s ⇒–ing N)?

We might try arguing that *'s ⇒–ing N is necessary; but, as we have already seen, that avenue of argument leads to a dead end. We might try arguing that *'s ⇒–ing N requires no $ such that $ ⇒ (*'s ⇒–ing N) on the grounds that *'s ⇒–ing N is *self-explanatory*, or the like. But that route too is closed: there is nothing that is self-explanatory in the relevant sense. 'A because A' is always an explanatory solecism; ordinary talk of 'self-explanation' is never properly intended to be interpreted in this flat-footed way. (When, for example, I say that the instructions are 'self-explanatory', what I mean is that you won't need to refer to anything other then the instructions in order to figure out what to do. But I take for granted a whole range of competencies which it is perfectly possible that cognitive agents might lack; and I can happily acknowledge that agents who lacked those competencies *would* need to refer to more than the instructions in order to figure out what to do.)

Perhaps one might try arguing that * marks the appropriate initial point for ⇒ because it is the intentions and reasons of * that are the engine of ⇒, and intentions and reasons are

not the kinds of things for which there can be an $\Rightarrow$. This claim seems to me to be evidently false. It is true that, in the ordinary business of giving explanations, we often treat intentions and reasons as suitable 'stopping points' for explanation. ('Why did x do A? Because x had beliefs {B} and desires {D}.') But this is not because it is the case that, or because we think it is the case that, intentions and reasons are not the kinds of things for which there can be an $\Rightarrow$. Rather, it's because we know that we typically lack both theory and information needed in order to identify appropriate $\Rightarrow$'s. Compare with the way that we typically think about coin tosses. In everyday life, we treat coin tosses as effectively indeterministic events; but that's not because we think that coin tosses really are indeterministic events (except, perhaps, insofar as coin tosses are subject to quantum indeterminacy—but that's an irrelevant side issue). We have lots of evidence—concerning, for example, the distribution of intentions and reasons across human groups throughout history—that supports the claim that intentions and reasons are the kinds of things for which there are $\Rightarrow$'s. At the very least, I think that it is clear that there is no evident, neutral reason for thinking that * marks the appropriate initial point for $\Rightarrow$ because it is the intentions and reasons of * that are the engine of $\Rightarrow$: the required claim about intentions and reasons is *at least* as controversial as the claim that there is a * such that *$\Rightarrow$N.

1.3 **Near-Maximal Actual State of Affairs**

Suppose that N is the near-maximal actual state of affairs that is required by the interpretation in terms of states of affairs. Then, according to Christian doctrine, there is a * such that *⇒N, for some suitable interpretation of '⇒'; but there is no $ such that $ ⇒ (* ⇒'s N), where, of course, * ⇒'s N is a further *state of affairs*.

As in the case of the near maximal actual event, we now have serious trouble. The cosmological arguer wishes to insist that a certain near-maximal actual state of affairs *requires* an ⇒, while an even more nearly maximal actual state of affairs *need not* have an ⇒, even though there is no evident, neutral reason for this differential treatment. (The more nearly maximal actual state of affairs is the 'conjunction' of N with * ⇒'s N. I assume here that *this* 'conjunction' lacks an ⇒ if one of its 'conjuncts' lacks an ⇒.)

As in the case of the near maximal actual event, we can perhaps think of the disagreement here in 'economic' terms. On the one hand, the anti-supernaturalist supposes that N is the maximal actual state of affairs, and that it has no ⇒. On the other hand, the Christian supposes that N is a near-maximal state of affairs, for which there is a * such that * ⇒'s N. On the Christian view, there is no ⇒ for the * such that * ⇒'s N (or, at any rate, there is no ⇒ for the intentions and reasons that are possessed by this *). From the anti-supernaturalist standpoint, the Christian proposal is not progress: there is a cost in terms

of ontological commitment to *, but there is no advance in reduction of commitment to states of affairs that lack $\Rightarrow$'s (since those events that lacked $\Rightarrow$'s on the initial scheme are now matched with reasons and intentions that lack $\Rightarrow$'s on the Christian scheme). However, from the Christian standpoint—as least as envisaged by proponents of the cosmological argument now under consideration—the Christian proposal is progress, since the ontological payment does buy a reduction of commitment to states of affairs that lack $\Rightarrow$'s: for, from this standpoint, reasons and intentions are not the kinds of things that require, or perhaps even can have, $\Rightarrow$'s.

1.4 **Near-Maximal Actual Fact**

Suppose that N is the near-maximal actual fact/truth that is required by the interpretation in terms of facts/truths. Then, according to Christian doctrine, there is a * such that *$\Rightarrow$N, for some suitable interpretation of '$\Rightarrow$', but there is no $ such that $ $\Rightarrow$ that (*$\Rightarrow$N), where, of course, that (*$\Rightarrow$N) is a further fact/truth.

It is clear enough that the same kinds of difficulties that arose in the case of the interpretation in terms of events and the interpretation in terms of states of affairs also arise in this case. However, as I noted earlier, there is another kind of difficulty that also arises in this case, involving the treatment of necessary facts/truths.

Given the kinds of interpretations that are appropriate for '⇒' when we are talking about truths, it is a live question whether '⇒' must at least involve entailment. Certainly, if '⇒' is interpreted in terms of 'sufficient reason', then it seems quite clear that '⇒' must at least involve entailment. But even if '⇒' is interpreted merely in terms of 'explanation', it is plausible that the explanation that is required will involve entailment. (Of course, it is not appropriate to interpret '⇒' in terms of 'cause', when we are talking about truths.)

If '⇒' does involve entailment, and if entailment is given a classical interpretation, then it cannot be that * is taken to obtain necessarily while N only obtains contingently. Either N obtains necessarily—in which case it can be plausibly maintained that there is no explanation of the obtaining of N to be provided—or * obtains contingently, in which case it is hard to see what kind of theoretical advantage could be obtained by the postulation of *. Perhaps it might be suggested that entailment should be given a non-classical interpretation; but, at the very least, that suggestion surely requires weighty independent support.

1.5 Last Thoughts on TOTALITY

In the preceding discussion, I have focused on the difficulty that is raised for TOTALITY cosmological arguments by the creative reasons and intentions of the postulated creator.

The supposed advantage of the postulation of a creator—viz. the provision of an $\Rightarrow$ for the TOTALITY in question—is arguably brought into question by the standing of these reasons and intentions with respect to the relevant $\Rightarrow$. Given that the claim that these reasons and intentions either do not or need not have an $\Rightarrow$ is no less controversial than the claim that there is a * such that * $\Rightarrow$ THE WORLD, we find here compelling reason for thinking that TOTALITY cosmological arguments are unlikely to achieve their intended persuasive aim.

Of course, it should not be thought that there are no *other* difficulties that could be raised for TOTALITY cosmological arguments. In particular, there are interesting questions to be raised about indeterminism, and about libertarian free actions. Note that these further concerns press directly on those versions of TOTALITY that advert to events, or states of affairs, or facts or truths; if they press on versions of TOTALITY that advert to objects, or individuals, or things, they do so only indirectly.

If there is indeterminism in some part of THE WORLD, and if there is no * such that * $\Rightarrow$ the indeterministic part of THE WORLD, then it surely follows that there is no * such that * $\Rightarrow$ THE WORLD. Since there is strong reason to suppose that there is indeterminism in our world, there is strong reason to suppose that there is no * such that * $\Rightarrow$ THE WORLD. Of course, it is at least *doxastically* possible that, the empirical

successes of quantum mechanics notwithstanding, our world is deterministic—but it is *very* hard to believe that there is *evident, neutral* reason to believe that the world is deterministic.

Similarly, if there are *libertarian* free actions in some part of THE WORLD, then—at least in the eyes of many philosophers—it follows that there is no * such that * $\Rightarrow$ that part of THE WORLD. Whence it follows that, if there are libertarian free actions, then there is no * such that * $\Rightarrow$ THE WORLD. Of course, it doesn't follow from these considerations that there is no * such that * $\Rightarrow$ THE WORLD; rather, what follows is that, if there is a * such that * $\Rightarrow$ THE WORLD, then there are no libertarian free actions. This result seems to me to be bad news for proponents of TOTALITY cosmological arguments. On the one hand, those proponents of these arguments who are strongly wedded to the idea that we have libertarian freedom have to fold their cards. On the other hand, those proponents of these arguments who are prepared to give up the idea that we have libertarian freedom have various battles to fight without falling back on that familiar trump: no free-will defense against logical arguments from moral evil; no free-will theodicy to match against evidential arguments from evil; and so forth. (It is, I think, not very controversial to claim that it is much harder to find arguments for the claim that, if there is a * such that * $\Rightarrow$ THE WORLD, then that * such that * $\Rightarrow$ THE WORLD is a (morally) perfect being, *if* one adopts a compatibilist conception of freedom. So,

plausibly, the *ultimate* aim of the Christian TOTALITY arguer will be hindered by the mooted concession in connection with libertarian freedom.)

Of course, some philosophers have denied the claim that if there are *libertarian* free actions in some part of THE WORLD, then it follows that there is no * such that * $\Rightarrow$ that part of THE WORLD. In particular, some proponents of agent causation insist—contrary to my earlier assertion—that there *can* be full explanation without (classical) entailment. (See, for example, O'Connor (2003).) On this view, there can be a full explanation of why an agent made a particular choice C rather than any other choice C' that it was open to that agent to make in the circumstances of the choice, even though the choice C was not determined by the global state of the world at any point prior to the time of the choice. Against this, I'm inclined to say that what we have here is *partial* explanation— albeit all of the explanation that there is to be had—of the choice in question. And, certainly, that is what everyone is inclined to say in all other non-deterministic cases. (Suppose that the decay of an atom is non-deterministic. Then, while there is a partial explanation of the decay of the atom—the atom had a certain objective chance of decaying when it did—it is also true that there is no explanation of why the atom decayed at the particular time that it did, *rather than* at any other time at which it might have decayed.[8]) However, for present purposes, I don't need to insist that one could not reasonably accept the agent causation account. Rather, it suffices to point out that this agent causation account is no less controversial than the claim that there is a * such that *

$\Rightarrow$ THE WORLD. At the very least, it is not a secure foundation upon which to rest a convincing argument for the existence of God.[9]

2. CHAIN

The intuition that guides the construction of arguments that belong to CHAIN is *perhaps* slightly less obviously central to orthodox Christian doctrine than is the intuition that guides the construction of arguments that belong to TOTALITY.

Arguments that belong to CHAIN start with an observation about elements of THE WORLD—e.g. that there are elements a and b in THE WORLD such that a $\Rightarrow$ b. The central intuition is that, where there are such elements a and b, they will belong to an $\Rightarrow$-CHAIN for which there is a * such that * is the first element of that $\Rightarrow$-CHAIN. More exactly, the intuitive picture is that there is a * such that, for any elements a and b such that a $\Rightarrow$ b, there is an $\Rightarrow$-CHAIN in which * is the first element, and which has a and b as members.

As in the case of TOTALITY, there are interpretative choices that need to be made in order to arrive at a particular member of CHAIN. There is a choice to be made about the elements of THE WORLD: are we talking about objects, or events, or states of affairs, or

facts, or what? And there is a choice to be made about $\Rightarrow$: are we talking about causation, or explanation, or sufficient reason, or something else?

There are difficulties in getting arguments that belong to CHAIN to turn out to be valid. If we allow ourselves assumptions about the absence (or impossibility) of circles and regresses, we can get the result that any given $\Rightarrow$-CHAIN has a first element, i.e. an element that is the first member of at least one $\Rightarrow$-relation, but is not itself the second element in any $\Rightarrow$-relations. (Even if we don't allow ourselves assumptions about the absence (or impossibility) of regresses, we can still get the result that any given element has an *ancestral* first element, provided that we insist that regressive $\Rightarrow$-CHAINS must themselves be elements in $\Rightarrow$-relations, and provided that we can help ourselves to the axiom of choice.[10]) But the aim of the argument is not merely to establish that, for any elements a and b such that a$\Rightarrow$b, there is a * such that * is the first element in an $\Rightarrow$-CHAIN that includes a$\Rightarrow$b; rather, the aim of the argument is to show that there is a * such that, for any elements a and b such that a$\Rightarrow$b, * is the first element in an $\Rightarrow$-CHAIN that includes a$\Rightarrow$b.

Among the evident difficulties that arise for arguments that belong to CHAIN, there are the difficulties that are raised by intentional action and indeterminism.

If there is indeterminism in THE WORLD, then different ⇒-CHAINS will terminate in different first members that lack ⇒'s. If there is indeterminism in THE WORLD, it may be that not all ⇒-CHAINS that commence with contemporary elements begin with members that lack ⇒'s; but, if we help ourselves to standard Big Bang Cosmology, in which the initial stages of our universe are confined entirely to the quantum realm, then it is not clear that it is even ruled out that *all* ⇒-CHAINS that commence with contemporary elements begin with members that lack ⇒'s, where these members are simply elements of the quantum domain. (More about these kinds of considerations in a moment.)

Unless we are eliminativists about either folk psychology or causation, we shall suppose that there are ⇒-CHAINS that contain contemporary elements, and that have the like of the intentions and reasons of human agents 'upstream' from those contemporary elements. If we suppose that intentions and reasons do not have ⇒'s, then we cannot get the conclusion that there is a * such that, for any elements a and b such that a⇒b, * is the first element in an ⇒-CHAIN that includes a⇒b. On the other hand, if we suppose that intentions and reasons do have ⇒'s, at least in the case of human agents, then we surely do not have *evident, neutral* reason for supposing that the intentions and reasons of God neither have nor require ⇒'s. Since it is plausible that there are contemporary elements that lie on ⇒-CHAINS that do not contain the like of the intentions and reasons of human

agents 'upstream' from those contemporary elements, it should not be thought that the objection being presented here makes an insurmountable objection to arguments belonging to CHAIN. For the cosmological arguer could restrict the argument to those $\Rightarrow$-CHAINS that do not contain the like of the intentions and reasons of human agents.

Suppose, then, that we restrict our attention to those $\Rightarrow$-CHAINS that do not contain the like of the intentions and reasons of human agents as elements, and suppose that there is no indeterminism in THE WORLD that has any consequences for these $\Rightarrow$-CHAINS. At least very roughly, in the context of cosmological theorizing, these suppositions amount to supposing that there is a standard *general relativistic* Big Bang model that accurately represents the nature of THE WORLD. If we suppose that the initial singularity is a *point* that belongs to the spatiotemporal manifold, then we shall suppose that all of the relevant $\Rightarrow$-CHAINS lead back to that singularity. On the other hand, it we suppose that the initial singularity is a *surface* that belongs to the spatiotemporal manifold, then we shall suppose that the relevant $\Rightarrow$-CHAINS lead back to different initial elements. So, it seems, if we make *enough* controversial assumptions, even the anti-supernaturalist can get out the conclusion that there is a * such that, for any elements a and b such that a$\Rightarrow$b, * is the first element in an $\Rightarrow$-CHAIN that includes a$\Rightarrow$b. But, even with all of these controversial assumptions, we don't get to the conclusion that the CHAIN cosmological arguer seeks;

for, of course, even if there were such an initial cosmological singularity, *it* would not be the Christian God.

A little reflection suggests that the prospects for finding a *persuasive* cosmological argument that belongs to CHAIN are very dim. The anti-supernaturalist supposes that there are none but naturalistic $\Rightarrow$'s. Hence, the anti-supernaturalist supposes that either there are $\Rightarrow$-CHAINS that regress—as they do, for example, in standard general relativistic Big Bang models in which the initial singularity is supposed not to be part of the spatiotemporal manifold—or else that $\Rightarrow$-CHAINS have *naturalistic* first elements that lack $\Rightarrow$'s—as they do, for example, in standard Big Bang models in which the initial singularity is supposed to be part of the spatiotemporal manifold, on the further (naturalistic) assumption that there are no $\Rightarrow$'s that involve elements that do not themselves belong to that spatiotemporal manifold.

Of course, none of the above is intended to suggest that supernaturalists—and, in particular, Christians—are irrational, or otherwise evidently cognitively deficient for thinking that there are $\Rightarrow$'s where anti-supernaturalists deny that there are $\Rightarrow$'s. To help fix ideas, let's go back again to the pretence that THE WORLD is accurately characterized by a standard general relativistic Big Bang model in which a global time function can be defined. In this case, we can think of THE WORLD as consisting of a sum of global time slices with $\Rightarrow$'s 'governing' the evolution of these time slices. While

the anti-supernaturalist will insist that these $\Rightarrow$'s all conform to naturalistic scruples, there

have been many Christians who have thought that among these $\Rightarrow$'s are such things as

God's conserving THE WORLD in existence. In criticizing the arguments belonging to

CHAIN, I have not been trying to argue that Christian's cannot reasonably believe that

there are such $\Rightarrow$'s; rather, my target is the much more modest objective of securing

agreement that there are no *evident, neutral* reasons for believing that there are such $\Rightarrow$'s.

If there are no such *evident, neutral* reasons, then, I think, there is no prospect for finding

a persuasive argument that belongs to CHAIN.

There is perhaps one final point worth making in connection with arguments that belong

to CHAIN before we turn our attention to the final class of arguments that I wish to

examine. It is sometimes the case that defenders of arguments that belong to CHAIN

choose to mix their $\Rightarrow$'s. So, for example, when the prospect of indeterminism is raised in

connection with arguments that are initially couched in terms of *efficient* causation, some

cosmological arguers then fall back on the observation that, even if certain kinds of

quantum events lack efficient causes, they nonetheless have *material* causes. While this

might look like progress, it should then be borne in mind that all of the intentions,

reasons, decisions, and so forth that we meet with in our everyday experience have

material causes. Hence, by the lights of the anti-supernaturalist, this move does not

increase the persuasiveness of the CHAIN argument that is being presented: nowhere in

our everyday experience do we meet with intentions, reasons, decisions, and so forth that

do not have material causes. Perhaps we might go so far as to say that it is a 'defeasible rule' that all intentions, reasons, decisions, and the like have material causes; even if we don't go this far, we should, at the very least, note that substance dualism is no less controversial than the claim that the Christian God exists.

It is also perhaps worth thinking a little more about the way in which considerations about the nature of freedom impact on TOTALITY and CHAIN. I argued above that, if there is a * such that * $\Rightarrow$ THE WORLD, on the TOTALITY interpretation, then there is no libertarian freedom; and I argued that, if there is libertarian freedom, then it is not the case that there is a * such that, for any elements a and b such that a$\Rightarrow$b, * is the first element in an $\Rightarrow$-CHAIN that includes a$\Rightarrow$b (or, in other words: if there is a * such that, for any elements a and b such that a$\Rightarrow$b, * is the first element in an $\Rightarrow$-CHAIN that includes a$\Rightarrow$b, then there is no libertarian freedom). However, as I suggested above, it seems to me that there is some 'wiggle room' in the case of CHAIN: the CHAIN cosmological arguer can simply set aside all of the $\Rightarrow$-CHAINS that originate in the libertarian free choices of natural agents, and argue the case in connection with this restricted set of $\Rightarrow$-CHAINS.

Is there a similar strategy that is available to the TOTALITY cosmological arguer? Can we proceed by ignoring those parts of TOTALITY that involve the libertarian free

choices of natural agents, and arguing in terms of what remains? It would seem so. However, if we do proceed in this way, then it seems to me that we shall be taking up an argument that can quite properly be said to belong to FIRST (since the intuitive idea is simply to consider THE WORLD as it was before there were any agents with libertarian freedom, and to make the TOTALITY cosmological argument in connection with that stage of THE WORLD). Perhaps this is not the right way to think about these matters; however, I shall only revisit this assumption if it is shown to have unfortunate consequences.

3. **FIRST**

The intuition that guides the construction of arguments that belong to FIRST is that, *in the beginning*, the Christian God made heaven and earth. More exactly, what these arguments seek to show is that there is a * such that * $\Rightarrow$ INITIAL HEAVEN AND EARTH (where it is a question for interpretation exactly what is meant by 'INITIAL HEAVEN AND EARTH').

I think that the most natural way to interpret the *conclusion* of arguments that belong to FIRST is something like this: There is a time t=0 that marks the beginning of HEAVEN AND EARTH. Moreover, there is a * such that * $\Rightarrow$ HEAVEN AND EARTH at t=0. Given this interpretation, there are two different questions that can be raised. First, is it

true that there is a time t=0 at which HEAVEN AND EARTH begins. Second, given that there is a time t=0 at which HEAVEN AND EARTH begins, is it true that there is a * such that * $\Rightarrow$ HEAVEN AND EARTH at t=0.

If THE WORLD were accurately described by a standard general relativistic Big Bang model, then there is an important sense in which it would not be true that there is a time t=0 at which HEAVEN AND EARTH begins. For, as I noted earlier, in standard general relativistic Big Bang models, the time t=0 is a *boundary* 'time' that is not attached to the spatiotemporal manifold. Consequently, in these models, it is not true that HEAVEN AND EARTH exists at t=0. Rather, what is true is that HEAVEN AND EARTH exists at all times t'>0. Of course, in these models, it is also true that HEAVEN AND EARTH exists at all times; part of what follows from saying that t=0 is a boundary time is that there *is* no time t=0 if these models are true.

Now, of course, we shouldn't suppose that THE WORLD is accurately described by a standard general relativistic Big Bang model: a full model of the early universe needs to incorporate quantum considerations as well. However, we don't yet have an accepted, detailed model of the early universe. So it remains an open question whether our best theory will ultimately tell us that there is a time t=0 at which HEAVEN AND EARTH began. (A further complication here is that, if we are treating standard general relativistic Big Bang models with full ontological seriousness, then—as John Earman has

argued[11]—it is a *live* question whether we should think that trajectories can be extended 'through' the initial singularity. Even if this were not so, surely it would be a live question whether, in *better* theories than those that we currently have, it is possible for there to be trajectories that extend 'through' initial singularities. At the very least, speculations about these kinds of 'possibilities' abound in the recent literature, as in, for example, the Smith/Smolin multiverse theory.)

Suppose, nonetheless, that it *is* the case that there is a time t=0 at which HEAVEN AND EARTH began (and that the domain of contingency coincides with the spatiotemporal manifold S that lies on our side of that initial singular point). Are reasonable anti-supernaturalists then rationally obliged to go on to say, with the proponents of FIRST cosmological arguments, that there is a * such that * $\Rightarrow$ HEAVEN AND EARTH at t=0? I don't think so. Let S_i = HEAVEN AND EARTH at t=0. Then, on the one hand, proponents of arguments from FIRST are Christians who suppose that there is a * such that * $\Rightarrow S_i$ even though there is no $ such that $$\Rightarrow$*. And, on the other hand, anti-supernaturalists suppose that there is no * such that * $\Rightarrow S_i$. Structurally, at least, we are back to the same kind of position that we examined in the case of near-maximal mereological aggregates: both camps suppose that there is something that lacks an $\Rightarrow$, but proponents of arguments in FIRST suppose that there is theoretical advantage to be gained by postulating an additional supernatural agent, so that it is the intentions and reasons of that supernatural agent that lack $\Rightarrow$'s, and so that the intentions and reasons of

that supernatural agent can provide an $\Rightarrow$ for S_i. As I have already argued, it is very hard to believe that there is *evident, neutral* reason for thinking that the postulation of a supernatural agent in this case is theoretical progress. (Perhaps it is worth noting here that the theoretical costs involved may run further than the postulation of the supernatural agent. Does it need a domain to inhabit? Must this domain have some kind of 'time' or 'spacetime' associated with it? If so, how should we suppose that this 'time' or 'spacetime' relates to *our* spacetime? And so forth. But the key critical point can be made without adverting to the nature of these possible further costs.)

It seems to me that it is quite proper for anti-supernaturalists to be undecided on the question whether there is a time t=0 at which HEAVEN AND EARTH began. Current scientific cosmological theorizing has not reached a stable consensus about the very earliest history of our universe; consequently, there is no *evident, neutral* reason for deciding one way or the other on this question. (Moreover, I think that current scientific cosmological theorizing has not reached a stable consensus on the question whether our universe exhausts HEAVEN AND EARTH, so that there is no *evident, neutral* reason for deciding one way or the other on that question either.) However, even if it turns out that there is a time t=0 at which HEAVEN AND EARTH began, it seems pretty clear that there is no *evident, neutral* reason for supposing that there is a * such that * $\Rightarrow$ HEAVEN AND EARTH at t=0. By the lights of anti-supernaturalists, the postulation of a * such

that $* \Rightarrow$ HEAVEN AND EARTH at t=0 is not justified by the theoretical returns that can
be obtained from this postulation.

CONCLUDING REMARKS

It is highly plausible to suppose that a reasonable Christian and a reasonable anti-
supernaturalist will disagree about a great many things. While they will certainly disagree
on the question of the existence of God, it is also highly likely that they will reasonably
disagree on such matters as the nature of free action, the ontology of mind, the
relationships that hold between reasons and causes, the metaphysics of quantum-vacuum
pair production, and so on.

At any rate, we can certainly suppose that there is a set (or class) of propositions $P = \{p_i\}$
that are reasonably believed by the Christian, but that are reasonably not believed by the
anti-supernaturalist; and that there is a set (or class) of propositions $Q = \{q_j\}$ that are
reasonably believed by the anti-supernaturalist, but that are reasonably not believed by
the Christian.

Let G be the proposition that God exists. Then, as I have just claimed, it seems to me that
we can reasonably suppose that the set of propositions $\{G, p_i\}$ is such that it can be
reasonably believed by the Christian; and it seems to me that we can reasonably suppose

that the set of propositions {not-G, q_j} is such that it can be reasonably believed by the anti-supernaturalist. Furthermore, it seems to me that we can reasonably suppose that there are sets of propositions P'$\subseteq$P for which P'$\Rightarrow$G, where A$\Rightarrow$B just in case A entails B, or A provides strong probabilistic support for B, or the like; and it seems to me that we can reasonably suppose that there are sets of propositions Q'$\subseteq$Q for which Q'$\Rightarrow$not-G, under the same interpretation of A$\Rightarrow$B. Finally, it seems to me that we can reasonably suppose that there are sets of propositions {P', Q', not-G} and sets of propositions {P", Q", G}, where P', P"$\subseteq$P and Q', Q"$\subseteq$Q, which are logically inconsistent, or probabilistically inconsistent, or the like.

If this is how things are, then we should not make the mistake of thinking that arguments P', Q' $\Rightarrow$ G and/or P", Q" $\Rightarrow$ not-G are *successful* arguments for the Christian and/or the anti-supernaturalist. However, if I am right, it is not plausible to suppose that there are better cosmological arguments—either for the conclusion that God exists or for the conclusion that God does not exist—than cosmological arguments of the *P', Q' $\Rightarrow$ G* form. Consequently, if I am right, it is not plausible to suppose that there are successful cosmological arguments.

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Endnotes

[1] For further discussion of this point, and for more general discussion of my views about rationality, justification and argumentation, see Oppy (2006b), Chapters One and Eight.

[2] I argue for this claim at length in Oppy (2006b), Chapter One.

[3] See, in particular, Oppy (2006b), Chapter One.

[4] Koons (1997)(2001)

[5] Gale and Pruss (1999)(2003)

[6] See, for example, Craig (1979) and Nowacki (2006).

[7] See, for example, Miller (1992).

[8] While there is more to argue here, it does seem to me that it is worth noting that this just is how we ordinarily talk about indeterminism in physical systems: *if quantum mechanics is true, then there are things that have no explanation*, we say. *I* reckon that there is no relevant different in the case of non-deterministic agent causation.

[9] We might think to run another "economic" argument at this point. Proponents of non-deterministic agent causation claim that their view accords better with certain pre-theoretical intuitions. Opponents of non-deterministic agent causation may disagree about even this; but they will certainly insist that there are theoretical costs involved in the adoption of a *sui generis* category of non-deterministic causation. There seems to be little prospect of a resolution to this stand-off any time soon.

[10] See Meyer (1987) for an extended discussion of this point.

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[11] Earman (1995), cited in Oppy (2006a), Chapter Four.