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From states of affairs to a necessary being

Joshua Rasmussen

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Abstract I develop new paths to the existence of a concrete necessary being. These paths assume a metaphysical framework in which there are abstract states of affairs that can obtain or fail to obtain. One path begins with the following causal principle: necessarily, any contingent concrete object *possibly* has a cause. I mark out steps from that principle to a more complex causal principle and from there to the existence of a concrete necessary being. I offer a couple alternative causal principles and paths, too. The paths marked out rely on relatively modest causal principles and avoid many obstacles that traditional cosmological arguments face.

Keywords States of affairs · Cosmological argument · Necessary being · Causal principle

1 Introduction

Some metaphysical frameworks include abstract objects, such as states of affairs, in order to ground our talk of possibility and necessity (cf. Plantinga 1974; Pollock 1984). By adding certain (strikingly modest) causal principles to such a framework, we may identify paths to an intriguing metaphysical conclusion: that there exists a *concrete* necessary being. My goal is not to defend the starting framework, but to reveal a series of steps from the existence of abstract states of affairs to a concrete necessary being. The argument I will present relies upon causal principles that are more modest (logically weaker) than those employed in *cosmological* arguments for

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a necessary being, and it can survive classic objections raised against such arguments, as I will show.¹

Before getting to the argument, I will describe the argument's metaphysical framework. Two tools I use from contemporary metaphysics are (a) a theory of states of affairs that enables quantification over non-actual situations (e.g., the situation in which Aristotle never studied philosophy) and (b) S5 modal logic. The axiom of S5 important to this paper is this: if it is *possible* that it is *necessary* that *P*, then it follows that it is simply *necessary* that *P*.² In addition, I will make use of *possible worlds*, where a possible world *W* is a state of affairs such that for every possible state of affairs, *W* either entails it or its complement. Although the argument will use abstract *states of affairs*, one may prefer to use propositions, properties, or even sets. States of affairs are used here in part because it is convenient to talk about causal relations between obtaining states of affairs.³

With these tools in hand, I am ready to construct the argument.

2 The States of Affairs Argument for a necessary being

I will begin by introducing a couple definitions:

(Def₁) *x* is necessary =_{def} *x* exists in all possible worlds (*x* exists no matter what possible world obtains).

(Def₂) *x* is contingent =_{def} *x* exists in some but not all possible worlds (*x* is neither necessary nor impossible).

Using these definitions, we can state a rather intuitive causal principle, one which I'll use to motivate a more complex principle later on.

(Causal₁) $\Box(\forall x ((x \text{ is a contingent concrete object}) \rightarrow (\Diamond(x \text{ is caused}))))$.⁴

(Causal₁) is concerned with *concrete objects*, which include things like rocks, jellybeans, Cartesian egos, fundamental particles, and so on.⁵ It states that

¹ The argument I present has no a posteriori premise, unlike traditional cosmological arguments. However, part of the argument is inspired by one tradition of cosmological arguments going back to John Duns Scotus. For representative work on that argument, see O'Connor 1993, pp. 17–32; 1996, pp. 435–454; cf. Loux 1984, pp. 157–166.

² I will also use S4: if it is necessary that *P*, then it is necessary that it is necessary that *P*.

³ For a theory of causation on which obtaining states of affairs have causal explanations, see Mellor (1995). Below, I'll offer a definition of a causal relation between states of affairs in terms of causal relations between *objects* in those states of affairs.

⁴ Compare with Scotus' causal principle: "Anything to whose nature it's repugnant to receive existence from something else, can exist of itself if it's able to exist at all" (Wolter 1987, p. 46). If a necessary concrete object is something that can "exist of itself", then a contemporary version of his principle may go as follows: Any concrete object that can't be caused is a necessary concrete object, which is logically equivalent to (Causal₁).

⁵ One can interpret (Causal₁) as applying to *substances*. Some philosophers (e.g., Peter van Inwagen) think that if objects such as armchairs *were* substances, then every arbitrary mereological sum (fusion) of contingent concrete objects would be, too. So, one's metaphysical framework will govern one's interpretation of the scope of (Causal₁). Later, I will address the question of whether certain gerrymandered or maximal fusions might be exceptions.

necessarily, any and every contingent concrete object possibly has a cause that accounts for its existence.⁶ I do not require that a cause consist of a single entity; many things may work together to be a cause. I also do not require that a cause be *sufficient* for its effect. Perhaps some causes do little more than raise the probability of their effects, such as when smoking is a cause of lung cancer. Later, I will use the notion of a *complete* cause, one that includes causes of the contingent parts of an object. For now, I'll just point out that if every contingent concrete object can have a cause, then plausibly every contingent concrete object can have a complete cause.⁷

(Causal₁) can be supported by reflecting upon familiar concrete objects. Consider, for example, your favorite armchair. Surely the armchair's existence *can* be the result of causal factors, such as a craftsman or factory machine piecing together materials. (Indeed, it certainly *was*.) Or take an *imaginary* armchair, one which *could* exist, but which is a bit larger than any armchair that has existed. If that armchair happened to exist, it seems at least *possible* that it have a cause. The principle seems to apply to very small objects, too: neutrinos, for example, can be produced from proton collisions in a particle accelerator. It's natural to generalize: necessarily, any contingent concrete object can have a cause.

There is a Kripkean worry lurking here. Kripke's doctrine of *origin essentialism* implies that necessarily, if an object has *no* cause, then it *cannot* have a cause (if having no cause is a kind of origin). Suppose one subscribes to this doctrine. Then, if one is unsure whether there might be uncaused contingent concrete objects, one might thereby be unsure whether there might be contingent concrete objects that *cannot* have a cause.⁸ Some might suspect, for example, that at least some contingent concrete objects—appearing at the Big Bang, perhaps—don't have a cause.

An origin essentialist might, however, accept the following:

(Causal₂) $\Box(\forall x ((x \text{ is a contingent concrete object}) \rightarrow (\Diamond(x, \text{ or an intrinsic duplicate of } x, \text{ is caused}))))$.⁹

According to (Causal₂), even if there can be a contingent concrete object *c* that cannot have a cause, it is possible for there to be an intrinsic duplicate of *c* that can. An *intrinsic duplicate* ('duplicate' hereafter) of *c* is an object having all the same intrinsic properties (e.g., shape, size, mass) as *c*.¹⁰ Origin essentialism provides no

⁶ Some may prefer to replace talk of 'an *object* having a cause' with talk of 'the *event* of an object existing having a cause'.

⁷ For example, if each particle making up an armchair can have a cause, it is plausible that there is a possible world in which *all* those particles are caused.

⁸ It may not be that every origin essentialist who is unsure whether there could be uncaused contingent concrete objects is committed to agnosticism about (Causal₁). Consider the three principles, (Causal₁), origin essentialism (O), and the traditional causal principle that necessarily every contingent concrete object has a cause, (C). If one is unsure about (C) but finds (Causal₁) and (O) initially plausible, then as soon as one sees that (Causal₁) and (O) together entail (C), one may *then* be inclined to accept (C) rather than give up (Causal₁). Much depends upon just *how* plausible (Causal₁) initially seems to one.

⁹ I owe this modified causal principle to Robert Koons.

¹⁰ It is notoriously difficult to define 'being an intrinsic property'. I will stipulate just one necessary condition: if *P* is an 'intrinsic property', then *P* does not entail *being uncaused*. (That condition follows from the condition that extrinsic properties are closed under negation, assuming that *being caused* is extrinsic.)

obvious reason to be skeptical about (Causal₂): even if a neutrino appearing at the Big Band must have the origin that it in fact had, it would not follow that a duplicate neutrino must have that *same* origin. Therefore, an origin essentialist may accept (Causal₂) even if she does not accept (Causal₁).

Even so, one might hesitate to grant that (Causal₂) applies to *every* possible contingent concrete object. Some contingent concrete objects may be very different from things like armchairs and neutrinos. This worry may be met with a defeasible version of the principle:

(Causal_{2N}) $\Box(\text{Normally, } \forall x ((x \text{ is a contingent concrete object}) \rightarrow (\Diamond(x, \text{ or a duplicate of } x, \text{ is caused}))))).$

According to (Causal_{2N}), necessarily, for any given contingent concrete object, one may infer that its existence can be caused—*unless* one has a reason for thinking that the object in question is an exception. (Causal_{2N}) may be more appealing than (Causal₂). The reason is simple: although there may be evidence, be it conceptual or empirical, to support (Causal₂), it's an open possibility that we will find additional evidence to think some cases are exceptions. However, even if we think certain cases are exceptions, we may still approve of the States of Affairs Argument for a concrete necessary being as long as the argument does not depend upon one of the exceptional cases.¹¹

So far, it may seem unlikely that (Causal_{2N}), or even (Causal₁), could be used to reach the conclusion that there is a necessarily existing concrete object. Some defenders of John Duns Scotus' cosmological argument, however, believe that the conclusion can be reached by combining (Causal₁) with

(Scotus) $\Diamond(\exists x (x \text{ is a concrete object that cannot have a cause})).$

(Scotus) says that a concrete object can exist which cannot have a cause, and (Causal₁) says that necessarily, every *contingent* concrete object *can* have a cause. For now, let's suppose that (Scotus) is true. It then follows that a concrete object can exist that is *not* contingent—that is, it's possible for there to be a necessary concrete object. And given S5, it follows that there *actually is* a necessary concrete object. (One may instead use (Causal_{2N}) to reach a necessary concrete object if (Scotus) is modified to say that there can be an object such that neither it or nor any duplicate of it can have a cause.)

Defenders of this type of argument propose that a version of (Scotus) is intuitively plausible in its own right and should therefore be accepted.¹² One should be cautious, however: it is one thing to *see* that something is possible, but it is quite another to be *unable to see* that it's *impossible*. For example, if one is unable to see that Goldbach's conjecture is impossible, she doesn't thereby see that the conjecture is possible and thus (given S5) true. Can we *just see* that it is possible for there to be an object that cannot have a cause, or do we merely fail to see that it is impossible?

¹¹ For more on the use of defeasible reasoning in cosmological arguments, see Oppy 2002, pp. 242–249.

¹² O'Connor's version of (Scotus) is that "essentially independent effectivity can occur in some nature" (1993, pp. 27–28). Loux's version is that "some haecceity is eminent," where an eminent haecceity is one which can only be instantiated by an essentially uncaused first efficient cause that is free with respect to every exercise of its causal powers (1984, pp. 158–159).

If we can just see that such an object is possible, it seems that we should just as easily be able to *just see* that the non-existence of such an object is possible, too. That is, we should find it plausible that

(Scotus X) $\diamond(\sim\exists x (x \text{ is a concrete object that cannot have a cause}))$.

The problem, however, is that (Scotus X) is inconsistent with (Scotus) if (Causal₁) is true. Here's why. (Causal₁) entails (by contraposition) that any necessarily uncaused concrete object is a necessary concrete object, and (Scotus X) says that the non-existence of a necessarily uncaused concrete object is possible. It follows that the non-existence of a necessary concrete object is possible. Now if the non-existence of a necessary concrete object is *possible*, it then follows that there *isn't* a necessary concrete object (for if there *were* a necessary concrete object, it would be *necessary* that there be one, by S4). Recall that (Causal₁) and (Scotus) jointly entail that there is a necessary concrete object, which contradicts the above result that there isn't one. (Clearly, no advantage is gained by working instead with (Causal_{2N}).) To avoid the contradiction, we are forced to admit that we do not see the truth of *both* (Scotus) and (Scotus X). We probably don't see the truth of either one, for neither one seems more evident *prima facie* than the other. I propose, therefore, that we refrain from accepting either (Scotus) or (Scotus X), unless further considerations are offered to support one over the other.¹³

Nevertheless, I shall offer a way to proceed without (Scotus) by developing a new causal principle that's based upon (Causal_{2N}). We considered examples of concrete objects, one being an armchair, to motivate (Causal_{2N}). But suppose, as some philosophers do, that there is no such object as an armchair (cf. Merricks 2002). Instead there are only fundamental particles that are arranged into the shape of an armchair (or arranged *armchairwise*). If that were so, wouldn't there still be *some* sense in which an "armchair" can have a cause? A mereological nihilist can, after all, agree that her favorite "armchair" was produced in a factory by maintaining that certain particles arranged *armchairwise* were caused to be arranged that way in the factory. The particles themselves can all be caused, too, if an armchair can have a complete cause (causes of all its parts). The important point is this: if it is plausible to think that an armchair can have a (complete) cause, then it should also be plausible to think that there can be a (complete) cause of there being certain particles arranged *armchairwise*. It seems, therefore, that examples that motivate (Causal_{2N}) motivate another principle in the neighborhood.

I suggest, then, that we replace (Causal_{2N}) with the following principle (along with an auxiliary definition):

¹³ One might notice that (Scotus) and (Scotus X) are analogous to certain principles used in Plantinga's modal ontological argument in (1974, Chap. 10). His argument relies on a crucial premise, call it (Crucial), that *being maximally excellent in all possible worlds* is possible. But that premise is inconsistent with the premise that it is possible that there is no such maximally excellent being. So an inclination to believe (Crucial) may be met with an equally strong inclination to believe a principle inconsistent with (Crucial). (Causal_{2N}) faces no analogous difficulty.

- (Def₃) Contingent arrangement =_{def} A contingent state of affairs of there being certain contingent concrete objects, the *c*'s, being related to one another in a certain way.¹⁴
- (Causal₃) $\Box(\text{Normally, } \forall S ((S \text{ is a contingent arrangement}) \rightarrow \Diamond(S' \text{ s obtaining, or the obtaining of a duplicate of } S, \text{ is causally explained})))$.

(Causal₃) says that normally the obtaining of any possible arrangement of contingent concrete objects (or a duplicate arrangement consisting of duplicate objects) can be causally explained. Here, I use the term 'arrangement' in a broad sense to include any system of relations holding between objects. Consider some examples: particles forming the lattice of a crystal, Jan's ball being outside of the toy box, your favorite armchair being softer than my favorite armchair, and so on. I'll stipulate that the obtaining of an arrangement *S* is 'causally explained' if and only if for every concrete object *x* in *S*, *x*'s existence and its relationships to objects in *S* have a cause, and for at least one concrete object in *S*, its existence or its relationship to other objects is caused by (the activity or presence of) an object not in (that is, external to) *S*.¹⁵ It seems to me that the arrangement *and* existence of a bunch of objects, no matter how many, would not be explained solely by causally linking those objects to one another, but that some external cause is required for a complete and adequate explanation of the arrangement. Nevertheless, even if it *were* possible for the arrangement and existence of a bunch of objects to be explained without an external cause, (Causal₃) requires just that an external cause is *possible*.

(Causal₃) may be more general than (Causal_{2N}),¹⁶ but I think its generality is what allows us to say that "armchairs" can still be caused even if, strictly speaking, they are only particles arranged *armchairwise*. Some arrangements will, of course, be very haphazard and ad hoc: for example, my left toe being six feet away from the lamp. We may, therefore, wonder whether (Causal₃) fails for certain haphazard arrangements. On the other hand, it is difficult to see what principled reason could be given for saying that certain contingent arrangements cannot be causally explained while others can be. After all, every arrangement exhibits some arbitrariness: it is somewhat arbitrary, for example, whether two particles within your favorite

¹⁴ I make use of *plural quantification* here. The '*c*'s refers to *many* objects rather than to a *class* or a *set*. I do this to minimize ontological commitment. But anyone comfortable with there being classes or sets may wish to reformulate the causal principle in terms of them. For a discussion of the semantics of plural quantification, see Uzquiano (2003, pp. 67–81).

¹⁵ I have not offered a precise account of what it is to be an object *in* a state of affairs. I might have said that anything entailed by a state of affairs is *in* it. But then if a necessary concrete object exists, it will be included in every state of affairs, and I want to avoid saying that a necessary concrete object is included in *contingent* arrangements. A contingent arrangement is supposed to contain only contingent concrete objects. So, when I say that an object is *in* a state of affairs, I don't mean that it's entailed by the state of affairs. To indicate what I *do* mean, I'll make do with an example: the state of affairs of *the blueberry, banana, and the fork on my table existing* has *in* it three objects—a blueberry, banana, and a fork, and *nothing more*.

An alternative strategy, which I won't take up here, is to replace talk of states of affairs with talk of *ordered sets*. Then we may say that to be *included* in a set is to be among its members. Thanks to Ian Evans for suggesting this alternative to me.

¹⁶ However, if concrete objects (or substances) include arbitrary ordered fusions of concrete objects, then (Causal₃) is equivalent to (Causal_{2N}). What I say about arrangements, then, may also apply to ordered fusions.

armchair are separated by a distance R rather than R^* or whether the chair is composed of N particles rather than $N + 1$. Moreover, when we consider various examples of contingent arrangements—planets arranged into a solar system, infinitely many balls stacked on top of one another, Cartesian souls thinking about each other, and so on—it seems that we can always imagine a world in which that arrangement (or a duplicate one) has a causal explanation. Therefore, unless there is a principled reason for thinking that certain contingent arrangements cannot be causally explained, it may be reasonable for us to adopt (Causal₃) as a defeasible causal principle. (I will later consider whether certain *maximal* contingent arrangements might be exceptions.)

For good measure, I'll actually work with a causal principle that's slightly more modest than (Causal₃). Here is a definition and the principle:

(Def₄) Contingent state of existence =_{def} A possible state of affairs of certain contingent individuals, the c 's, existing.

(Causal₄) $\Box(\text{Normally, } \forall S ((S \text{ is a contingent state of existence}) \rightarrow \Diamond(S \text{'s obtaining, or the obtaining of a duplicate of } S, \text{ is causally explained})))$.

(Causal₄) states that normally the existence of any possible collection of contingent concrete objects, or a duplicate collection, can have a causal explanation.¹⁷ (Causal₄) is entailed by (Causal₃) since a complete causal explanation of an arrangement includes a causal explanation of the collection of objects in that arrangement. So, if any contingent arrangement can be causally explained, then so can any contingent state of existence. But (Causal₄) doesn't entail (Causal₃), which makes (Causal₄) weaker than (Causal₃).

(Causal₄) is relatively modest compared to even the most modest causal principles featured in cosmological arguments. Consider first a principle developed by Richard Gale and Alexander Pruss:

(GP) $\Box(\forall S ((S \text{ is a contingent state of affairs}) \rightarrow (\Diamond(S \text{'s obtaining has an explanation}))))$.¹⁸

Notice that (GP) applies to contingent states of affairs in general. Consider, for example, the state of affairs MT of a monster truck popping into existence uncaused. According to (GP), if MT can obtain, then it can have a causal explanation. Of course, MT can't have a causal explanation because the monster truck's existence is uncaused; therefore, (GP) implies that MT can't obtain. By generalizing, (GP) can be shown to entail a version of Leibniz's principle of sufficient reason (viz, necessarily, if a contingent state of affairs obtains, its obtaining has an explanation)¹⁹—a principle that faces notoriously difficult problems,²⁰ none of which threaten (Causal₄).

¹⁷ (Causal₄) is equivalent to (Causal_{2N}), if concrete objects include arbitrary (unordered) fusions of concrete objects.

¹⁸ Gale and Pruss 1999, pp. 461–476.

¹⁹ Gale and Pruss 2002, pp. 89–99.

²⁰ There is, for example, Peter van Inwagen's argument that the conjunction of all contingent true propositions (or in our terms, a contingent state of affairs that entails every actual contingent state of affairs) is explained only if every fact is necessary or else some contingent fact explains itself (see van Inwagen 1983, pp. 202–204).

Let's turn to a second example of a recent causal principle offered by Robert Koons:

(K) Normally, $(\forall S ((S \text{ is a wholly contingent state of affairs}) \rightarrow (\text{the obtaining of } S \text{ is causally explained})))$, where a *wholly contingent state of affairs* is one which contains only contingent concrete objects.²¹

(K) avoids some of the difficulties that (GP) faces.²² However, (K) is stronger than (Causal₄): (Causal₄) only requires that the obtaining of any contingent state of existence is *possibly* caused, whereas (K) requires that the obtaining of any contingent state of existence is *actually* caused. Additionally, (K) requires that the *activities* of things be caused because it applies not only to *states of existence* but also to *states of affairs* in general. Consider, for example, the state of affairs consisting of Sally's freely performing an action. It is a wholly contingent state of affairs, yet some philosophers, especially those attracted to libertarian views of agency, may doubt that such a state of affairs could even possibly be caused. (Causal₄), by contrast, does not require that *free actions* possibly be caused, since (Causal₄) is restricted to the existence of *concrete objects*. Although I don't offer a definition of 'concrete object', we have enough grasp of the notion to say that a *free action* is not one. So (Causal₄), unlike (K), faces no difficulty in accounting for the possibility of free actions. Thus we see that (Causal₄) has certain advantages over Koons' causal principle.

Finally, consider the principle in the Kalām cosmological argument:

(W) Whatever begins to exist has a cause

(W) faces a difficulty that's similar to the one Koons' principle faces. Consider the event of *Socrates freely raising his arm*. That event, supposing it existed, had a beginning. Yet, it may not be the sort of thing that can have a cause. If it *were*, then as William Rowe points out, we must consider a further event: the event of *the causing of Socrates raising his arm*, and this event *too* would have a beginning and so require a cause, *ad infinitum* (Rowe 2002, p. 73). (Causal₃), by contrast, does not commit us to such extraordinary causal chains.

One might modify (W) so that it applies to concrete *objects* and not events (cf. Craig 2002, p. 157). Then (W) would imply that the universe, if it is a concrete object that began to exist, has a cause. If we think that *contingent* objects normally have a beginning or *possibly* have a beginning (which seems reasonable), then belief in (W) commits us to (Causal₄). On the other hand, belief in (Causal₄) does not commit us to (W), since (Causal₄) allows for uncaused beginnings. Therefore, (Causal₄) seems to be more modest than (W).

²¹ Koons' principle was originally expressed in terms of *facts* rather than *states of affairs* (see Koons 1997, pp. 193–212).

²² For example, consider the state of affairs *S* consisting in there being all the contingent concrete objects that there are. The obtaining of *S* can be explained by the obtaining of *T*, where *T* is the state of affairs consisting of a *necessary concrete object* freely willing that *S* obtain. Although *T* is a contingent state of affairs (since the necessary concrete object didn't *have* to will that *S* obtain), *T* is not a *wholly contingent* state of affairs since it includes a necessary concrete object, and so the obtaining of *T* does not require an explanation.

(Causal₄) is, therefore, a relatively modest causal principle. It turns out that the principle can be used to mark out a path to a necessary concrete object. The path proceeds as follows. Call a state of existence *maximal with respect to contingent concrete objects* if and only if it entails every contingent state of existence compatible with it. Assume that there is at least one contingent state of existence, *M*, which is maximal with respect to contingent concrete objects (or *maximal*, for short). If (Causal₄) is true, then it's possible for the obtaining of *M*, or a duplicate of *M*, to have a causal explanation. It is impossible for a *contingent* concrete object to provide a causal explanation for *M*'s obtaining because any contingent concrete object whose existence is compatible with *M* is contained in *M* and so, on pain of circularity, cannot provide a causal explanation of *M*.²³ Similarly, no contingent concrete object can provide a causal explanation for any duplicate of *M*—assuming that any duplicate of *M* is also maximal. Therefore, if it is possible for the obtaining of *M*, or a duplicate, to be causally explained, then it is possible for there to be a concrete object that is *not* contingent—that is, necessary. Given S5, a necessary concrete object (or necessary being) exists.

We've found a path from (Causal₄) to a necessary concrete object or objects. Although that is interesting news, the path requires a couple steps that some may find precarious. It requires that

- (1) $\exists M$ (*M* is a maximal contingent state of existence)

and that

- (2) We have no reason to think that maximal contingent states of existence are exceptions to Causal₄.

In the next section, I will consider some reasons that support (1) and (2). Then I will mark out alternative paths to a necessary concrete object that don't require these steps, but which instead utilize causal principles that are more powerful than (Causal₄).

2.1 Maximal states of existence

Suppose that there can be a contingent concrete object, *Lonely*, which is necessarily incompatible with every other contingent concrete object. We might call *Lonely* *maximally incompatible*. The state of existence which contains just *Lonely* is itself *maximal*, given that it entails every other contingent state of existence compatible with it (that is, *none*). Therefore, if there can be a maximally incompatible object, then (1) is true.

Suppose, on the other hand, that there *can't* be a maximally incompatible object. Then it is natural to think that objects (*qua* objects) are, at least in general, compatible with one another. If it were commonplace for objects to be incompatible with one another, then it's a slippery slope to the possibility of an object that's

²³ Or if circular causal chains are possible, we can make do instead with the observation that no contingent concrete object can provide an *external* causal explanation for *M*'s obtaining, given that *M* contains every contingent concrete object.

maximally incompatible. For example, if there can be a particle p that's incompatible with the existence of your favorite armchair, then why can't there be a particle q that is incompatible with your armchair as well as with p ? Furthermore, why can't there be a particle z that is incompatible with your armchair, p , q , and *anything else*? On the other hand, if there *can't* be any particle such as z , one systematic account that explains why is that objects are generally compatible with one another. If objects are compatible with one another, then we might suspect that the maximal state of existence E consisting of *every* possible contingent concrete object can obtain.

We should be cautious, however. Given certain assumptions, it can be shown that E is an *impossible* state of existence. Here's how. Suppose that space is necessarily *continuous*, such that the cardinality of the set of distinct locations is \aleph_1 (the cardinality of the set of real numbers). Suppose in addition that it is impossible for any two material objects to simultaneously occupy the same region of space. Finally, suppose that for every possible shape, there can be a distinct material object that has that shape. Given these suppositions, the cardinality of the set of possible, spatially extended material objects is (at least) \aleph_2 , since the cardinality of the set of shapes on a continuum of space is \aleph_2 . What follows is that there isn't enough space to *fit* every possible material object. Therefore, given certain assumptions, a state of existence consisting of all possible extended objects isn't possible, *even if* every object is compatible with every other. Some states of existence may, therefore, be *too large* to possibly exist.

Nevertheless, even granting the above assumptions, there may still be maximal states of existence that aren't too large. Consider a world containing an object that necessarily takes up all of space (perhaps by being infinitely extended in all possible spatial dimensions). Call the object *Big Blob*. Suppose the existence of Big Blob is possible (not *physically* possible, but broadly logically possible). Then, (Causal₄) provides a defeasible reason to think that a state of existence consisting of just Big Blob (or a duplicate) is possibly caused. Since Big Blob necessarily occupies all of space, the only possible cause of Big Blob's existence must itself occupy *no* space or else share space with Big Blob.²⁴ Thus, we have a defeasible reason to think that it's possible *either* for there to be an object that doesn't occupy space *or* for an object to share space with another object. Notice that in either case, we don't have to worry about *fitting* objects into a region of space. After all, you can have as many angels (or overlapping ectoplasms) dancing on the head of a pin as you wish! If that's right, then a contingent state of existence consisting of Big Blob, plus all possible objects compatible with it (non-spatial and/or overlapping ones), is maximal.

²⁴ What if the cause c of Big Blob ceases to exist before Big Blob begins to exist? Couldn't c then be in space without overlapping Big Blob? Here's an answer. Suppose presentism (roughly the view that only presently existing things are real) is correct. Then, if c no longer exists when Big Blob comes to exist, it seems that it would be impossible for c to be the cause of Big Blob. After all, c no longer exists to perform any causal work. On the other hand, if presentism is incorrect, then c exists (tenselessly, perhaps) even if not at the same *time* as Big Blob. Perhaps c could then cause Big Blob even if c and Big Blob don't exist at the same time. Nevertheless, if there can be objects "located" at different points in time and if an object can occupy all of space, then we might find it plausible that an object can occupy *both* all of space *and* time. Let Big Blob be such an object. On either theory of time then, c can't be something that ceases to exist *before* Big Blob begins to exist.

Therefore, we can support (1) without accepting the possibility of a maximally incompatible object.

The Big Blob argument for a maximal state of existence is defeasible. One may resist it if, for example, one has a good reason to think that both non-spatial and overlapping objects are impossible. In that case, any inclination one has to think that Big Blob possibly has a cause may be overridden. The argument remains an important discovery, however, for a couple reasons. First, it shifts the epistemic burden: anyone who would not grant the possibility of a maximal state of existence must show why Big Blob is an exception to the causal principle. Second, it may be a motivation for those philosophers who already grant the metaphysical possibility of non-spatial or overlapping objects (such as ghosts) to allow for a maximal state of existence and thus a concrete necessary object.²⁵

To summarize, if there can be a maximally incompatible object, then (1) immediately follows; but even if there *can't* be a maximally incompatible object, there remains a path to (1).²⁶ Thus, there appears to be support for thinking that there are maximal contingent states of existence.

The journey to a necessary concrete object can be completed if there is no reason to think that maximal states of existence are exceptions to (Causal₄), that is, if (2) is true. One may, however, hesitate to accept (2) by reasoning as follows: A maximal contingent state of existence, unlike non-maximal ones, can be causally explained only if a necessary concrete object can and does exist (by S5). Yet, it is uncertain (even doubtful for some) that a necessary concrete object exists. Therefore, it is also uncertain (or doubtful) that (Causal₄) applies to maximal contingent states of existence. We should make an exception, then, for maximal contingent states of existence because such states, unlike non-maximal ones, can only be caused to obtain if a necessary concrete object exists.

On the other hand, we observe that maximal states of existence can be intrinsically just like non-maximal ones, differing only in virtue of containing more or different objects. Consider, for example, a non-maximal state of existence that contains every object that is contained in some maximal state of existence *except* for a single angel. If the non-maximal state of existence can be caused to obtain, then shouldn't the slightly more complicated, maximal one be possibly caused to obtain as well? Admittedly, if we had a good reason to think that there are no necessary concrete objects, then that reason *might* carry over into a reason for thinking that maximal contingent states of existence cannot be caused. But if we are instead

²⁵ Some non-reductive physicalists with respect to the mind, for example, grant the metaphysical possibility of "ghosts" (non-spatial or potentially overlapping objects) but do not (yet) grant that any necessary concrete object exists. David Chalmers and Jaegwon Kim are examples of non-reductive physicalists who confessed to me (via e-mail) that they accept the possibility of "ghosts" but not the existence of a necessary concrete object.

²⁶ The mathematically inclined reader may be interested to know that the denial of (1) is equivalent to the proposition that a set S of all contingent states of existence can't be ordered, such that every totally ordered subset of S has an upper bound. For if S could be, then by Zorn's lemma, such a set would contain a maximal member (that is, it would contain a state of existence that includes as many objects as is contained by any state of existence in S). A maximal member of S would be a maximal contingent state of existence.

agnostic about whether there is a necessary concrete object, it may be reasonable to give up our agnosticism once we see that a necessary concrete object can be inferred from a general, intuitive causal principle.

I don't expect the above reply will convince everyone. The path marked out may lead some philosophers to find the existence of a necessary concrete object evident; for others, that path may indicate where exceptions to a certain general causal principle ought to be made. In either case, our understanding of the cosmological argument has been extended, since we now see how a causal principle that is more modest than those featured in traditional cosmological arguments can be used in an argument for a necessary concrete object.

2.2 Alternative paths

There are a couple paths in the vicinity that don't require the possibility of a maximal contingent state of existence. These paths depend upon principles that differ from (Causal₄) but which may still be more modest than causal principles employed in traditional cosmological arguments. The first principle is as follows:

(Causal₅) $\forall T$ (T is a *type* of contingent concrete object $\rightarrow \Diamond$ (the obtaining of the state of affairs of *there being at least one member of T* is causally explained)).

According to (Causal₅), it is possible for there to be a causal explanation as to why *at least* one member of a given type of contingent concrete object exists. (Causal₅) is not strictly entailed by (Causal₄). Yet, some philosophers might find (Causal₅) evident by reflecting on the same examples that were used to motivate (Causal₄). Consider, for example, a certain armchair (or particles arranged armchairwise). We may begin by wondering why *that* armchair exists, but we can go on to wonder why *any* armchair exists at all. In both cases, a causal explanation seems possible. We may, therefore, wish to generalize: for any type of contingent concrete object, a causal explanation as to why there are any members of that type is possible.²⁷

Now it may seem that an explanation as to why there are any members of a type T can't itself be one of the members of T . For example, the explanation as to why there are any emeralds can't *itself* be one (or more) of the emeralds, it seems. After all, the causal activity of an emerald will never tell us why there are any emeralds to begin with. Therefore, we may wish to grant

(Causal₆) $\forall T$ (T is a *type* of contingent concrete object $\rightarrow \sim\Diamond$ (the obtaining of the state of affairs of *there being at least one member of T* is causally explained by a member of T)).

²⁷ When I talk of *types*, I have in mind *intrinsic types* (types that ontologically contain, so to speak, only intrinsic properties)—things like *Lion*, *Blue Marble*, or *Wet Rock*. I don't wish to include types like *Lion to the Left of Tiger* or *Not Caused by a Giraffe*, since such types seem to contain extrinsic properties. I am assuming that extrinsic properties are closed under negation: so, if *having a cause* is extrinsic, then so is *not having a cause*. Recall footnote 10.

The path to a necessary concrete object is just a few short steps. Consider the type *Contingent Concrete Object*. Given (Causal₆), it's not possible for a member of that type to causally explain why there are any contingent concrete objects in the first place. More precisely, there is no world in which a contingent concrete object causally explains why the state of affairs *L* of *there being at least one contingent concrete object* obtains. Thus, if it's possible for *L*'s obtaining to be causally explained (by (Causal₅)), then it's possible for there to be a concrete object that isn't contingent. The existence of a necessary concrete object follows.

One might hesitate, however, to accept (Causal₅) once one sees that only a necessary concrete object can causally explain why there are any contingent concrete objects. For, if one is initially unsure about the existence of a necessary concrete object, one might then become unsure whether the type, Contingent Concrete Object, is an exception to (Causal₅). On the other hand, one might find it ad hoc to say that (Causal₅) applies to every type *except* the most general one. If (Causal₅) seems to apply to every type we can think of—Contingent Concrete Object notwithstanding—that may provide evidence for its applying to Contingent Concrete Object, too. Here, I think rational disagreement is possible. What's important is that progress has been made: we have a new path to the existence of a concrete necessary object; and it relies on a causal principle that's more modest than causal principles employed in traditional cosmological arguments.

Let's consider a final path to a necessary concrete object. This one depends upon the following causal principle:

(Causal₇) $\forall T$ (T is a type of contingent concrete object $\rightarrow \Diamond$ (The obtaining of the state of affairs of *there being exactly n members of T* has a causal explanation)), where $n > 0$.

According to (Causal₇), for any given collection of contingent concrete objects of a certain type, it's possible to causally explain why there are a particular number of members of that type. For example, let's say that there are exactly fifty-five emeralds. Then according to (Causal₇), it should be possible to explain why there are exactly fifty-five emeralds. That explanation *can* simply be whatever explains the obtaining of the state of existence consisting of those emeralds, but some causal explanations won't work: a *fifty-sixth emerald*, for example, can't causally explain why there are *exactly* fifty-five emeralds. Since (Causal₄), by contrast, allows in principle a fifty-sixth emerald to causally explain the existence of fifty-five emeralds, (Causal₇) is not as modest as (Causal₄). However, (Causal₇) still, to some extent, reflects the form and modesty of (Causal₄).

With (Causal₇) in hand, the destination is not far off. (We will see that this path, unlike previous ones, relies on just one premise.) Let *E* be the state of affairs of *there being exactly one contingent concrete object* (or for those who doubt there could be *just* one, let *E* be the state of affairs of *there being the number of contingent concrete objects that there are in the actual world*). Every contingent concrete object not contained in *E* is incompatible with *E*, since *E* entails that there be only and exactly the number of contingent concrete objects contained in *E*. Therefore, no contingent concrete object could causally explain *E*. Only a *necessary* concrete

object could do that. Therefore, we can infer that a necessary concrete object exists if we accept (Causal₇).²⁸

2.3 Summary

Before closing, let's take stock of the argument and then turn to some objections and replies. One path in the States of Affairs Argument uses the premise that normally, for any contingent state of existence, it, or one of its duplicates, can be caused to obtain. From that premise, we can reach the existence of a necessary concrete object if there can be *maximal* contingent states of existence and if such states of existence aren't exceptions to the causal principle. There are alternative routes to a necessary concrete object: one begins with the premise that the contingent state of affairs of *there being at least one contingent concrete object of type T* can be caused to obtain (for any *T*); the other relies on the premise that the contingent state of affairs of *there being exactly n contingent concrete objects of type T* can be caused to obtain (for any $n > 0$ and any *T*). If any of these routes are successful, then a necessary concrete object (or necessary being) falls out of a metaphysical framework in which there are abstract states of affairs.

3 Objections and replies

There are some challenging objections to cosmological arguments, and some of them are relevant to the States of Affairs Argument. I'll begin with select objections from Hume and Kant, moving to objections from Russell and Rowe.

OBJECTION 1 According to Hume, the concept of 'necessary existence' is incoherent or does not apply to anything in reality since whatever can be conceived of as existing can be conceived of as not existing (Hume 1959, pp. 58–59).

Hume thinks there can't be a necessary entity, given that one can always conceive of an entity's *not existing*. The objection depends upon the assumptions that conceivability implies possibility, and further, that every entity can be conceived of as not existing.

It's difficult to see how OBJECTION 1 can be defended without giving up metaphysical frameworks for modal discourse. Necessary entities such as states of affairs and properties are essential components of such frameworks. For example, take the number 9—given an ontology that includes states of affairs, we can say that 9's existence is *necessary* since it would exist no matter what possible state of affairs were to obtain. Consider how this result conflicts with OBJECTION 1: 9's non-existence is either conceivable or else not. If conceivable, then conceivability does not necessarily imply possibility since the non-existence of 9 is nonetheless impossible. If, on the other hand, 9's non-existence is *not* conceivable, then it's not true that every entity can be conceived of as not existing. Either way then, an assumption upon which OBJECTION 1 depends is false. Therefore, given a

²⁸ These last couple paths owe their inspiration to correspondence with Alexander Pruss.

metaphysical framework in which there are necessary entities, OBJECTION 1 fails to present a good reason to rule out, in principle, the possibility of a concrete necessary object.

OBJECTION 2 According to Hume, if the concept of necessary existence were coherent, why cannot matter have a quality such that its non-existence is inconceivable? (ibid.).

Although this objection does not target the conclusion that there is a necessary concrete object, it does call into question the significance of the conclusion. If matter can be necessary, then we have not arrived at the existence of something that transcends the physical universe.

Nevertheless, recall that one path led to the existence of a necessary concrete object (or objects) capable of causally explaining any and every maximal contingent state of existence that there could be. It seems unlikely that any actual material object or objects would be capable of causally explaining every maximal contingent state of existence (such as one consisting of Big Blob plus all the angels and demons compatible with it). Therefore, the necessary concrete object(s) is probably not identical to any material object(s). This conclusion, I contend, is a surprising and interesting metaphysical result.

OBJECTION 3 According to Hume, it makes no sense to inquire as to the cause of the whole of all contingent things, since the uniting of parts into a whole is merely a mental abstraction which does not apply to reality (ibid.).

The States of Affairs Argument presupposes a framework in which there are abstract states of affairs. Although some may regard states of affairs as *wholes* of a sort, such wholes are not concrete. For this reason, I defined a “causal explanation of an actual (obtaining) state of affairs” in terms of causes of concrete objects. The obtaining of abstract states of affairs, then, can be causally explained as long as the objects contained in them can be caused. Therefore, even if Hume is right that objects cannot be aggregated into a *concrete* whole that can be caused, the States of Affairs Argument may still go through as long as the obtaining of abstract states of affairs can be causally explained.

OBJECTION 4 According to Hume, it is not rational to believe that (necessarily) contingent events are caused since there is no contradiction or absurdity in an event being utterly uncaused (ibid.).

The causal principles employed in the States of Affairs Argument allow for the existence of uncaused events (and uncaused objects). Thus, OBJECTION 4 does not directly apply to those principles.

The objection may apply indirectly, however; for no *logical contradiction* evidently results from denying any of the causal principles in the States of Affairs Argument. In reply, notice that no contradiction evidently results from denying that $2 + 2 = 4$ or that *no event can precede itself*. Yet, both are necessary principles that clearly seem to be true. Therefore, for all that Hume says, the principles used in the States of Affairs Argument may be epistemically on par (or nearly so) with certain other obvious necessary truths whose denials do not result in contradictions.

OBJECTION 5 According to Kant, the cosmological argument relies on the ontological argument.

Kant argues that if the concept of necessary existence is logically equivalent to the concept of *ens realissimum* (maximally great being), then the “possibility of [a necessary concrete object] is perceived” (Kant 1925, p. 47). But the possibility of a necessary concrete object is the dubious premise in the ontological argument. Therefore, any cosmological argument for a necessary concrete object depends upon the dubious premise that a necessary concrete object is possible.

A similar worry is relevant to the States of Affairs Argument: if the argument is sound, then (Causal₄) entails the possibility of a necessary concrete object. This means that (Causal₄) can’t be true unless a necessary concrete object is possible. Yet, by S5, if such an object is possible, it is also actual. Therefore, (Causal₄), as well as any premise that entails the possibility of a necessary concrete object, begs the question.

The proper response to this objection is to point out that one need not *believe* that a necessary concrete object exists or even possibly exists in order to be justified in believing (Causal₄). One might be agnostic about whether the existence of a necessary concrete object is possible and yet find (Causal₄) to be evidently true. Once one *sees* that (Causal₄) can be used to support the existence of a necessary concrete object, one may *then* believe that a necessary concrete object is both possible and actual. One should not reject (Causal₄) *just because* it entails a necessary concrete object. In general, to rationally infer a conclusion from a premise, one should only be required to find the premise evident without *already believing* the conclusion, and to see that the conclusion follows.

OBJECTION 6 According to Russell, it is a mistake to infer that a *causal series* of contingent objects has a cause from the premise that every member of that series has a cause (Russell and Copleston 1986, p. 131).

Russell is surely right that it is a mistake to assume that a causal series of objects has a cause just because every member has a cause. It would similarly be a mistake to assume that a causal series of objects *can* have a cause just because every member *can* have a cause. After all, it may turn out that an *infinite* causal series cannot itself be caused, even though each member of that series has a cause.

Russell’s objection poses a problem for the States of Affairs Argument only if a certain causal series cannot be causally explained *and if* the possibility of causally explaining a maximal state of existence is thereby called into question. Both conditions are doubtful. Regarding the first, it is unclear that a causal series, even an infinite one, cannot have members that are at least partially caused by something outside the series. For example, *perhaps* for any causal series *s*, it is possible for something outside *s* to cause the members in *s* to be causally connected. It’s hard to see why that should be ruled out.

But even if we could somehow show that a certain causal series cannot be causally explained, it’s not clear that we should thereby doubt whether a maximal contingent state of existence can be causally explained. After all, a state of existence need not be arranged into a causal series (recall, for example, the maximal state of

existence containing Big Blob plus all possible concrete objects compatible with Big Blob). Therefore, even if there are *causal series* that cannot be causally explained, it does not follow that there are contingent *states of existences* that cannot be causally explained. It seems, therefore, that the States of Affairs Argument escapes Russell's objection *even if* some causal series cannot be causally explained.

OBJECTION 7 According to Rowe, it may be that any inclination to believe in a principle of causal explanation that is weaker than Leibniz's principle of sufficient reason ultimately stems from an inclination to believe Leibniz's principle, a principle shown to be false (Rowe 1998, p. 112).

OBJECTION 7 is an undercutting defeater that may be raised against cosmological arguments that rely on principles of explanation that are weaker than the full-blown principle of sufficient reason. The idea is that since *some* states of affairs cannot be causally explained (for example, the state of affairs of a monster truck popping into existence *uncaused*), the most general principles of causation (or explanation) cannot be correct. It may be thought, therefore, that we should not be confident that any weaker principle of explanation is correct, either.

OBJECTION 7 is ideally posed against principles that have exception clauses explicitly built into them. For example, Pruss offers a principle according to which all contingent propositions, *except* those that don't possibly have an explanation, have an explanation (Pruss 2004, pp. 165–179). Pruss' goal is to avoid saying that every contingent proposition (including the proposition that the monster truck was uncaused, or the proposition that God chose to create our universe) has, or even possibly has, an explanation. By contrast, the causal principles in the States of Affairs Argument are not designed to avoid intolerable paradoxes and consequences. They do not have exception clauses built in. Rather, they are relatively general, intuitive principles that can be motivated by considering a variety of examples of states of affairs that can have a causal explanation. Therefore, it's not at all clear that the causal principles used in the States of Affairs Argument lack rational support, even if Leibniz's principle of sufficient reason is problematic.²⁹

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²⁹ The conclusion of the States of Affairs Argument may have an important implication concerning the sorts of things that can enter into causal relations: if necessary concrete objects cannot be located within any space (or space-time), then something non-spatial can be causally related to spatial things. This implication leads to a question: is the notion of 'cause' as it is used in the States of Affairs Argument the same as the notion of 'cause' as it is used in the statement that a non-spatial object can cause a spatial one? If not, how can we be sure that the causal principles in the States of Affairs Argument can be generalized to apply to non-spatial concrete objects? A reason to think our notion of causation applies only to spatial objects is that we are only ever acquainted with causal relations between spatial objects. On the other hand, it seems we can grasp the relation *caused by* without also grasping the relation *caused by something spatial*. Therefore, it is not *analytic* (determined solely by the meaning of 'cause') that causal relations can only hold between spatial objects. It remains open for consideration, then, that from the States of Affairs Argument, one can infer that non-spatial objects can be causally related to spatial ones.

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