

## Epistemological Foundations for Koons' Cosmological Argument?

Koons (2008) argues for the very surprising conclusion that 'any exception to the principle of general causation [i.e., the principle that everything has a cause] that is narrow enough to avoid a collapse into global scepticism about empirical knowledge is also narrow enough to permit the construction of a successful proof of God's existence' (106). While Koons supposes that there are two ways in which a 'principle of general causation' could be connected to the possibility of empirical knowledge—namely (i) as an objective fact needed as the ground for the reliability of our cognitive processes, and (ii) as a subjectively required presumption needed for immunity to internal defeaters—he does little more than sketch the beginnings of the development of an argument of the first kind, reserving almost all of his attention for the development of an argument of the second kind. We shall follow his lead.

### 1

Here are the definitions, propositions, lemmas and theorems that make up Koons' argument for Theorem 2, i.e., for 'the main result' (121) of his paper:

**Definition 0:** A person's *knowledge-net* consists in all of his belief states, together with their objects and those states, if any, that both cause one of those belief states and intermediate causally between it and its object (or between it and the common cause of it and its object).<sup>1</sup>

**Definition 1:** A proposition that q is a *rebutting defeater* of proposition that p for an agent S *iff* S believes that q and the proposition that q provides S with adequate grounds for judging that p is false, even when combined with S's evidence for p.

**Definition 2:** A proposition that q is an *undercutting defeater* of proposition that p for agent S *iff* S believes that q and the proposition that q provides S with adequate grounds for judging that it is not highly likely that the processes that led to his\* disposition to believe that p are warrant conferring.

**Definition 3:** A proposition that r is a *neutralising defeater* of the proposition that q in relation to the proposition that p for S *iff* S believes that r and that q, the proposition that q is a defeater of the proposition that p for S, and the conjunctive proposition that r and q is not a defeater of the proposition that p for S.

**Proposition 1:** S knows that p *only if* every rebutting or undercutting defeater of the proposition that p for S is neutralised for S.

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<sup>1</sup> Although Koons does not say this explicitly, I take it that, in his definition of a knowledge-net, he means to refer only to belief states that are also knowledge states: there are, for example, no false beliefs in one's knowledge net. The example that Koons gives to illustrate his definition might be taken to confirm this point: 'If S has perceptual knowledge of the fact that p by vision, then S's knowledge net includes his belief that p, that fact that p, and those states that are causally intermediate between these two, such as the reflection of light by the objects involved in the fact that p, the transmission of that light to S's eyes, the occurrence of nerve signals between S's retina and brain, and S's visual impressions as of the truth that p.' (111)

**Proposition 2:** S knows that p *only if* S is in a position to believe that p with internal justification.

**Proposition 3:** S is in a position to believe with internal justification that p *only if* S is in a position to believe with internal justification that it is very unlikely that q is true, for every available proposition that q that would, if believed, be an unneutralised undercutting defeater for S of the proposition that p.

**Proposition 4:** S is in a position to believe with internal justification that p *only if* S is in a position to believe with internal justification that it is highly likely that his\* belief that p is warranted.

**Proposition 5:** If S's belief that p is not strongly *a priori* justified or self-verifying—i.e. if S's belief that p is an ordinary empirical belief—then S is in a position to believe with internal justification that p *only if* S is potentially in a position to believe with internal justification that it is highly probable that his\* belief that p is warranted—i.e. formed by a normal and alethically reliable process—in such a way that S's belief that p would depend for its internal justification on the justification of the latter belief.<sup>2</sup>

**Proposition 6:** It is evident that—with the possible exception of strongly *a priori* justified beliefs and self-verifying beliefs—any belief that is uncaused or whose epistemic grounds are uncaused is not warranted, because such a belief is not then formed by a normal, alethically reliable process. Moreover, the proposition that some or all of his\* beliefs are uncaused is available to S.

**Lemma 1:** If S's belief that p is an ordinary empirical belief, then S knows that p *only if* S is in a position to believe with internal justification that it is highly probable that his\* belief that p and the grounds for his belief that p are caused in such a way that S's belief that p depends for its justification on the justification for his\* belief that p and the grounds for his belief that p are caused. (From Propositions 1-6.)

**Proposition 7:** Let R be a relation whose range is the set of propositions belief in which S is in a position to be internally justified in having. Let R hold between the propositions that p and that q just in case S is potentially in a position to be in a noetic state in which S's belief that p depends for its internal justification on S's belief that q. Then R is a partial well-ordering: well-founded, transitive and irreflexive.

**Lemma 2:** If S's belief that p is an ordinary empirical belief, then S knows that p *only if* there is a noetic state n and a proposition that q of such a kind that (i) S is in a position to be in n, (ii) in state n, S's belief that p depends for its internal justification on S's belief that it is highly likely that his\* belief that q is caused, and (iii) in state n, S's belief that it is highly likely that his\* belief that q is caused does not depend for its internal justification on any ordinary empirical beliefs of S's. (From Lemma 1 and Proposition 7.)

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<sup>2</sup> Koons tells us that 'a belief is justified in a *strongly a priori* way iff the belief is justified without reference to any kind of experience or inclination whatsoever, whether sensual or purely intellectual' (115). On Koons' estimation strongly *a priori* justified beliefs are intrinsically immune to undercutting defeat (116, 122).

**Lemma 3:** If S's belief that p is an ordinary empirical belief then S know that p *only if* there is a proposition that q such that S is potentially in a position to be strongly *a priori* justified in believing that his\* ordinary empirical belief that q is caused and in believing that the epistemic grounds of his\* belief that q are very likely caused.

**Proposition 9:** Necessarily, if S's belief that p is an ordinary empirical belief, then S is potentially in a position to be strongly *a priori* justified in believing that it is highly likely that his\* belief that p and the grounds of his\* belief that p are caused *only if* S is in a position to be strongly *a priori* justified in believing that it is highly likely that *any* of the situations in his empirical knowledge-net is caused.

**Lemma 4:** Necessarily, if S's belief that p is an ordinary empirical belief, then S knows that p *only if* S is in a position to be strongly *a priori* justified in believing that it is highly likely that *any* of the situations in his empirical knowledge-net is caused. (From Lemma 3 and Proposition 9.)

**Definition 4:**  $\gamma$  is a *principle of general causation* iff  $\gamma$  takes the form: it is nomologically impossible for a situation of type T to be actual in the absence of a cause. For such a principle, T is  $\gamma$ 's *range of application*.

**Definition 5:**  $\gamma$  is a *qualified principle of general causation* iff  $\gamma$  takes the following form: the objective probabilities are of such a kind that, for every possible situation of type T, the probability of s's occurring uncaused is vanishingly low—i.e., so low that, no matter how unlikely the caused occurrence of s might be according to a possible noetic state, its uncaused occurrence is much more likely.<sup>3</sup>

**Proposition 10:** S is potentially in a position to be strongly *a priori* justified in believing that it is highly likely that any of the situations in his\* empirical knowledge net is caused *only if* S is strongly *a priori* justified in believing that it is very likely that there is some type T such that (i) some principle—or qualified principle—of general causation  $\gamma$  holds with T as its range of application, and (ii) it is self-evident to S that nearly all of the situations in his\* empirical knowledge net fall within T.

**Proposition 11:** S is potentially in a position to be strongly *a priori* justified in believing that it is highly likely that any of the situations in his\* empirical knowledge-net is caused *only if* there is some type T such that S is strongly *a priori* justified in believing that (i) it is very likely that it is nomologically impossible for situations of type T to be actual in the absence of a cause, and (ii) it is self-evident to S that nearly all of the situations in his\* empirical knowledge net fall within T. (From Proposition 10.)

**Theorem 2:** If S's belief that p is an ordinary empirical belief, then S knows that p *only if* there is some type T such that S is strongly *a priori* justified in believing that (i) it is very likely that it is nomologically impossible for situations of type T to be actual in the absence of a cause, and (ii) it is self-evident to S that nearly all of the situations in his\* empirical knowledge net fall within T. (From Lemma 4 and Proposition 11.)

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<sup>3</sup> The 'objective probabilities' to which Koons refers here are 'subjective in nature, but correspond to the probability judgments of an ideal rational agent' (115).

## 2

Clearly, there are many questions that could be raised about the argument for Theorem 2. Koons himself acknowledges that ‘there is a great deal more work to be done on the nature of immunity to defeat, on the nature of the related dependency relations between propositions, and on the possible scope of strongly *a priori* beliefs’ (131)—and others will surely want to raise objections against the basic epistemological assumptions that help to drive the argument. However, I propose to focus on just one difficulty that I see in the argument for Theorem 2, namely the acceptability of Proposition 9.

Shorn of irrelevant complications, Proposition 9 tells us that, in order to be justified in believing that one’s belief that *p* and the grounds for one’s belief that *p* are caused, one needs to be justified in believing that it is highly likely that *any* of the situations in one’s knowledge net is caused. However, it is clear that this is not so—and, indeed, as we shall see, Koons himself tacitly concedes that this is not so.

Recall that, according to Koons, there are three kinds of elements in a knowledge-net: belief states, objects of beliefs, and events that mediate between belief states and their objects. In any particular case of empirical belief, given the other assumptions that Koons makes, it is clear that we can concede that, in order to be justified in believing that one’s belief that *p* and the grounds for one’s belief that *p* are caused, one needs to be justified in believing that the state of one’s believing that *p* and the events that mediate between the state of one’s believing that *p* and the object of one’s belief that *p* are caused—but, at least for all that we have been given so far, we have no reason at all to concede that we so much as need to believe that the object of one’s belief that *p* is caused.

When Koons himself introduces the relevant considerations, he writes as follows:

In the case of empirical knowledge, one must be justified in believing that there is a high objective probability that any of the situations making up one’s knowledge-net—one’s belief states that constitute ordinary empirical knowledge and any of the epistemically mediating events (events belonging to the causal chain that connects those belief states with their objects, or to the common cause of the states and their objects)—are caused in an epistemically appropriate normal way. (115)

The omission here of any consideration of the objects of states of knowledge is telling: for it is clear that there is nothing in reliabilism, or proper function theory, or any other contemporary epistemological theory of the kind that Koons allows in play that requires that, in order for something to be an object of knowledge for a given subject, it must be very likely that that *object* of knowledge has a cause. Suppose that the fact that *p* is uncaused. So long as my belief that *p* is caused, and there is an appropriate chain of epistemically mediating events that connects my belief that *p* to the fact that *p*, there is nothing in the kinds of contemporary epistemological theories that Koons favours that rules that it is simply out of the question that I know that *p*.

Consider the case of an ideal agent who has total empirical knowledge. Following Koons, we might suppose that such an agent will have a knowledge-net that embraces

the whole of the Cosmos (119). However, even if we suppose that the Cosmos is a causal plenum, it will still be the case that we are free to suppose that the Cosmos has a boundary, and—for all that has been argued thus far—that the boundary of the Cosmos has no cause. Moreover, and more importantly, there is nothing in the kinds of conditions on empirical knowledge to which Koons is appealing that requires us to suppose that the boundary of the Cosmos has a cause: for, plainly, the elements on the boundary of the Cosmos can only figure in our knowledge-nets as objects of knowledge. (The elements on the boundary of the Cosmos cannot be belief states that are constituents of empirical knowledge states, since—on the assumptions now in play—there cannot be empirical knowledge states without causally anterior objects; and the elements on the boundary of the Cosmos cannot be mediating states for empirical knowledge, since they are not causally posterior to anything in the Cosmos.)

If these considerations are on the right track, then the most the Koons can derive from the various assumptions that he makes is not Theorem 2, but rather something like Theorem 2\*:

**Theorem 2\*:** If S's belief that p is an ordinary empirical belief, then S knows that p only if there is some type T such that S is strongly *a priori* justified in believing that (i) it is very likely that it is nomologically impossible for situations of type T to be actual in the absence of a cause, and (ii) it is self-evident to S that nearly all of the situations in his\* empirical knowledge-net *that do not lie on the boundary of his\* empirical knowledge-net* fall within T.

### 3

Koons (1997) defends the following cosmological argument (here I follow the presentation in Koons (2008)):

**Axiom 1:** x is a part of y iff everything that overlaps x overlaps y.

**Axiom 2:** If there are any  $\phi$ 's, then there exists a sum of all of the  $\phi$ 's; for any x, x overlaps this sum iff x overlaps one of the  $\phi$ 's.

**Axiom 3:**  $x=y$  iff x is a part of y and y is a part of x.

**Axiom 4:** Situations necessitate the actual existence of their parts.

**Axiom 5:** The actual existence of all of the members of a sum necessitates the actual existence of the sum.

**Axiom 6:** Causation is a binary relation between actually existing situations.

**Axiom 7:** Causes and effects do not overlap (i.e. have no parts in common).

**Axiom 8:** For any given wholly contingent situation x, there is a (defeasible) presumption that x has a cause

**Theorem:** If there are any contingently existing situations, then there is a necessarily existing situation that is the cause of the Cosmos, i.e. of the sum of all wholly contingent situations.

For present purposes, the key feature of this argument is Axiom 8. Setting aside considerations about defeasibility, this axiom amounts to the following assumption about causality:

**Cause 0:** All wholly contingent situations have causes.

As Koons (2008) notes, there are many alternative causal principles that might be proposed which are such that, when we add back in the considerations about defeasibility, and insert them into the above argument in place of Axiom 8, will not permit the derivation of the Theorem. In particular, Koons mentions all of the following principles, which he claims to be unacceptable as general principles of causation:

- Cause 1:** All non-first situations have causes.
- Cause 2:** All situations with finite temporal duration have causes.
- Cause 3:** All situations that don't occur at a first moment of time have causes.
- Cause 4:** All situations that don't include temporal regresses have causes.
- Cause 5:** All situations that aren't both extremely simple and cosmic in scale have causes.
- Cause 6:** All situations that could (*de re*) be caused have causes.
- Cause 7:** All situations that could possible have wholly contingent causes have causes.

Moreover, Koons also mentions the following principles, which he claims to be acceptable as general principles of causation, and which he claims are such that, when we add back in considerations about defeasibility, will permit the derivation of the Theorem if inserted into the above argument in place of Axiom 8:

- Cause 8:** All situations that are composed of parts, for each of which it is metaphysically possible that there exists a situation that approximately duplicates it and has a cause, have causes
- Cause 9:** All situations that are natural—i.e., occurring in space and time, or involving finite powers and dispositions—or that involve acts or states of consciousness that are finitary in content, or that involve acts or states of consciousness that are composed of parts that are finitary in content, have causes.
- Cause 10:** All situations that do not involve metaphysically simple acts of consciousness with infinitely rich content, have causes.

Before he tries to use his Theorem 2 to separate the sheep from the goats, Koons gives a list of what he takes to be criteria of acceptability of principles of general causation. These criteria are as follows:

- Criterion 1:** If one is *strongly a priori* justified in believing that one's knowledge-net falls within the range of application of a principle of general causation, then it is metaphysically necessary that any knowledge-net of any person with humanoid consciousness falls within the same range.
- Criterion 2:** It must be plausible to suppose that it is self-evident that the range of application of a principle of general causation encompasses our knowledge-nets.
- Criterion 3:** An epistemologically acceptable principle of general causation must be one whose range of application specifies a set of intrinsic properties of situations.
- Criterion 4:** If belief in a principle of general causation is to be *strongly a priori* justified, then the boundaries of the range of application of that principle must be non-arbitrary and metrically isolated.

**Criterion 5:** The range of application of a principle of general causation must be closed under proper parthood.

**Criterion 6:** An epistemically acceptable principle of general causation must be sensitive to the fact that human cognition includes an open-ended, highly general form of abductive inference.

Given these criteria, and given his Theorem 2, Koons undertakes to show that none of Cause 1 through Cause 7 is an acceptable principle of general causation, while each of Cause 8 through Cause 10—and, I guess, also Cause 0—is an acceptable principle of general causation.

#### 4

Here is Koons' argument against Cause 1:

How could I be SAP justified in believing that my current belief-state is a non-first situation? In order to do so, I would have to know that there were situations that preceded my current belief-state in time, but my knowledge of the past consists entirely in ordinary empirical beliefs (including memory and testimony), all of which presuppose (as I have argued) belief in the applicability of the causal principle to my current belief state. Hence we cannot have a non-circular justification of immunity to defeat relying on [Cause 1]. (124/5)

What Koons has in mind here is, I think, this. In order to satisfy the demands of his Theorem 2, it has to be the case that one is strongly *a priori* justified in believing that it is self-evident that nearly all of the situations in one's empirical knowledge-net are non-first situations. Hence, in particular, it has to be the case that one is strongly *a priori* justified in believing that it is self-evident that one's current belief state is a non-first situation. Or, more simply, it has to be the case that one is strongly *a priori* justified in believing that one's current belief state is a non-first situation. But if one is strongly *a priori* justified in believing that one's current belief state is a non-first situation, then one is strongly *a priori* justified in believing that there have been situations that have preceded one's current belief state. However, on Koons' account, one is not strongly *a priori* justified in believing that there have been situations that have preceded one's current belief state: one's belief that there have been situations that have preceded one's current belief state necessarily rests exclusively upon ordinary empirical beliefs—memory, testimony, and the like—all of which presuppose that there have been situations that have preceded one's current belief state. So Cause 1 fails to meet the demands of Theorem 2.

It is clear where our criticism of this argument will begin. As we argued above, Theorem 2 is not supported by the considerations that Koons advances on its behalf. The most that we get from the considerations that Koons advances is Theorem 2\*. But, in order to satisfy the demands of Theorem 2\*, it only needs to be the case that one is strongly *a priori* justified in believing that it is self-evident that nearly all of the situations in one\*'s knowledge-net that do not lie on the boundary of one's empirical knowledge net are non-first situations. And, of course, this is true: in fact, one is strongly *a priori* justified in believing that it is self-evident that *all* of the situations in one\*'s knowledge net that do not lie on the boundary of that net are non-boundary

situations. So, of course, Cause 1 does succeed in meeting the demands of Theorem 2\*.

Of course, even if Cause 1 does succeed in meeting the demands of Theorem 2\*, that does not entail that Cause 1 is an epistemologically acceptable principle of general causation. For all that we have argued thus far, it may be that there is some other way in which Theorem 2 can be established. Moreover, for all that we have argued thus far, there may be some other way in which we can argue directly that Cause 1 is not an epistemologically acceptable principle of general causation. All that we have argued, thus far, is that Koons has failed to establish that there is something unacceptable about Cause 1.

But we can do more. Suppose that we accept Cause 0—i.e., suppose we accept Koons' claim that all wholly contingent events have causes. Does it follow from my acceptance of Cause 0 that I am strongly *a priori* justified in rejecting the claim that my current belief state was directly caused by a fallen angel? We suppose that the God of theism exists, and that the God of theism created angels with the capacity to make independent domains of contingently existing things. One of these angels has rebelled, and has chosen to make an independent domain of contingently existing things in which my current belief state is an initial state, i.e. a state that is not preceded by other elements in that independent domain of contingently existing things. Since Cause 0 is clearly satisfied in this scenario, it cannot be that acceptance of Cause 0 justifies the assignment of a low probability to the claim that my current belief state was directly caused by a fallen angel. But then, by Koons' lights, how could I be strongly *a priori* justified in rejecting the claim that my current belief state was directly caused by a fallen angel?

Perhaps Koons might try to argue that we are strongly *a priori* justified in believing that the God of theism could not make an angel with the capacity to make independent domains of contingently existing things. But that looks highly implausible. On the one hand, the God of theism is omnipotent: it can't be that God is unable to make such an angel because God lacks the power or ability to do so. On the other hand, even though the God of theism is perfectly good, theists will typically find it hard to deny that the goodness of the God of theism is consistent with the creation, by that God, of creatures that are free with respect to decisions that have very significant consequences. For these reasons, it seems that theists will typically not even be justified in believe that the God of theism could not make an angel with the capacity to make independent domains of contingently existing things, let alone strongly *a priori* justified in so believing.

However, if we grant that the God of theism could make an angel with the capacity to make independent domains of contingently existing things, then how can one rule out the possibility that one's current belief state was created directly by a fallen angel? In order to establish that one's current belief state is not an initial state of a 'natural' world, one would need to show that there were situations that preceded one's current belief-state in time. But, on Koons' own reckoning, 'my knowledge of the past consists entirely in ordinary empirical beliefs (including memory and testimony), all of which presuppose ... belief in the applicability of the causal principle to my current belief state'. So, on Koons' own reckoning, it seems, we cannot have a non-circular justification of immunity to defeat relying on Cause 0.

If the argument of the last two paragraphs is granted, then it seems that we can conclude that the kind of argument that Koons' makes against Cause 1 can be repackaged to knock out almost any principle of general causation. In particular, it is obvious that the same kind of consideration will extend to Cause 9 and Cause 10: if the argument that Koons makes against Cause 1 is good, then the same kind of argument that we have made against Cause 0 will knock out those causal principles as well.

## 5

I think that it is natural to suppose that, given the framework that he develops earlier in the paper, Koons' argument against Cause 1 goes wrong in supposing that 'knowledge of the past consists *entirely* in ordinary empirical beliefs—including memory and testimony—all of which presuppose belief in the applicability of the causal principle to current belief states'. What is required to defeat the hypothesis *that* my current belief state is a first situation—i.e. that my current belief state is a situation that does not have a natural or empirical past—is justified belief *that* there have been natural or empirical situations prior to my current belief state. But it seems to me that the very reasons that Koons gives for believing that one is strongly *a priori* justified in believing that nearly all of the situations in one's empirical knowledge-net have causes extend to reasons for believing that one is strongly justified in believing that there have been natural or empirical situations prior to one's current belief state.

Before I can explain why I suppose that this is so, I need to make some preliminary observations about knowledge-nets and belief-nets. As we noted earlier, Koons takes knowledge-nets to have three kinds of constituents: for a given subject S, the knowledge-net for S consists of (i) all of the belief states that p for which it is true that S knows that p, (ii) all of the situations that p for which it is true that S knows that p, and (iii) all of the situations that causally mediate between the situation that p and S's belief that p in cases in which S knows that p<sup>4</sup>. Thus, a knowledge-net for a given subject has two rather different parts: on the one hand, the knowledge-net contains all of the belief states of that subject that are states of knowledge; on the other hand, the knowledge-net contains a (most likely proper) part of the Cosmos that consists of (a) all the parts of the Cosmos that are objects of knowledge of the subject, and (b) all of the parts of the Cosmos that belong to appropriate kinds of chains that causally connect those objects of knowledge to the subject.

From a third-person perspective on a subject S, it is in principle easy to distinguish between those of S's beliefs that constitute knowledge (and hence that belong to S's knowledge-net), and those of S's beliefs that do not constitute knowledge (and hence that do not belong to S's knowledge-net). However, from a first-person perspective on oneself, it is more difficult to make out this distinction. True enough, if we suppose that only beliefs that are held with sufficient firmness can be knowledge, then one can identify one class of one's own beliefs that are not candidates to be knowledge. But

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<sup>4</sup> To simplify our discussion, we ignore the possibility—for which Koons makes explicit allowance—of cases in which S knows that p in which (i) there is a common cause of the situation that p and S's belief that p, and (ii) there are situations that mediate between that common cause and S's belief that p (even though there is no chain of situations that mediates between the situation that p and S's belief that p in such a way as to guarantee that S knows that p).

sensible intellectual modesty requires one to hold that, even amongst the beliefs that one holds with sufficient firmness to make them candidates for knowledge, one has some false beliefs. Yet, for any *particular* belief that one holds with sufficient firmness, it seems that one can only accept that that belief does not amount to knowledge by either reducing the firmness with which one holds that belief, or by giving it up altogether. (If I suppose that it is in doubt whether it is true that *p*, then I simply don't believe that *p*; and if I suppose that it is in doubt whether I am warranted in believing that *p*, then I simply don't believe that *p* with the kind of firmness that is required for knowledge.)

Consider the collection of my *beliefs* that I hold with the kind of firmness that is required for knowledge—my *belief-net*. By Koons' lights, it seems that he should be prepared to say that I have a strong *a priori* entitlement to the claims (i) that most of the belief in my belief-net have situations in the Cosmos as their objects, and (ii) that, where beliefs in my belief-net have situations in the Cosmos as their objects, there are situations in the Cosmos that causally mediate between my beliefs and their objects. Moreover, by Koons' lights, it seems that he should be prepared to say that, for any *particular* belief in my belief-net, I have strong *a priori* entitlement to the claims (i) that it is very likely that that belief has a situation in the Cosmos as its object, and (ii) that it is very likely that there are situations in the Cosmos that causally mediate between that belief and the corresponding situation.

If it is true that one has strong *a priori* entitlement to the claims (i) that it is very likely that any particular belief in one's belief-net has a situation in the Cosmos as its object, and (ii) that it is very likely that there are situations in the Cosmos that causally mediate between any particular belief in one's belief-net and the situation that is the object of that belief, *then* it seems plausible to suppose that it is also true that one has strong *a priori* entitlement to the claim that the 'interior' of the Cosmos is (very close to) a causal plenum. (How could it be true, for any particular belief in one's belief net, that it is very likely that there are situations in the Cosmos that causally mediate between that belief and the situation that is the object of that belief if there are many situations in the 'interior' of the Cosmos that do not have causes? How could it be true, for any particular belief in the belief net of any rational agent, that that rational agent is strongly *a priori* entitled to the belief that it is very likely that there are situations in the Cosmos that causally mediate between the particular belief held by that agent and the situation that is the object of that belief if there are many situations in the 'interior' of the Cosmos that do not have causes?)

Suppose that I believe that I had Weetbix and vegemite on toast for breakfast last Friday, and that I believe this with the kind of firmness that is necessary for knowledge. In particular, suppose that I take myself to remember having had Weetbix and vegemite on toast for breakfast last Friday: I vividly recall getting the cereal packet and bread from the cupboard and the milk from the fridge, and so on. Then, by the principles introduced in the preceding two paragraphs, I shall be entitled to the belief that it is very likely that I did have Weetbix and toast for breakfast last Friday, and to the belief that it is very likely that there is a causal chain leading from my having Weetbix and toast for breakfast last Friday to my currently believing that I had Weetbix and vegemite on toast for breakfast last Friday. But, if I'm entitled to believe that I had Weetbix and toast for breakfast last Friday, then I'm entitled to reject the

suggestion that history begins with the present moment, i.e. I'm entitled to believe that my current belief-state is a non-first situation.

Can Koons object that this justification of the belief that one's current belief state is a non-first situation is circular: is he entitled to say—as, at least *inter alia*, he does—that one can only justifiably believe that one had Weetbix and vegemite on toast for breakfast last Friday if one is strongly *a priori* justified in holding the belief that one's current belief-state is a non-first situation? I don't think so. Imagine the first moment of the existence of a fully rational agent that has not yet had any experiences, and that is not endowed with any misleading apparent memories of previous experiences, but which has the capacity to perceive the world, and to form memories of previous experiences. At the first moment of its existence, this creature will have no view about the extent of the past: it has had no experiences, and it has no apparent memories of earlier experiences, so it has no data that it could use in the framing of any such view. Suppose, however, that, in its first moment of existence, this creature begins to perceive its environment: it receives initial sensory impressions, etc. Suppose, further, that, having received initial sensory impressions in its first moment of existence, the creature begins to process these impressions, and to store the results of that processing in memory. At *all* subsequent moments of its existence, this creature will be justified in believing that those moments are not the first moment of its existence provided only that it is justified in relying on the results of the memory-processing that is activated by its initial experiences. While we may grant to Koons that *part* of the justification for relying on the results of the memory-processing that is activated by initial experience lies in one's strong *a priori* entitlement to the claims (i) that it is very likely that any particular belief in one's belief-net has a situation in the Cosmos as its object, and (ii) that it is very likely that there are situations in the Cosmos that causally mediate between any particular belief in one's belief-net and the situation that is the object of that belief, we should also insist that *another* part of the justification for relying on the results of the memory-processing that is activated by initial experience lies in one's strong *a priori* entitlement, in the absence of *rebutting* defeaters, to treat one's apparent memories of one's earlier experiential states as veridical.

If Koons doesn't accept some version of the claim that one has strong *a priori* entitlement, in the absence of *rebutting* defeaters, to treat one's apparent memories and one's apparent perceptions of external objects as veridical, then it is hard to see how he can avoid the sceptical conclusion that rational agents have no way of neutralising sceptical hypotheses in which there is deviant causation of apparent memories and apparent perceptions of an external world. Strong *a priori* entitlement to a causal principle may suffice to defeat sceptical hypotheses about the *absence* of causes of belief states or the *absence* of appropriate causal connections between belief states and parts of the external world, but that kind of entitlement alone plainly won't suffice to defeat sceptical hypotheses about *deviant* causes of belief states or *deviant* causal connections between belief states and parts of the external world. Similarly, while strong *a priori* entitlement to a causal principle may suffice to defeat sceptical hypotheses about the absence of causes of belief states or the absence of appropriate causal connections between belief states and parts of the external world, that kind of entitlement alone plainly won't suffice to defeat sceptical hypotheses about *mismatches* between the contents of belief states held with sufficient firmness to be candidates for knowledge and the external world. In short: it is just a mistake to

suppose that appeal to a principle of general causation can suffice to defeat all sceptical hypotheses about the correspondence of the Cosmos to one's memories and perceptions.

Suppose that Koons grants that, when one is confronted with a sceptical hypothesis that entails that one's apparent memories are all *merely* apparent, considerations about the presence of causes for those apparent memories will not suffice to enable one to reject that sceptical hypothesis. Since it is clear that the hypothesis that one's current belief-state is a first situation is a sceptical hypothesis that entails that one's apparent memories are all merely apparent, Koons will then have to grant that the hypothesis that one's current belief state is a first situation cannot be defeated by appeal to a principle of general causation. But, if that's right, then it is no objection to Cause 1 to observe that one cannot defeat the hypothesis that one's current belief state is a first situation by appeal to Cause 1.

## 6

If the argument of the preceding section is correct, then it establishes that Koons has not managed to show that we could not be 'strongly *a priori* justified in believing that nearly all of our knowledge-net falls within the range of application' of Cause 1. Moreover, if the argument of the preceding section is correct, then it can be readily adapted to establish that Koons has not managed to show that we could not be 'strongly *a priori* justified in believing that nearly all of our knowledge-net falls within the range of application' of others amongst the principles of general causation that he deems unacceptable. Thus, I think, if the argument of the preceding section is correct, we can see that Koons' attempt to provide epistemological foundations for the cosmological argument fails on its own terms: even if we grant the many assumptions that Koons needs in order to argue for his Theorem 2, we still have good reason to insist that it is entirely understandable that his favoured principle of general causation 'has failed to win universal acceptance' (105).

Of course, there is much else in Koons' paper that merits comment. For instance, I have said nothing here concerning his criteria for acceptability of proposed principles of general causation. Any such comment will need to wait for some other occasion.

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