Higher-Order Ontological Arguments

Abstract: This paper discusses recent work on higher order ontological arguments, including work on arguments due to Gödel, Maydole and Pruss. After setting out a range of these arguments, the paper seeks to highlight the principal difficulties that these kinds of arguments confront. One important aim of the paper is to cast light on Gödel's ontological argument by way of an examination of a range of related higher-order arguments.

Suppose that there is a necessarily existent, necessarily omnipotent, necessarily omniscient, and necessarily perfectly good being that created the world *ex nihilo*. Call this being 'God'.

If God exists, then, on plausible metaphysical assumptions, there will be a collection of properties—'God's essential properties'—that God possesses of necessity. These properties will include existence, necessary existence, omnipotence, necessary omnipotence, omniscience, necessary omniscience, perfect goodness and necessary perfect goodness, but—on plausible assumptions—will not include the property of being the creator of a world *ex nihilo*. (If you think that God did not act with libertarian freedom in creating our world *ex nihilo*, then—at least on plausible assumptions—you will probably be able to point to other properties that God possesses only contingently. Alternatively, you might think—though this is hardly a mainstream view—that there is no property that God possesses that is not one of God's essential properties.)

We shall say that one property *entails* a second just in case it is necessarily true that anything that possesses the first property also possesses the second property. Moreover, we shall say that a collection of properties *entails* a further property just in case it is necessarily true that anything that possesses all of the properties in the collection also possesses the further property

It is clear that, if God exists, then the collection of God's essential properties is non-trivially closed under entailment: any property that is entailed by some collection of God's essential properties is, itself, one of God's essential properties, and there are properties that fail to belong to the collection of God's essential properties (e.g. the property of not being omnipotent).

Perhaps a little more surprisingly, it is also true that, if the collection of God's essential properties is non-trivially closed under entailment, then God exists. That is, if we suppose that God's essential properties form a collection that includes necessary existence, necessary omnipotence, necessary omniscience, and necessary perfect goodness, and if we suppose further that (a) this collection of properties is closed under entailment and (b) this collection of properties does not include *all* properties, then we can conclude that God exists.

How so? Suppose, as hypothesis for *reductio*, that it is impossible for there to be something that possesses all of God's essential properties. Then it follows that,

necessarily, anything that possesses all of God's essential properties other than omnipotence possesses the property of not being omnipotent. Hence, it follows that necessarily, anything that possesses all of God's essential properties possesses both the property of being omnipotent and the property of not being omnipotent. But the properties of being omnipotent and not being omnipotent jointly entail all properties. So, given—by (a)—that the collection of God's properties are closed under entailment, it follows—contrary to (b)—that *every* property is one of God's essential properties. Contradiction!

Consequently, we can conclude that it is possible for there to be something that possesses all of God's essential properties. But, of course, if it is possible that there is something that is necessarily existent, necessarily omnipotent, necessarily omniscient, necessarily perfectly good, and so forth, then it is the case that there is something that is necessarily existent, necessarily omnipotent, necessarily omniscient, necessarily perfectly good, and so forth. Moreover, so long as at least one of God's essential properties can be exemplified at most once—as, for example, if we suppose that one of God's essential properties is the property of necessarily being the only thing that is omnipotent, omniscient and perfectly good—we then get out the conclusion that there is exactly one thing that is necessarily existent, necessarily omnipotent, necessarily omniscient, necessarily perfectly good, and so forth: God!

Should we think that we have here a *successful* proof of the existence of God, or, at any rate, something that can be readily converted into a successful proof of the existence of God? Some recent authors have thought so. We begin by examining recent expositions of higher-order ontological arguments that can profitably be taken to be versions of the above line of thought. We then turn to an examination of the difficulties that arise for the claim that these kinds of arguments are successful proofs of the existence of God.

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There has recently been quite a bit of discussion of an argument that Gödel recorded in his notebooks (Gödel 1995), but which was only published after his death. (See, for example: Adams (1995), Hazen (1998), Sobel (1987).) There are various different versions of Gödel's argument, produced in order to overcome technical difficulties in Gödel's original formulation. We here recall the version of the argument developed in Anderson (1990):

Definition 1:	x is God-like iff x has as essential properties those and only those properties that are positive
Definition 2:	A is an essence of x iff for every property B, x has B necessarily iff A entails B
Definition 3:	x necessarily exists iff every essence of x is necessarily exemplified
Axiom 1:	If a property is positive, then its negation is not positive
Axiom 2:	Any property entailed by a positive property is positive
Axiom 3:	The property of being God-like is positive
Axiom 4:	If a property is positive, then it is necessarily positive.

Axiom 5:   Necessary existence is positive
Theorem: Necessarily, the property of being God-like is exemplified.

In Gödel's original argument, the notion of a 'positive' property is taken to be primitive, though Gödel himself suggested that this notion might perhaps be understood as 'positive in the moral aesthetic sense (independently of the accidental structure of the world)' or perhaps as 'pure "attribution" as opposed to "privation"'.

Maydole (2003) presents an ontological argument that works formally with two primitive notions: the higher-order property of *being a perfection*, and the first-order property of *being greater than*. Informally, Maydole claims that a perfection is *a property that it is better to have than not*, where this further notion is primitive and unexplained. Maydole's argument may be set out as follows:

Definition: x is supreme iff necessarily, x is greater than all other beings
Axiom 1:   If a property is a perfection, then the negation of that property is not a perfection.
Axiom 2:   Any property that is entailed by a perfection is also a perfection.
Axiom 3:   Supremity is a perfection.
Theorem: There is exactly one supreme being.

While it is not immediately evident that the unique supreme being is God, it is at least *prima facie* plausible to suppose that a supreme being would be necessarily existent, necessarily omnipotent, necessarily omniscient, and necessarily perfectly good.

Pruss (2008) develops a range of ontological arguments. The core of his presentation is the following argument:

Definition 1: x has *necessary existence* iff there is some property such that it is necessary that x has that property, and it is necessary that something has that property, and it is necessary that anything that has that property is identical to x.
Definition 2: A property is *strongly positive* iff it is necessary that having A essentially is a positive property
Axiom 1:   If A is positive, then ~A is not positive.
Axiom 2:   If A is positive, and A entails B, then B is positive.
Axiom 3:   Necessary existence is positive.
Theorem 1:   If A is any strongly positive property, then there exists a being that exists necessarily and that has A essentially.

Given the for-going definitions and axioms, we need only one more axiom in order to get out an interesting conclusion:

Axiom 4:   Each of the properties of essential omnipotence, essential omniscience and essential perfect goodness is positive.

Theorem 2:   There is an essentially omnipotent being, there is an essentially omniscient being, and there is an essentially perfectly good being.

Different additional axioms—in place of Axiom 4—yield different interesting conclusions:

Axiom 5:   The property of having all strongly positive properties is a positive property.

Theorem 3:   There is a necessary being that essentially has all strongly positive properties.

Axiom 6:   If A and B are strongly positive and compossible, then their conjunction is positive.

Theorem 4:   If U is any finite set of strongly positive properties, then there is a necessary being that essentially has every member of U.

Finally, using as additional axioms *both* Axiom 4 and Axiom 6, we get:

Theorem 5:   There is a necessary being that is essentially omniscient, essentially omnipotent, and essentially perfectly good.

Pruss suggests that the notion of 'positive' property might plausibly be given a range of different interpretations: in terms of excellence or greatness or value, or in terms of the absence of limitation, or in terms of entailment from a Leibnizian core of basic properties, or in terms of being better to have than not to have.

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Each of the arguments that we have just set out contains *some* version of the premise that the positive properties form a non-trivial collection, i.e. that there are some properties that are not positive properties, and *some* version of the premise that the positive properties form a collection that is closed under entailment. Depending upon the precise details of their formulation, these two premises entail at least that each positive property is possibly instantiated, and perhaps that the positive properties are possibly jointly instantiated. While it is true that the claim, that any property that is entailed by a positive property is itself a positive property, is *weaker* than the claim, that any property that is entailed by a collection of positive properties is itself a positive property, it is hard to find intuitive support for the weaker claim that is not also intuitive support for the stronger claim. Moreover, if we accept the stronger claim, then we can get immediately to the stronger conclusion: the positive properties are possibly jointly instantiated. Consequently, in order to ease exposition, I shall proceed to work with the stronger claim.

Suppose that we say a property is a God-property if it is one of the properties that God possesses essentially (or, at any rate, that God would possess essentially, were it the case that God existed). Then we could formalise the key part of the intuitive argument that was presented in the introduction to this paper as follows:

Axiom 1:   There are properties that are not God-properties.
Axiom 2:   The God-properties are closed under entailment.
Theorem 1:   It is possible that the God-properties are jointly instantiated.

Since we are supposing that the God-properties include necessary existence, necessary omnipotence, necessary omniscience and necessary perfect goodness, it is clear that someone who denies that there is an omnipotent, omniscient and perfectly good being is bound to deny the conjunction of Axiom 1 and Axiom 2: since it is not possible that the God-properties are jointly instantiated, it is not true that the God-properties form a non-trivial collection that is closed under entailment. Moreover, it seems reasonable to suggest that this observation is sufficient to cast doubt on the idea that our intuitive argument constitutes a successful argument for the existence of God. If God does not exist, then it is impossible that God exist; and if it is impossible that God exist, then there is no non-trivial collection of properties closed under entailment that constitutes 'the collection of properties that God would possess essentially were it the case that God existed'.

In itself, of course, the argument to this point does not undermine the claim that the derivations provided by Gödel, Maydole and Pruss are successful arguments for the existence of God. For, of course, those derivations do not work with the notion of a God-property; rather, they work with the notion of a positive property. While non-theists can reasonably object straight off that a derivation couched in terms of God-properties is objectionably question-begging, it is not clear that non-theists can reasonably object straight-off that a derivation couched in terms of positive properties is objectionably question-begging. In particular, if it is possible to give intuitive content to the notion of a positive property in such a way that non-theists are obliged to grant that positive properties form a non-trivial collection closed under entailment, then it seems that there would be good grounds for claiming that we do have here a successful argument for the existence of God.

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Pruss (2008) provides the sole even moderately extensive discussion of positive properties in the literature. So we begin by considering some of his suggestions for candidate interpretations of the notion of a positive property.

1. *Excellence/Greatness/Value Interpretation*: A(x) is a positive property iff necessarily, for all y, if y has A(x), then having A(x) in no way detracts from any respect of the excellence/greatness/value of y, and if y has ~A(x), then having ~A(x) does in some way detract from some respect of the excellence/greatness/value of y.

Suppose we stipulate that a negative property is a property whose negation is a positive property. Then, clearly enough, we shall have that:

A(x) is a negative property iff necessarily, for all y, if y has A(x), then having A(x) in some way detracts from some respect of the excellence/greatness/value of y, and if y has ~A(x), then having ~A(x) in no way detracts from any respect of the excellence/greatness/value of y.

Suppose that G is a positive property and that B is a negative property. Consider the disjunctive property GvB. How should GvB be classified, given the above two definitions? In particular, should we suppose that GvB is positive (as required by any of the closure under entailment axioms in the derivations under examination)?

On the one hand, necessarily, for any x, if x has ~(GvB), then x has both ~G and ~B (since these are both entailed by the property ~(GvB)). Since G is positive, the having of ~G in some ways detracts from some respect of the excellence/greatness/value of x. On the other hand, since B is negative, the having of ~B in no way detracts from any respect of the excellence/greatness/value of x. So, clearly, having the property ~(GvB) does in some way detract from some respect of the excellence/greatness/value of x. Hence we can conclude that GvB is not a negative property.

On the other hand, necessarily, for any x, if x has GvB, then either x has G alone, or x has B alone, or x has both G and B. If x has G alone—i.e. x has G and ~B—then having GvB in no way detracts from any respect of the excellence/greatness/value of x. If x has B alone—i.e. x has B and ~G—then having GvB does in some way detract from some respect of the excellence/greatness/value of x. And if x has both B and G, then having GvB does in some way detract from some respect of the excellence/greatness/value of x. Hence we can conclude that GvB is not a positive property.

Plainly, then, on the excellence/greatness/value interpretation of positive properties, closure under entailment fails for positive properties: for, while G entails GvB, given that G is a positive property, GvB is not a positive property given that B is a negative property. Moreover, this failure is not due to idiosyncratic features of Pruss's definition of positive properties under the excellence/greatness/value interpretation. Symmetry considerations alone surely require that a disjunction of a positive property and a negative property will be neither positive nor negative, even though the disjunction is entailed by each of its disjuncts. But any version of an excellence/greatness/value interpretation will provide an account of both positive and negative properties. So symmetry considerations alone will rule out the claim that the positive properties are closed under entailment on any variant of the excellence/greatness/value interpretation.

It is perhaps worth noting here that Godel's suggestion that 'positive' be interpreted 'in the moral aesthetic sense (independently of the accidental structure of the world)' also plausibly falls to this objection. If G is a positive property in the moral aesthetic sense, but B is a property which reflects the accidental structure of the world or which is not positive in the moral aesthetic sense, then it is surely not going to be the case that GvB is a positive property in the moral aesthetic sense (independently of the accidental structure of the world).

2. *Absence of Limitation Interpretation*: A(x) is a positive property iff necessarily, for all y, if y has A(x), then having A(x) in no ways entails that y is limited in any respect, and if y has ~A(x), then having ~A(x) does entail that y is limited in some respect.

Suppose we stipulate that a negative property is a property whose negation is a positive property. Given this stipulation, we have that

A(x) is a negative property iff, necessarily, for all y, if y has A(x), then having A(x) entails that y is limited in some respect, and if y has ~A(x), then having ~A(x) in no way entails that y is limited in some respect.

Suppose that U is a positive property and that L is a negative property, and consider the disjunctive property UvL. How should UvL be classified, given the above two definitions? In particular, should we suppose that UvL is positive (as required by the closure under entailment axioms in the various derivations that are under examination)?

On the one hand, necessarily, for any x, if x has ~(UvL), then x has both ~U and ~L, where ~U is a negative property and ~L is a positive property. Since having the property ~U entails that x is limited in some respect, having the property ~(UvL) entails that x is limited in some respect. Hence, we can conclude that UvL is not a negative property.

On the other hand, necessarily, for any x, if x has UvL, then either x has U alone, or x has L alone, or x has both U and L. If x has U alone—i.e. x has U and ~L—then having UvL does not in any way entail that x is limited in any respect. If x has L alone—i.e. x has ~U and L—than having UvL does in some way entail that x is limited in some respect. And if x has both L and U, then having UvL does in some way entail that x is limited in some respect. Hence, we can conclude that UvL is not a positive property.

Plainly, then, on the absence of limitation interpretation of positive properties, closure under entailment fails for positive properties: for, while U entails UvL, given that U is a positive property, UvL is not a positive property given that L is a negative property. Moreover, this failure is not due to idiosyncratic features of Pruss's definition of positive properties under the absence of limitation interpretation. Symmetry considerations alone surely require that a disjunction of a positive property and a negative property will be neither positive nor negative, even though the disjunction is entailed by each of its disjuncts. But any version of an absence of limitation interpretation will provide an account of both positive and negative properties. So symmetry considerations alone will rule out the claim that the positive properties are closed under entailment on any variant of the absence of limitation interpretation.

It is perhaps worth noting here that Godel's suggestion that 'positive' be interpreted 'in terms of "pure attribution" as opposed to "privation"' also plausibly falls to this objection. If U is a positive property in the 'pure attribution' sense, but L is a negative property in the 'privation' sense, then it is surely not going to be the case that UvL is a positive property in the 'pure attribution' sense.

3. *Better to Have than Not to Have Interpretation*: A(x) is a positive property iff necessarily, for all y, if y has A(x), then it is better that y has A(x) than it is that y fails to have A(x).

Suppose we stipulate that A(x) is a negative property iff necessarily, for all y, if y has A(x), then it is worse that h has A(x) than it is that y fails to have A(x).

Suppose that G is a positive property and that B is a negative property. Consider the disjunctive property GvB. How should GvB be classified, given the above two definitions? In particular, should we suppose that GvB is positive (as required by any of the closure under entailment axioms in the derivations under examination)?

If x has GvB then, necessarily, either x has G alone or x has B alone or x has both G and B. If x has G alone, then it is better that x has GvB than it is that x fails to have GvB. If x has B alone, then it is worse that x has GvB than it is that x fails to have GvB. If x has bother G and B, then it is unclear whether it is better or worse that x has GvB than it is that x fails to have GvB.

Plainly, then, on the 'better to have than not' interpretation, closure under entailment fails for positive properties: for, while G entails GvB, where G is a positive property, GvB is not a positive property where B is a negative property. Moreover, this result is entirely unsurprising: symmetry considerations alone suggest that, where G is positive and B is negative, GvB will be neither positive nor negative.

4. *Leibnizian Interpretation*: Suppose that there is a set of mutually compatible base properties, and count a property as positive provided that it is entailed by some collection of the base properties.

Clearly, we cannot mount the same kind of objection to this interpretation that we made against the previous interpretations: if G is a base property, then it simply falls out of the account that, for any property B, the disjunctive property GvB is also a positive property. However, it seems that the Leibnizian interpretation is subject to a different kind of criticism, viz. that it doesn't really give any content to the notion of a positive property. If we suppose that there is a non-trivial set which is closed under entailment and which contains all and only the positive properties, then [in principle] we can winnow that set down to a [not necessarily unique] minimal set of properties which jointly entail all and only the positive properties. Since this is true no matter what further interpretation we give to the notion of a positive property, it is surely clear that this approach has not succeeded in giving any substantive interpretation of that notion. Note, in particular, that the Leibnizian gambit is open to anyone who defends the God-property argument that we discussed above: if there is a non-trivial set of God-properties closed under entailment, then [in principle] we can winnow that set down to a [not necessarily unique] minimal set of properties which jointly entail all and only the God-properties. Since drawing attention to this point does not make the God-property argument any more compelling, we can

surely conclude that the Leibnizian interpretation does not convert an argument couched in terms of positive properties into an argument that non-theists ought to find compelling.

There may be other possible interpretation of the notion of a positive property. However, at the very least, the preceding discussion lays down a challenge to defenders of higher-order ontological arguments. In order to produce a successful argument couched in terms of positive properties, a minimal requirement is that one provide an interpretation of the notion of positive property on which it is independently plausible—i.e. plausible just in the light of that interpretation—that there is a non-trivial collection of such properties closed under entailment.

4

Oppy (2008) provides a version of the following parody of higher-order ontological arguments.

Definition 1: A God-free property is a property that is instantiated in all and only those worlds in which there is no necessarily existent, essentially omnipotent, essentially omniscient, and essentially perfectly good being.

Premise 1: Not all properties are God-free properties.

Premise 2: Any property entailed by a collection of God-free properties is itself a God-free property.

Premise 3: The following property is God-free: not co-existing with a necessarily existent, essentially omnipotent, essentially omniscient, and essentially perfectly good being.

Theorem 1: There is no necessarily existent, essentially omnipotent, essentially omniscient, essentially perfectly good being.

Taken together, the first two premises entail that, for any set of God-free properties, it is possible that there is some entity that instantiates all of the properties in that set. Hence, given the third premise, we have that it is possible that there is no necessarily existent, essentially omnipotent, essentially omniscient, essentially perfectly good being. But, if it is possible that there is no necessarily existent, essentially omnipotent, essentially omniscient, essentially perfectly good being, then there is no necessarily existent, essentially omnipotent, essentially omniscient, essentially perfectly good being. God does not exist!

It is interesting to compare this argument with the argument that we developed in the introduction to the present paper:

Definition 1: A God-property is a property that is possessed by God in all and only those worlds in which God exists.

Premise 1: Not all properties are God-properties

Premise 2: Any property entailed by a collection of God-properties is itself a God-property.

Premise 3:   The following properties are God-properties: necessary existence, necessary omnipotence, necessary omniscience, and necessary perfect goodness.

Theorem 1:   There is a necessarily existent, essentially omnipotent, essentially omniscient, essentially perfectly good being.

It seems pretty clear that we have good reason to say that neither of these arguments is successful; and, moreover, that we have good reason to say that no tweaking of arguments couched in terms of God-properties and God-free properties will turn them into successful arguments.

The hope of those who have propounded higher order ontological arguments is that related arguments couched in terms of 'positive' properties might be more successful. At the end of the previous section, we did not rule out the possibility that there might be a successful argument of this kind. Here, we observe that we might extend similar hope to those who wish to couch higher-order ontological arguments against the existence of God in terms of something like 'natural' properties.

On the one hand, we have an argument for the existence of God:

Premise 1:   Not all properties are positive properties.

Premise 2:   Any property entailed by a collection of positive properties is positive.

Premise 3:   The property of being necessarily existent, essentially omnipotent, essentially omniscient, and essentially perfectly good is positive.

Theorem 1:   God exists.

On the other hand, we have an argument against the existence of God:

Premise 1:   Not all properties are natural properties.

Premise 2:   Any property entailed by a collection of natural properties is natural.

Premise 3:   The property of being not co-existent with a necessarily existent, essentially omnipotent, essentially omniscient, and essentially perfectly good being is natural.

Theorem 1:   God does not exist.

While I offer no further argument against the possibility that one of these arguments might have an interpretation under which it is successful, it does seem to me rather hard to believe that there are any such interpretations.

5

One final point. At various places in the earlier discussion, I have noted that opponents of an argument might object to the conjunction of a pair of premises, and yet I have not gone on to discuss the truth-status of the premises considered individually. But, surely, if one has an objection to a pair of premises, then one is committed to the denial of at least

one of those premises considered individually. Why, then, have I not gone on to discuss reasons why at least one of these premises might be rejected individually?

The short answer to this question is that consideration of reasons for rejecting at least one of these premises individually depends upon a prior discussion into which we have not yet entered.

Suppose you think that God does not exist, and hence that it is impossible that God exists. Given that this is what you think, you are committed to the claim that there is no non-trivial collection of properties closed under entailment that constitutes the collection of essential properties that God would have had, were it possible that God existed.

When we wrote down our intuitive proof of the existence of God, we couched it in terms of the notion of a 'God-property'. But, in view of the above considerations, it seems that we might say that this expression is empty, or ill-defined: there is no such thing as a 'God-property'. But, if that's right, then Axiom 1 is perhaps trivially true—since no properties are God-properties—while Axiom 2 is plausibly false (at least on a Russellian account of definite descriptions). However, on this approach, the question of the truth-status of the premises considered individually is not particularly interesting.

On an alternative approach, we might say that the expression 'God-property' has a kind of 'ostensive' definition: 'God-properties' include such properties as necessary existence, necessary omnipotence, necessary omniscience, necessary perfect goodness, and the like. Of course, we don't have a complete canonical list of the God-properties, but we do have a fair idea how to add many further properties to this list. Moreover, on this approach, we can also make the beginnings of a list of properties that are certainly not 'God-properties': e.g., contingent existence, partial ignorance, partial impotence, moral indifference, and so forth. If we suppose that an account of 'God-properties' has to preserve both intuitions (or traditional judgments, or whatever) about what are, and about what are not, 'God-properties', then it looks as though we will again be required to deny Axiom 2 while accepting Axiom 1.

On yet another approach, we might say that, whatever else is true of the 'God-properties', it has to be true that any properties that are entailed by a standard traditional collection of 'God-properties'—e.g. necessary existence, necessary omnipotence, necessary omniscience, necessary perfect goodness—are 'God-properties'. But, in that case, if it is true there it is impossible for there to be a necessarily existence, necessarily omnipotent, necessarily omniscient, and necessarily perfectly good being, then it just follows that Axiom 1 is false, because any necessarily uninstantiated property (or collection of properties) entails every other property. On this approach, we might also suppose that we have reason to deny Axiom 2, but there is no evident reason why we should be required to do so.

We have not exhausted the full range of relevant views that might be considered here. However, though there is much more that might be added to this discussion, I hope that the above suffices to explain why, in this case, it may not be particularly profitable to

insist on asking which particular premises of these arguments opponents should suppose to be false.

One interesting question that we have not taken up is the possibility that one might try to develop a higher-order ontological argument while making use of a *sparse* conception of properties. Throughout our discussion, we have assumed—in common with Gödel, Maydole and Pruss—that every predicate expresses a property. Giving up that assumption would certainly cast a different light on the discussion of possible interpretations of the notion of a positive property. However, it seems worth noting that, on well-known accounts on which there are few predicates that express properties, it plausibly turns out that '… is necessarily existent' fails to express a property. So, at the very least, anyone who wishes to construct a higher-order ontological argument that makes use of a sparse conception of properties has some work to do. While we cannot simply rule out the suggestion, that someone will identify a sparse conception of properties on which necessary existence, necessary omnipotence, necessary omniscience, necessary perfect goodness, and so forth, turn out to be properties, and then make plausible use of that conception in the construction of a higher-order ontological argument, we do not presently have any reason to suppose that successful execution of this task is in the offing.

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