A Modal-Ontological Argument and Leibniz's View of Possible Worlds

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Abstract

We critically discuss an ontological argument that purports to prove not only that God, or a God-like being, exists, but in addition that God's existence is necessary. This requires turning to a modal logic, $S5$ in particular, in which the argument is presented. We explain why the argument fails. We then attempt a second version in which one of its premises is strengthened. That attempt also fails because of its use of the Carnap-Barcan formula in a context in which that formula is not valid. A third is presented as well using the proper name 'God' as a singular term, but it too fails for the same reason, though in a later section we show how this last argument can be validated under a re-interpretation of the quantifiers of the background logic. In our later sections, we explain what is wrong with the original first premise as a representation of what Leibniz meant by the consistency of God's existence, specifically as God's existence in a possible world. Possible worlds exist only as ideas in God's mind, and the consistency of God's existence cannot be God's existence in a possible world. Realism regarding possible worlds must be rejected. Only our world is real, the result of an ontological act of creation. We also explain in a related matter why according to Leibniz, Boethius, Aquinas and other medieval philosophers, God's omniscience does not imply fatalism.

The classical ontological arguments of Anselm and Descartes were attempts to prove that God exists. Leibniz went a step further and tried to prove not only that God exists, but also that God exists necessarily. An argument for such a conclusion would need to be framed within a modal logic. Leibniz, unfortunately did not have the tools of modern logic, including especially those of modern modal logic. Today, we have a number of different modal logics, but we will restrict our discussion here to first-order $S5$ with identity. We will first consider a modal argument proposed by Charles Pigden, who began with a premise of Leibniz's, namely that God's existence is consistent, and which Leibniz tried to defend in a separate argument.[1] Pigden accepted this premise and represented it in modal logic as God's existence being possible, except that instead of using the name 'God' as a singular term, Pigdon assumed that a God-like being is possible, in symbols $\Diamond(\exists x)G(x)$, where the predicate G is read as

[1] Pigdon described his argument in a 1997 posting in the (now defunct) online discussion group Russell-l.

'is God-like'.[2] We discuss Pigdon's argument below and explain why it does not work in quite the way it was intended. We also construct two related arguments, one with 'God' as a singular term; but these arguments fail as well. In section 4 we explain why Pigdon's first premise is fallacious and does not really represent what Leibniz meant by the consistency of God's existence. In section 5, we give a different interpretation of the quantifiers so as to cover abstract and divine entities as transcendent objects, and show how an argument with 'God' as a singular term can be validated. Finally, we also examine a fatalist argument based on a fallacy similar to the fallacy of representing Leibniz's view of the consistency of God's existence as God's existence in a possible world.

1 A Modal-Ontological Argument

The modal argument Pigdon proposed was not just to prove that God exists, but in addition to prove that God necessarily exist. As just expressed, the claim, at least in modal logic as we will see, is really a conjunction of two sub-claims, namely (1) that God exists, and (2) that God's existence is necessary. In English we just say 'God necessarily exists' or 'Necessarily God exists', and that seems to suffice for both parts of the claim. But that is because we make an implicit assumption in how we use a name like 'God', specifically that the name denotes the same entity through different times and different possible worlds. That implicit assumption requires a certain formula in modal logic stipulating that the name is a "rigid designator", which to add as a premise, would simply beg the question at issue.[3] Pigdon avoids this issue by not using the name 'God', but by using the predicate G for being God-like. This change, however, may mislead us in how the conclusion of the argument is to be formally represented.

As we explain below, Pigdon's original argument is valid in first-order $S5$, but it does not prove the necessary existence of a God-like being; that is, again to emphasize the implicit conjunction involved, it does not prove (1) the existence of a God-like being and (2) that that being's existence is necessary. It was this sort of conclusion that was what Leibniz wanted to prove, and which was what Pigdon claimed he was attempting to defend.

As indicated, the logical framework that we start with is standard first-order modal logic $S5$ with identity. Semantically, the first-order quantifiers are assumed to quantify only over the objects that exist in a given possible world (of a system of possible worlds). We also assume that different possible worlds will in general consist of different objects that exist in those worlds, i.e., there is no one fixed domain of objects. Pigden's modal ontological argument is as follows:

(1) Possibly there exists a God-like thing: $\Diamond(\exists x)G(x)$.

[2] Pigdon explained his premise as representing Leibniz's view in a later posting of 11-22-97 to the Russell-l group.

[3] The stipulation would be $(\exists x)\Box(God = x)$, which in modal logic clearly implies that God exists.

(2) Necessarily, if there exists a God-like thing, then necessarily there exists a God-like thing, in symbols

$$\Box[(\exists x)G(x) \longrightarrow \Box(\exists x)G(x)].$$

Therefore, necessarily there exists a God-like thing, i.e.,
conclusion: $\Box(\exists x)G(x)$.[4]

We understand Pigden's first premise here, i.e., premise (1), as stating in formal symbolic terms (of the object language) that a God-like being is possible, or in more metaphysical terms that a God-like being exists in some possible world. This is how Pigdon represented Leibniz's view that the existence of God is consistent. We will take up a philosophical discussion of this claim—or really the related claim that the existence of God is possible—later in section 5. Premise (2) has a different problematic, which we will take up in section 2 below. For now, let us note that the conclusion does not show that there exists (in our world) a necessary God-like being, i.e., $(\exists x)\Box G(x)$, where the existential quantifier comes before $\Box$ and not after. Nor does the conclusion exclude the possibility of polytheism, i.e., the existence of many God-like beings in any given possible world. And it allows that any God-like being that exists in one possible world need not also exist in any other possible world, and hence that none need necessarily exist. These are all deficiencies of the argument—at least as a reconstruction of Leibniz's view.

Note that even if we modify Pigden's argument by replacing the clause "there exists a God-like thing" in (1) and (2) by "there exists exactly one God-like thing", so as to get monotheism and exclude polytheism, all that follows is that in each possible world there exists exactly one God-like thing—where the God-like thing that exists in one world need not necessarily be the same as the God-like thing that exists in any other possible world, and hence that none need necessarily exist.

Now let us be clear: what Leibniz claimed, and what the argument does not show, is that there exists a God-like being that necessarily exists, i.e., in symbols $(\exists x)\Box[G(x) \wedge (\exists y)(x = y)]$, which requires a free logic, i.e., a logic free of existential presuppositions.[5] The point of requiring $(\exists y)(x = y)$ (and hence a free logic) as part of the condition that is necessary is that different worlds will in general consist of different objects, so that it is logically possible that there is an existent being x in our world that in some possible world does not

[4] Proof: because $\Box[(\exists x)G(x) \longrightarrow \Box(\exists x)G(x)]$
$\rightarrow [\Diamond(\exists x)G(x) \longrightarrow \Diamond\Box(\exists x)G(x)]$ is provable in $S5$, then by premises (1) and (2) and modus ponens, $\Diamond\Box(\exists x)G(x)$ follows. But because $\Diamond\Box(\exists x)G(x) \longrightarrow \Box(\exists x)G(x)$ is also provable in $S5$ (and in fact is an instance of the distinctive axiom schema of $S5$), the conclusion $\Box(\exists x)G(x)$ then follows.

[5] In free logic $(\exists y)(x = y)$ is not provable with y free. In standard first-order modal logic, on the other hand, $(\exists y)(x = y)$ is provable, and therefore by modal generalization, so is $\Box(\exists y)(x = y)$, and consequently, by exstential generalization, so is $(\exists x)\Box(\exists y)(x = y)$. In "free" logic neither universal instantiation nor existential generalization are valid without qualification, specifically the qualification that the singular term we are instantiating to, or generalizing from, is a "rigid designator".

exist (in that world) but nevertheless falls under the concept G in that world, i.e., $G(x)$ is true in that other world even though x does not exist in that world. (G, e.g., might be a vacuous concept such as being self-identical.[6]) What our formula stipulates is that there is an object x such that *in every possible world* x is both God-like and exists.[7]

If we assume that being God-like implies existence, i.e., that

$$\Box(\forall x)[G(x) \rightarrow (\exists y)(x = y)]$$

is analytically true in virtue of the meaning of being God-like, then we need to both justify this assumption and add it as another premise to Pigden's argument. That being God-like (or being perfect) implies existence was certainly an assumption common in medieval times, and was even assumed by Descartes in his version of the ontological argument.[8] Nevertheless, even with this added as another premise, Pigdon's argument still allows for polytheism unless we add a uniqueness condition for being God-like as well.

2 On Being God-like Being Necessarily God-like

Let us turn now to premise (2), which states as a necessity that if some being is God-like, then necessarily some being is God-like. There is something odd about this premise, and one way to see this oddness is to compare it with a slightly stronger assumption. The stronger assumption we have in mind is the thesis that necessarily if a being is god-like, then it (that same being) is necessarily God-like. A thing can be God-like, in other words, only by necessity, in symbols, $\Box(\forall x)[G(x) \longrightarrow \Box G(x)]$. This assumption seems to be the real basis for allowing premise (2) above, i.e., the necessity of: if something is God-like then necessarily something is God-like, in symbols, $\Box[(\exists x)G(x) \longrightarrow \Box(\exists x)G(x)]$. Otherwise, how is premise (2) to be justified? We certainly cannot accept the alternative that if something is God-like, then necessarily some *other* thing is God-like, which possibility is exactly in what the oddness of Pigdon's premise (2) consists. It must be the same thing, in other words.

Let us replace premise (2) by this stronger assumption that being God-like implies being necessarily God-like, which we will call (2′). To be sure, (2′) makes a very strong claim and comes close, given premise (1), to begging the question. It certainly begs the question about the *necessity* of God's existence by simply

[6] We are concerned here with logical validity, so we should think of G as a schema letter having no particular content.

[7] Note that $(\exists x)[G(x) \wedge \Box(\exists y)(x = y)]$, though it appears closer to the statement that there exists a God-like being that necessarily exist, nevertheless it is not quite right. That is because this alternative formula allows that though God exists in our world and that that being exist in every other world as well, it need not be God-like in other worlds. Compare this with a person being the U.S. President in one period of time but not being President in another period of time even though that person exists at the other period.

[8] Succinctly stated, Descartes's argument was that the perfect being is perfect, and that perfection implies existence, i.e., a perfect being must exist; hence the perfect being exists. Of course, we associate being perfect here with being God-like.

assuming that if God exists then God necessarily exists, which should lead us to ask why we need modal logic rather than just standard logic. The whole point of using modal logic, after all, is to prove something like $(2^{'})$ as well as God's existence *simpliciter*.

In any case, we should be clear that any doubts we have about $(2^{'})$ apply equally or even more so to Pigdon's premise (2). For the sake of trying to save the argument, however, let us replace premise (2) by $(2^{'})$. Then, by premise (1) and premise $(2^{'})$, what follows is that possibly there exists a thing that necessarily is God-like[9]:

$$\Diamond(\exists x)\Box G(x).$$

This conclusion does not show either that there exists a necessary being or that there exists a being that is necessarily God-like—at least not without the Carnap-Barcan formula, i.e., the formula $(\forall x)\Box\varphi \longrightarrow \Box(\forall x)\varphi$.[10]

If the Carnap-Barcan formula were justified and allowed in this context, then we can prove in $S5$ that if possibly there exists a thing that has a given property, then there exists a thing that possibly has that property (which is just the contrapositive of the Carnap-Barcan formula), i.e.,

$$\Diamond(\exists x)\varphi \longrightarrow (\exists x)\Diamond\varphi$$

would then be provable in $S5$. Accordingly, because $\Diamond\Box G(x) \longrightarrow \Box G(x)$ is already provable in $S5$, then, by the Carnap-Barcan formula,

$$\Diamond(\exists x)\Box G(x) \longrightarrow (\exists x)\Box G(x)$$

is also provable in $S5$, and hence, from premises (1) and $(2^{'})$ and the Carnap-Barcan formula, we have the conclusion that there exists (in our world) a being that necessarily is God-like, and hence is God-like in every possible world whether or not that being exists in in every possible world or not. That comes closer to the desired conclusion, but it still leaves open the possibility that the being that is posited to exist in our world does not exist in every other possible world—unless, that is, we add the assumption being God-like implies existence.

But even with this assumption, the argument depends on the Carnap-Barcan formula, and the fact is that there is no justification for using the Carnap-Barcan formula when the quantifiers are restricted to quantifying over only the things that exist in a given world, and where worlds can differ in the things that exist in them. In other words, the Carnap-Barcan formula is not valid in the semantic context that we have described.

[9] Proof: Given premise $(2^{'})$, then by modal and quantifier distribution laws, $\Diamond(\exists x)Gx \longrightarrow \Diamond(\exists x)\Box G(x)$, and therefore by premise (1) and modus ponens, $\Diamond(\exists x)\Box G(x)$.

[10] This formula, which today is sometimes called simply the Barcan formula, was formulated in 1946 by Rudolf Carnap, who also gave at that time a semantics in which it was valid. Ruth Barcan assumed the formula as an axiom of a modal logic that she described in that same year. She then proved a few theorems on its basis, but gave no semantics. Carnap and Barcan, incidentally, formulated what seem to be the first versions of *quantified* modal logic.

3 On Using 'God' as a Proper Name

There is a weak version of the metalanguage claim that the proper name 'God' is a "rigid designator" that might be useful and defensible as a premise of a related modal ontological argument. But the formula in question requires that we adopt a free logic version of $S5$ instead of the standard version assumed above (and the conclusion we want requires a free logic anyway). So hereafter we will assume a free logic version of first-order $S5$ with identity.

Now, in free logic, the formula $(\exists x)\Box(God = x)$ is the object-language counterpart of the metalinguistic claim that the proper name 'God' is a "rigid designator," and that as such it can then be used as the the basis for an existential generalization even involving modal contexts.[11] We cannot assume this formula, of course, because it begs part of the issue in question, i.e., it implicitly asserts the existence of God. But we might consider the weaker version $\Diamond(\exists x)\Box(God = x)$, instead. This formula implies a counterpart to premise (1) above. In particular, it implies that the existence of God is possible, in symbols $\Diamond(\exists x)God = x)$.[12] So if we replace premise (1) by this formula, then perhaps we can construct another version of the modal ontological argument that does give us what initially seems to be the right conclusion, namely that necessarily God exists. The argument proceeds as follows.

With 'God' as a proper name, we can replace Pigden's premise (1) by our counterpart formula (that implies premise (1)), which we will describe as (1^*). We retain the idea of premise $(2')$ above, i.e., that if God exists, then God necessarily exists, but expressed now in terms of identity as in (2^*) below, which says that necessarily if God exists then he exists necessarily. The new argument is given as follows:

(1^*) $\Diamond(\exists x)\Box(God = x)$,
(2^*) $\Box[(\exists x)(God = x) \longrightarrow \Box(\exists x)(God = x)]$,
and the conclusion becomes:
$\Box(\exists x)(God = x)$.[13]

Premise (2^*), of course, is a very strong assumption, and as with $(2')$ about God-likeness, this version needs a separate defense of its own. Without such a separate defense this assumption begs the question about God's necessary existence and nullifies the whole point of formulating an ontological argument in modal logic as opposed to standard logic.

Note, incidentally, that although this conclusion seems to say that necessarily God exists, what it really says, speaking metalinguistically, is that in every

[11] The point is that in free logic we *cannot* validly infer $(\exists x)\varphi(x)$ where x occurs in a modal context from $\varphi(a)$ by existential generalization unless a is a rigid designator, i.e., unless we are also given $(\exists x)\Box(a = x)$.

[12] Proof: by modal logic axiom, $\Box(God = x) \longrightarrow God = x$, is valid in $S5$, and therefore by universal generalization and a quantifier distribution law, $(\exists x)\Box(God = x) \longrightarrow (\exists x)(God = x)$ is also valid, and hence by modal generalization and modal distribution law, $\Diamond(\exists x)\Box(God = x) \longrightarrow \Diamond(\exists x)(God = x)$ is valid, and hence we have the consequent given the antecedent.

[13] Because premise (1^*) implies $\Diamond(\exists x)(God = x)$, then the proof proceeds exactly as above.

possible world (including our world as well) some being called 'God' exists. The problem is that it might not be the same being in every possible world—unless we assume that the name 'God' is a rigid designator, i.e., that it designates or denotes the same being in every possible world, which we cannot do because it begs the question of God's exisrence. What we want, in other words, is not the above conclusion but

$$(\exists x)\Box[(God = x) \wedge (\exists y)(x = y)],$$

instead, which says not only that necessarily God exists, but also that necessarily it is the same God in every possible world.

Now if we were allowed to use the Carnap-Barcan formula, then, by premise (1^*), the object-language version of the rigidity of the name 'God', in symbols $(\exists y)\Box(God = y)$ follows.[14] But with this formula and the given conclusion, then $(\exists x)[\Box(\exists y)(x = y) \wedge \Box(God = x)]$ follows, and therefore, by the valid modal logic schema $\Box(\varphi \wedge \psi) \longleftrightarrow (\Box\varphi \wedge \Box\psi)$, so does

$$(\exists x)\Box[(God = x) \wedge (\exists y)(x = y)].^{15}$$

But (1^*) is a stronger claim than assuming that possibly God exists, and the question is how close does it come to begging the question. And of course, we still need the Carnap-Barcan formula, which is not justified for the reasons already noted. So this argument fails as well. We will return to this argument, however, under a new interpretation of the quantifiers in section 5 below.

4 Leibniz and Possible Worlds

In a later posting (of 11-22-97), Pigden claimed that Leibniz "nearly arrived at the valid version of the ontological argument," but that he, Leibniz, "thought that the argument needed to be supplemented with a proof that God's existence is *possible*," which, as already noted, is apparently what Pigden meant by premise (1), i.e., $\Diamond(\exists x)G(x)$, of his modal ontological argument. The problem, however, is that what Pigden meant by the possibility of God's existence is not what Leibniz meant.

Let us note here that Leibniz distinguished two "modes" of existence that are important here, namely one in which "creatures exist contingently, i.e., their nonexistence is logically possible, and the other in which we have the necessity of

[14] Proof: By the Carnap-Barcan formula, $\Diamond(\exists x)\Box(God = x) \rightarrow (\exists x)\Diamond\Box(God = x)$. But $\Diamond\Box(God = x) \rightarrow \Box(God = x)$ is provable in $S5$, and by universal generalization, and a quantifier ditrubution law, $(\exists x)\Diamond\Box(God = x) \rightarrow (\exists x)\Box(God = x)$. Therefore, by a rewrite law and sentential logic $\Diamond(\exists x)\Box(God = x) \rightarrow (\exists y)\Box(God = y)$. Therefore, $(\exists y)\Box(God = y)$ follows.

[15] Proof: By rewrite of bound variables laws, $\Box(\exists x)(God = x)$ gives us $\Box(\exists y)(God = y)$, which together with $(\exists x)\Box(God = x)$ gives us the conjunction $[\Box(\exists y)(God = y) \wedge (\exists x)\Box(God = x)]$. Therefore by quantifier confinement laws and EG on a rigid designator, $(\exists x)[\Box(\exists y)(x = y) \wedge \Box(God = x)]$ follows, and finally so does $(\exists x)\Box[(God = x) \wedge (\exists y)(x = y)]$ by the valid conjunction schema mentioned above.

God's existence, or, equivalently, that God's nonexistence is logically impossible, and hence that his existence is not contingent. It is the necessity of God's existence, and not just God's existence *simpliciter,* that is the reason why we need a modal logic and not a standard, modal-free logic.

Now by God's existence being logically necessary, Leibniz did not mean that God exists in every possible world. This is because, according to Leibniz, possible worlds, as well as all of the things that exist in those worlds have only a contingent existence, and hence, given that God's existence is not contingent, it follows that God does not exist in any possible world, no less than in every possible world—which does not mean that God's existence is logically impossible according to Leibniz. In saying that God's existence is "possible" Leibniz meant only that the definition of 'God' does not contain a contradiction. He did not mean that there is a possible world in which God exists along with all of the other contingent beings that exist in that world, i.e., in symbols $\Diamond(\exists x)(God = x)$, and hence that God exists as a contingent being, which we can formulate as $(\exists x)(God = x) \wedge \Diamond\neg(\exists x)(God = x)$. Of course, that is what we mean today in saying that a given sentence is contingent, i.e., that the sentence is consistent and therefore true in some model of formal semantics but could be false in another model, or in philosophical terms, that there is a possible world in which it is true and yet another possible world in which it is false, which explains why Pigden represents God's possible existence simply as $\Diamond(\exists x)G(x)$, or as with our preferable version $\Diamond(\exists x)(God = x)$. But, needless to say, Leibniz was not familiar with model-theoretic or possible world semantics, though his views on the subject of possible worlds certainly has influenced the development of modern formal semantics.[16]

Our point here is that God's existence, according to Leibniz—and Boethius and Aquinas as well[17]—transcends, or is "outside" of, the totality of possible worlds. It is a fallacy, in other words, to represent God's existence as God's existence in a possible world. Moreover, according to Leibniz possible worlds exist only as ideas or concepts in God's mind—except, of course, for the real world, which, although originally only a concept in God's mind, God chose to "actualize" or "create" because he thought it was the best of all possible worlds. If all other possible worlds were both real and had a contingent existence on a par with the actual world (as in an extreme realist ontology), then there is no sense to be made in God deciding to "actualize" the real world. The inhabitants of those other worlds would then indexically understand their respective world to be the "actual" world no less so than we do our world, and God's "actualizing" or "creating" our world would then only mean that our world is better than all of the other possible worlds. In other words, what we claim is that God's act of "actualizing" the real world is an ontological act of creation and not simply an act of preferring our world over all other possible worlds.

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[16] For an account of what Leibniz meant by the consistency of God's existence see Jerzy Perzanowski's article or chapter 5 of Robert M. Adams's book, both of which are listed in the bibliography given below.

[17] See, e.g., Boethius *The Consolation of Philosophy*, part V, and Aguinas *Summa Theologica*, part I.

5 On God's Divine "Existence" (or Being)

We might now well ask: if we cannot formally represent God's possible existence as his existence in some possible world, then how are we to formally represent it in logic, i.e., what formal expression of logic other than premise (1) (or (1*)) under its original interpretation can we construct to formally represent the consistency of God's existence? One way might be to introduce a new ontological category, e.g., "divine existence," and distinguish it from contingent existence just as we distinguish "abstract existence" from contingent existence for when we want to make an ontological distinction between contingent (concrete) entities and numbers and abstract entities in general.[18] Numbers and abstract entities in general are transworld entities, i.e., they transcend all possible worlds and "exist" (or rather have *being*) in a separate ontological realm (as in Plato's ontology) from the contingent objects that exist in possible worlds, which does not preclude our formally representing them in logic as objects. God, on the other hand, would have yet another separate "realm" or category of being—including perhaps a separate time-dimension, which would then explain how God's omniscience in his time-dimension does not imply determinism or fatalism in ours, and which would also explain how God could choose to actualize or create our world even before it existed.

As transcendent entities, God and divine entities in general, along with numbers and abstract entities in general, could then be said to have *being* "in" all possible worlds, but not *existence* as contingent objects that can have being only in a possible world.[19] Possible worlds are completely determined by the contingent objects and events that exist in them, but that does not deter us from being able to talk about and describe numbers and abstract objects as if they were "in" the world.[20] Similarly, we sometimes talk about God and perhaps other divine beings as if they too were "in" the world. There is nothing in logic alone that prohibits such talk and deems it meaningless. It is usually only the empirical significance or verification of God and abstract entities that is challenged in philosophy—which, for some philosophers, may be enough to deny their "existence" or being.

We can distinguish our talk about God and abstract objects from that about contingent objects by expanding our logic to include two types of first-order quantifiers, e.g., $\forall^e$ and $\exists^e$ for existing objects, versus $\forall$ and $\exists$ for objects that have being in general. All objects will of course have being, but only contingent

[18] In my second-order framework of conceptual realism, I distinguish (contingent) existence-entailing concepts, such as being a horse (with or without wings) or a mountain (made of gold or otherwise), etc., from concepts that do not entail concrete existence, and then impredicatively define concrete existence as falling under an existence-entailing concept. Abstract entities are then objects that do not fall under any existence-entailing concept.

[19] By God and abstract entities being "in" a possible world we mean only that they can be taken semantically as values of the first-order variables in that world. We assume, of course, that no abstract entity is a divine entity.

[20] We could also talk about merely possible objects, where by a possible object we mean an object that exists in a possible world. Divine and abstract objects cannot exist in any possible world (but they can have being).

objects have existence. We can then distinguish a part of our logic for existence from the part for being in general, and we can then see how they are related to each other. The quantificational logic for the quantifiers $\forall^e$ and $\exists^e$ would then be "free" of existential presuppositions so that where a is a name $(\exists^e x)(a = x)$ is not valid or provable, i.e., a might not denote an *existing* object, regardless whether or not a denotes an object that has being. We can then represent God possibly having being in the form of premise of (1) of the ontological argument, namely, by the formula $\Diamond(\exists x)(God = x)$, but now with the revised interpretation of the quantifier $\exists$. We can also allow the logic of the quantifiers $\forall$ and $\exists$ to be a "free logic" as well, so that even $(\exists x)(God = x)$, as well as $(\exists^e x)(a = x)$, is not valid, i.e., neither would be provable in our revised logic. In that way we can allow the divine realm to be empty.

Now, because transworld entities have being in every possible world, the Carnap-Barcan formula is valid under this new interpretation of the quantifiers $\forall$ and $\exists$, i.e., the formula $(\forall x)\Box\varphi \longrightarrow \Box(\forall x)\varphi$ is now logically valid. The formula is not valid, of course, for the quantifiers $\forall^e$ and $\exists^e$, i.e., the formula $(\forall^e x)\Box\varphi \longrightarrow \Box(\forall^e x)\varphi$ is not valid in our revised logic.[21]

Let us now briefly reconsider the ontological argument given in section 3 above. We retain premise (1*), $\Diamond(\exists x)\Box(God = x)$, which, as noted in section 3, implies $\Diamond(\exists x)(God = x)$, which is our representation of the consistency of God's existence, but now with the quantifiers reinterpreted as ranging over all objects, including abstract and divine objects as well as concrete objects. The resulting argument is as follows:

Premise (1*) $\Diamond(\exists x)\Box(God = x)$,
Premise (2*) $\Box(\forall x)[(\exists x)(God = x) \longrightarrow \Box(\exists x)(God = x)]$,
Therefore,

$$(\exists x)\Box[(God = x) \wedge (\exists y)(x = y)].$$

The conclusion of this argument states implicitly that God exists and that God's existence is necessary. The argument is valid in $S5$ with the Carnap-Barcan formula. (The proof is the same as described for the argument described in section 3.)

Of course. one might object that what was wrong with Pigdon's original premise (1) is still wrong under our reinterpretation of the quantifier $\exists$. This objection can be dispelled somewhat by noting that it is God's possible *existence* as a contingent being, in symbols $\Diamond(\exists^e x)(God = x)$, not God's possible *being* as a divine being, in symbols $\Diamond(\exists x)(God = x)$, that is the problem. What we are allowing in this premise is that possibly the divine realm is not empty. The distinction between existence and being can be made clearer, moreover, by also noting that God's existence as a contingent being is in fact *impossible*, in symbols $\neg\Diamond(\exists^e x)(God = x)$.[22] There is no contradiction, moreover, between $\Diamond(\exists x)(God = x)$ and $\neg\Diamond(\exists^e x)(God = x)$, i.e., between God's possible *being* and the impossibility of God's *existence*. But let us note that the objections to

[21] For an axiomatic description of such a logic, see, e.g., Cocchiarella 1966.

[22] This would be have to be listed as an assumption of our logic applicable to all abstract and divine beings.

premise (2^*)—i.e., the assumption that necessarily if God exists, then necessarily God exists—are the same as we considered for premise ($2'$) in section 2, and that remains a problem for this argument as well.

6 On God's Omniscience and the Fallacy of Fatalism

God's omniscience, as we have claimed in the previous section, does not imply fatalism. What is interesting about this claim here is that the fatalist argument involves a fallacy that is similar to the fallacy of representing the consistency of God's existence as God's existence (as opposed to *being*) in a possible world. We defend this claim by describing what we assume to be the fatalist's argument, and then noting where the fallacy lies.

Now the basic assumption the fatalist makes is by formally representing God's omniscience, i.e., the thesis that God knows every true proposition, as follows (where 'p' is a variable that ranges over propositions):

$$(\forall p)[p \longrightarrow Knows(God, p)].$$

Let us also distinguishe between the *unalterability* of the past and the present as opposed to the openness or indeterminateness of the future. Formally, this notion can be represented by means an operator $\Box^u$, which is read as 'It is (now) unalterably the case that'. We assume that $\Box^u$ is distributive over conditionals, i.e., we assume the validity of

$$\Box^u(p \longrightarrow q) \longrightarrow (\Box^u p \longrightarrow \Box^u q),$$

as well of course as other modal principles, such as $\Box^u p \longrightarrow p$. Finally, using $\mathcal{F}$ for the future-tense operator 'It will be the case that', so that $\mathcal{F}p$ is read as 'It will be the case that p', the fatalist thesis is then that what will be the case is as unalterable as the past and the present, or more simply as what will be the case unalterably will be the case. Formally, the fatalist thesis is that for all propositions p, if p will be the case, then it is unalterable that p will be the case:

$$(\forall p)[\mathcal{F}p \rightarrow \Box^u \mathcal{F}p]. \qquad \text{(fatalism)}$$

Now, let us note that if an arbitrary proposition p will be the case, in symbols $\mathcal{F}p$, then from that alone it does not follow that it is unalterable that p will be the case, i.e., $\Box^u \mathcal{F}p$. But, given God's omniscience as represented above, then, or so the fatalist argument goes, God (now) knows that p will be the case, and therefore, because it is a present fact, it is unalterable that God (now) knows that p will be the case, i.e., $\Box^u Knows(God, \mathcal{F}p)$. Accordingly, by the distribution law for $\Box^u$,

$$\Box^u[Knows(God, \mathcal{F}p) \rightarrow \mathcal{F}p] \longrightarrow [\Box^u Knows(God, \mathcal{F}p) \longrightarrow \Box^u \mathcal{F}p],$$

and the principle that unalterably what is known is therefore the case, i.e., the principle

$$\Box^u(\forall x)(\forall p)[Knows(x,p) \rightarrow p]$$

it follows that it is unalterable that p will be the case, i.e., $\Box^u\mathcal{F}p$. In other words, fatalism follows according to this fatalist argument.

Of course, the problem is that the argument depends essentially on representing God's omniscience as being in the world's time, when according, e.g., to Leibniz, Boethius and Aquinas, both God and God's knowledge are outside of our world's time. Hence, this assumption is where the fallacy lies, and why the fatalist's argument is really fallacious.

7 Concluding Remarks

We have noted two fallacies noted in this paper. The first is the fallacy of wrongly assuming that God's possible transcendent existence is the same as our possible contingent existence, and hence in effect that the consistency of God existence can be represented as God's existence in some possible world, i.e., in effect that God's exists insome possible world in the same as we do. The second is the fatalist's fallacy of wrongly assuming that God's knowledge is in the world in the same way that our knowledge is in the world, namely in the world's time. Both God's knowledge and God's concepts or ideas of the different possible worlds exist only in God, and just as God's existence transcends all possible worlds as well as the actual world, at least according to Leibniz (and Boethius and Aquinas), so too does God's omniscience and God's ideas or concepts of all the different possible worlds.

Finally, perhaps we should note that although there is no contradiction between the possibility of God's *being* and the impossibility of God's *existence*, i.e., between $\Diamond(\exists x)(God = x)$ and $\neg\Diamond(\exists^e x)(God = x)$, nevertheless we should ask how much is really being given away in the assumption of premise (1*), i.e., our object-language representation of the claim that the proper name 'God' is rigid in at least a weak sense that implies our representation of the possibility of God's being. Similarly, there is the problem of our premise (2*), which assumes that if God exists, then he necessarily exists, which begs the question whether or not God's existence is necessary, and which therefore nullifies our reason for giving a modal ontological argument as opposed to the usual modal-free argument. Altogether, given the validity of the above argument, i.e., the argument based on the difference between being and existence, these are important assumptions, and each should be given a separate argument of its own.[23]

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References

[1] Adams, Robert M., Chapter 5 of *Leibniz. Determinist, Theist, Idealist*, New York: Oxford University Press, 1994, pp. 135-156.

[2] Aquinas, Thomas, *The Summa Theologica*, trs. The Fathers of the English Dominican Province, 2006, www.microbookstudio.com.

[3] Barcan, Ruth, "A Functional Calculus of First-order Based on Strict Implication," J. Symbolic Logic 11, 1–16, 1946.

[4] Boethius, A.N.S., *The Consolation of Philosophy*, trs. W.V. Cooper, Exclassics Project, 2009, www.exclassics.com.

[5] Carnap, Rudolf, "Modalities and Quantification," *J. Symbolic Logic* 11, 33–64, 1946.

[6] Cocchiarella, Nino B., "A Logic of Actual and Possible Objects," abstract, *Journal of Symbolic Logic*, vol. 3 (1966), pp. 688.

[7] Loux, "Introduction: Modality and Metaphysics," introduction to *The Possible and the Actual*, Cornell Univ. Press, Ithaca and London, 1979.

[8] Perzanowski, Jerzy, "Ontological Arguments II - Cartesian and Leibnizian," in *Handbook of Metaphysics and Ontology*, vol. 2, eds., Hans Burkhardt and Barry Smith, Philosophical Verlag, Munich, 1991, pp.. 625-633.