

Aquinas' Third Way Modalized

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ABSTRACT: The Third Way is the most interesting and insightful of Aquinas' five arguments for the existence of God, even though it is invalid and has some false premises. With the help of a somewhat weak modal logic, however, the Third Way can be transformed into an argument which is certainly valid and plausibly sound. Much of what Aquinas asserted in the Third Way is possibly true even if it is not actually true. Instead of assuming, for example, that things which are contingent fail to exist at some time, we need only assume that contingent things possibly fail to exist at some time. Likewise, we can replace the assumption that if all things fail to exist at some time then there is a time when nothing exists, with the corresponding assumption that if all things possibly fail to exist at some time then possibly there is a time when nothing exists. These and other similar replacements suffice to produce a cogent cosmological argument.

Aquinas' Third Way is a cosmological argument for the existence of God which "is taken from possibility and necessity." It is surprising therefore that philosophers of religion have not shown much interest in applying modal logic to its analysis. (1) There are a couple of reasons. First, Aquinas does not always use the words 'possibility' and 'necessity' in the same way that they are used in modal logic. Second, cosmological arguments generally purport to build a bridge between some property of *this* world and a supreme being, making it unnecessary, it might be thought, to appeal to modalized features of *other* possible worlds.

Modal logic has of course been applied extensively to the analysis of ontological arguments. Ontological arguments purport to build a logical bridge between thought and a supreme being. Most ontological arguments proceed from the assumption that it is possible for God to exist. They then link this assumption with some rather "strong" and controversial principles of modal logic in order to prove that God must exist in all possible worlds, from which it follows that God exists in the real world. (2) It might be possible, however, to prove the existence of God with the use of a weak and noncontroversial system of modal logic if we root the proof with some plausible possibilistic principles about what might be true of the cosmos.

The Third Way is not sound per se. But it is forceful and insightful. I intend to do two things in this paper. I shall furnish a line by line commentary on the strengths and weaknesses of the Third Way itself. Then I shall formulate a modal argument for the existence of God, the Modal Third Way, which is based on possibilistic transformations of some of the questionable ideas and inferences of Aquinas' original Third Way. The Modal Third Way is arguably sound, and can be shown to be valid in a fairly benign system of modal logic. (3)

AQUINAS' ARGUMENT

Aquinas states the Third Way as follows:

The third way is taken from possibility and necessity and runs thus. We find in nature things that are possible to be and not possible to be, since they are found to be generated and corrupted. But it is impossible for these always to exist, for that which can not-be at some time is not. Therefore, if everything can not-be, then at one time there was nothing in existence. Now if this were true then

even now there would be nothing in existence, because that which does not exist begins to exist only through something already existing. Therefore if at one time nothing was in existence, it would have been impossible for anything to have begun to exist; and thus now nothing would be in existence -- which is absurd. Therefore, not all beings are merely possible, but there must exist something the existence of which is necessary. But every necessary thing has its necessity caused by another, or not. Now it is impossible to go on to infinity in necessary things which have their necessity caused by another, as has already been proved in regard to efficient causes. Therefore, we cannot but admit the existence of some being having of itself its own necessity, and not receiving it from another, but rather causing in others their necessity. This all men speak of as God. (4)

1. *The third way is taken from possibility and necessity and runs thus.*

While it is clear that the words 'possibility' and 'necessity' signal that the Third Way is a modal argument, the modal features of this argument are frequently ignored in many discussions of it. One reason for this omission might be due to the glaring nonmodal invalidity of the argument. Another might be that Aquinas' use of 'possibility' and 'necessity' is not always identical with the twentieth century alethic use of modalities. Following Aristotle, Aquinas sometimes uses 'possible' to mean what we mean by 'contingent' and, as I shall explain below, he sometimes uses 'necessary' to mean 'neither generatable nor corruptible.' (5)

2. *We find in nature things that are possible to be and not possible to be, since they are found to be generated and corrupted.*

The Third Way appears to have an empirical component which would distinguish it from all ontological and purely a priori arguments. We observe that some things are generated, and thus come into existence; and also observe that some things are corrupted, and thus go out of existence. Consequently, we know that some things in nature are contingent, in the sense that it is possible for them to exist, because we observe them, and also possible for them not to exist, because we observe that they either pass into existence via generation or pass out of existence via corruption. It turns out, however, that these observations of the natural world are not really essential to the logic of the Third Way, save in the trivial sense that observation might be required for the purpose of justifiably believing that something presently exists. Modality, not experience, is what gives promise to the Third Way.

3. *But it is impossible for these always to exist, for that which can not-be at some time is not.*

Aquinas could be saying one of two things here. He could be saying (i).

(i) Necessarily, anything which can-not-be-at-some-time at some time is not:

$$\sim(x)(\Diamond(\exists t)\sim Rxt \supset (\exists t)\sim Rxt),$$

where 'Rxt' means 'x is realized at time t.'

Or he could be saying (ii).

(ii) Anything which can-not-be-at-some-time, necessarily fails to exist at some time:

$$(x)(\Diamond(\exists t)\sim Rxt \supset \sim(\exists t)\sim Rxt).$$

(i) is false. It is true of course that things which are either generated or corrupted are things which

can-not-be-at-some-time, simply because they do in fact fail to exist at some time. Things which are generated begin to exist at some time, and things which are corrupted cease to exist at some. Yet it fails to follow from this that things which can-not-be-at-some-time are things which in fact fail to exist at some time. They might fail to exist at some time in some possible world but always exist in the actual world. Matter-energy, for example, might in fact be eternal in the actual world, but either begin or cease to exist in some possible world.

The case against (i) is really just a case against (i) sans the necessity operator. But (i) sans the necessity operator is entailed by (ii). So the reason against (i) is a reason against (ii). Since (i) is false per the last paragraph, (ii) is false as well.

Despite these mistakes, Aquinas' reasoning in this phase of the argument is significant, for it strongly suggests that we replace the alethic concept of contingency with the new idea of *temporal contingency*, where something is temporally contingent if and only if it is possible to generate it or possible to corrupt it. Clearly it is true then that temporally contingent things possibly do not exist at some time:

$$(x)(Cx \supset \Diamond(\exists t)\sim Rxt)$$

where 'Cx' means 'x is temporally contingent'. And this truth will figure prominently in the Modal Third Way.

4. *Therefore, if everything can not-be, then at one time there was nothing in existence.*

Aquinas appears initially to argue correctly that if, by reductio, *everything* were contingent, and could therefore be either generated or corrupted, like the things we observe in nature, and if everything which could be either generated or corrupted must fail to exist at some time (howsoever fallacious his inference thereunto), then everything must fail to exist at some time or other. But then he appears to commit one or both of two fallacies. He appears first to commit a fallacy of relational logic, that of assuming that if everything fails to exist at some time or other, then at some time everything fails to exist --a time when nothing existed. This would be like arguing that if everyone has a mother [true], then someone is the mother of everyone [false].

The second fallacy is the formal fallacy of inferring that one of the disjuncts of a disjunction follows from the disjunction alone. For even if there is a time when nothing exists, it need not be the case that there *was* a time when nothing existed. The contingents of nature might always have existed only to die out sometime in the future. Similarly, that something is either possibly generated or possibly corrupted does not entail that there *was* a time in some possible world where it failed to exist.

Inasmuch as relational logic was not explicitly developed until the late 19th century, it is not surprising that Aquinas would have committed the aforementioned fallacy of relational logic, especially if medieval latin failed to express the relevant distinction of the placement of quantifiers. It is a tad more surprising that he committed the disjunction fallacy. But fallacies and falsities notwithstanding, what Aquinas says here is fertile, for it suggests a weak modal truth that proves useful in demonstrating the existence of God, to wit: if everything *possibly* fails to exist at some time, then *possibly* there *was* a time when nothing existed:

$$(x)\Diamond(\exists t)\sim Rxt \supset \Diamond(\exists t)(x)\sim Pxt$$

where 'Pxt' means 'x was realized at past time t.'

5. *Now if this were true then even now there would be nothing in existence, because that which does not exist begins to exist only through something already existing.*

This implies that there must be a reason or cause for why things begin to exist. It is far from obvious that this is true, however; and it might be the case that some things just pop into existence for no good reason, as it were. But even those things which might have begun to exist unexplained *might* have had their beginning explained. Their beginning is *explicable* even if it is actually unexplained. Indeed, it is well-nigh absurd to claim that some things are inexplicable, and that there does not exist at least one possible world where something (anything consistent) is explained, even if it is not explained in the actual world. (6) It must be the case that every possible predication is explicable:

$$\sim(x)(\Diamond\Phi x \supset \Diamond(\exists y)(\Phi x \ \& \ Eyx))$$

where

' Φ '

is a place holder for any predicate whatsoever and 'Eyx' means 'x explains y'. (7) Once again, Aquinas was virtually correct, and for almost the right reasons.

6. *Therefore if at one time nothing was in existence, it would have been impossible for anything to have begun to exist; and thus now nothing would be in existence -- which is absurd.*

It is empirically absurd to claim that nothing presently exists. And if everything that begins to exist has an explanation, then the [possible] explanations for the existence of the generated things which we presently observe in nature will have to involve the agency of something which already exists and continues to exist at least until the time when what it explains begins to exist. In other words, in order to be able to explain the existence of something which begins to exist at time t through the agency of another, that other must exist before t and continue to exist at least until t. So if there were a time when nothing existed, there would be no agency at that time which could explain the existence of anything at any later moment.

It is difficult to know whether or not there is a reason or cause for why there is something rather than nothing. But whether there is or there is not such a cause, it still seems plausible to assume with Aquinas that explanations presuppose that there was not a time when nothing existed. Analogously, it is plausible to assume that it must be the case that if something can be explained, then there was not a time when nothing existed:

$$\sim[(\exists t)(\Diamond(\exists y)Eyx \supset \sim(\exists t)(x)\sim Pxt)]. \quad (8)$$

7. *Therefore, not all beings are merely possible, but there must exist something the existence of which is necessary.*

It is now clear that in this sentence Aquinas is using the word 'possible' to mean 'temporally contingent' and the word 'necessary' to mean 'not temporally contingent' or what we will call 'temporally necessary.' (9) By definition, something is temporally necessary, then, just in case it is neither possible *in the modern modal sense* to generate it nor possible *in the modern modal sense* to corrupt it. A temporally necessary being is one therefore that neither begins nor ceases to exist in any

possible world. Temporally necessary beings need not exist in all possible worlds, however. (10) Rather, they exist eternally in every possible world where they do exist. So let 'Tx' be short for 'x is temporally necessary'. The first thing that Aquinas attempts to show by the Third Way, using a reductio ad absurdum argument, is that there exists at least one (temporally) necessary being:

$$(\exists x)Tx_{(11)}$$

Although the Third Way is not sound, it can be soundly transformed into an argument which does prove that a temporally necessary being exists, the Modal Third Way.

8. *But every necessary thing has its necessity caused by another, or not.*

This statement is logically true if taken only at face value. It is clear, however, that Aquinas is implicitly assuming here that every thing, event and condition is caused. The Third Way requires a connection between (temporal) necessity and God, and causality is the proffered connection. Yet modern physics leads us to question whether universal causality holds of the actual world. Even so, it seems quite reasonable to assume that it holds of some possible world; and that whatever is uncaused in the actual world is caused in some possible world. Accordingly, we might try to replace Aquinas' Third Way dependency on actual causality with a similar dependency on possible causality, or on the related idea of explicability. (12) Given that God is the kind of being who is supposed to be unlimited and not dependent on anything, a modest first step in the direction forging a connection between temporal necessity and God would be to assume that things which are temporally necessary are possibly unlimited:

$$(x)(Tx \supset \Diamond Wx)$$

where 'Wx' means 'x is unlimited.' Then we might work on establishing a linkage between unlimitedness and explicability.

9. *Now it is impossible to go on to infinity in necessary things which have their necessity caused by another, as has already been proved in regard to efficient causes.*

Aquinas' rejection of an infinity of causes (in the Second Way) begs the question. He notes that there is no first cause if there is a infinity of efficient causes. And then he argues that since the effect has occurred, and that there could not be an efficient cause without there being a first cause, which causes the intermediate cause, the ultimate cause, and the effect in turn, there must be a first efficient cause and, thus, no infinity of causes. The question begging occurs with the assumption that there must be a first cause of every effect. That could not be established without rejecting an infinity of causes.

A better case might be made for a *possible* first cause. We could then link the idea of a possible first cause with the idea that in no possible world could a first cause which is unlimited be caused by anything else. In related words, we might say that the unlimited cannot be explained by anything else:

$$\sim \Diamond (\exists x)(\exists y)(Wx \ \& \ Eyx \ \& \ y \neq x).$$

10. *Therefore, we cannot but admit the existence of some being having of itself its own necessity, and not receiving it from another, but rather causing in others their necessity.*

If, as Aquinas argues, there is a first cause, and everything has a cause, then the first cause must be self-caused. (13) Conversely, if it is possible for something to cause itself, or "its own necessity," then such a being must be unlimited, "causing in others their necessity." That is, if something possibly has within itself a reason for its own existence then it is unlimited:

$$(x)(\Diamond E_{xx} \supset Wx).$$

Transpositionally, a limited being cannot possibly explain itself:

$$(x)(\sim Wx \supset \sim \Box \Diamond E_{xx}).$$

11. *This all men speak of as God.*

If the uncaused cause of its own necessity must of necessity be unlimited, then, Aquinas concludes, it must be a supreme being; for that is part of what we mean by supremacy. Moreover, since there can only be one supreme being, God must exist.

There are two critical thoughts here. The first is that whatever is unlimited is supreme:

$$(y)(Wy \supset \Box Sy)$$

where 'Sx' means 'x is supreme.' The other is that there is at most one supreme being, God. Aquinas never attempts to prove in any of the five ways that there is at most one supreme being, and that this is why the supreme being of his Third Way is what *all men speak of as God*. It makes sense to assume, however, that Aquinas and other scholastics would have conceived of a supreme being as a being who necessarily possesses every possible perfection, as a being than which none greater is possible. (14) Accordingly, if 'Sx' is equivalent to

$$' \sim \Diamond (\exists y) Gyx \ \& \ \sim \Diamond (\exists y) (x \neq y \ \& \ \sim Gxy)'$$

and 'Gxy' means 'x is greater than y', we will be able to prove the uniqueness of supremacy:

$$\sim (x)(y)((Sx \ \& \ Sy) \supset x=y).$$

The identification of God with the temporally necessary supreme being of the Modal Third Way will then make all the more sense.

THE MODAL THIRD WAY ARGUMENT

We can now state the entire The Modal Third Way argument succinctly as follows:

Premise 1. Every temporally contingent being possibly fails to exist at some time:

$$(x)(Cx \supset \Diamond (\exists t) \sim Rxt).$$

Premise 2. If all things possibly fail to exist at some time then it is possible that all things fail to exist

at some past time:

$$(x)(\Diamond(\exists t)\sim Rxt \supset \Diamond(\Box\exists t)(x)\sim Pxt).$$

Premise 3. It is necessarily the case that possible truths are explicable:

$$\sim(x)(\Diamond\Theta x \supset \Diamond(\exists y)(\Theta x \ \& \ Eyx)).$$

Premise 4. It is necessarily the case that something is explicable only if there was not a time when nothing existed:

$$\sim[(\exists\Box x)\Diamond(\Box\exists y)Eyx \supset \sim(\exists t)(x)\sim Pxt].$$

Premise 5. Whatever is temporally necessary might be unlimited:

$$(x)(Tx \supset \Diamond Wx).$$

Premise 6. Whatever might explain itself is unlimited:

$$(x)(\Diamond Eyx \supset Wx).$$

Premise 7. Nothing which is unlimited can be explained by anything else:

$$\sim\Diamond(\exists\Box x)(\exists y)(Wx \ \& \ Eyx \ \& \ y \neq x).$$

Premise 8. Everything which is unlimited is supreme:

$$(x)(Wx \supset Sx).$$

Premise 9. Something is temporally necessary if and only if it is not temporally contingent:

$$(x)(Tx \equiv \sim Cx).$$

THEREFORE, there exists a supreme being:

$$(\exists x)Sx.$$

Notes

(1) Brian Leftow has applied modal logic to the formulation of a cosmological

argument, but not specifically to the Third Way, in "A modal cosmological argument," *Philosophy of Religion* 24: 159-188 (1988).

(2) Most use the system **S5** or its quantified extension **QS5**. Both are controversial, however. Both assert

$$\forall x \Box \phi \supset \Box \phi.$$

QS5 asserts the Barcan Formula, and it also entails that the same individuals exist in all possible worlds within the equivalence classes defined by the accessibility relation.

(3) I demonstrate that the Modal Third Way is sound in "The Modal Third Way", *International Journal for Philosophy of Religion*, vol. 44: 1, Feb/Mar 2000. Some of the material "The Modal Third Way" overlaps with the present paper, with kind permission from Kluwer Academic Publishers.

(4) Thomas Aquinas, *Summa Theologica* q.3, art. 3

(5) 'Possibly p' sometimes appears to entail 'possibly not p' in the writings of Aristotle and Aquinas. However, in modern philosophy and modal logic 'possibly p' can be consistent with 'not possibly not p', and 'contingent p' is the synonym of 'possibly p and possible not p'. Unless otherwise noted, in this paper I shall always use the word 'possibility' in the modern modal sense.

(6) A detailed argument for this proposition is developed in section 2 of this paper.

(7) The idea that every possible predication is explicable is similar to James F. Ross' Principle E of his *Philosophical Theology*, Hackett, 1980.

(8) Interestingly, it follows from

$$\text{'}\neg[(\exists \Box x)\Box(\Box y)Eyx \supset \Box\neg(\exists \Box t)(x)\sim Pxt]\text{' and '}\neg(x)(\Box \Box x \supset \Box \Box(\Box y)(\Box x \& Eyx))\text{'}$$

that if something is true, and hence, possibly true, that in fact there was not a time when nothing existed.

(9) Patterson Brown makes the same point in "St. Thomas' Doctrine of Necessary Being" *Philosophical Review*, Vol. 73, p. 76-90, Jan. 1964

(10) Temporally necessary being should be distinguished from logically necessary beings, which exist in all possible worlds, at least up to accessibility. Temporally necessary beings do not have to be logically necessary, and logically necessary beings do not have to be temporally necessary; but there is nothing to preclude the possibility that a being is both temporally necessary and logically necessary.

(11) What he actually attempts to show is that the proposition that everything is (temporally) contingent leads to a contradiction.

(12) I am not implying or suggesting here that possibilia exist as causes.

(13) Clearly, if we reject the possibility of self-causality, then either there is not a first cause or something fails to have a cause.

(14) Even though Aquinas is critical of Anselm's ontological argument he would have agreed that God is a being than which none greater can be conceived (is possible).