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God Axiomized

An axiomatic approach to the Five Ways of St Thomas Aquinas

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St Thomas Aquinas was a monk who is most famous for taking the writings of Aristotle and explaining them in terms of Christianity. Like many of his contemporaries, he appreciated the ancient Greeks, whose knowledge was experiencing a resurgence, and wanted to make their ideas sound compatible with Christianity and consequently acceptable to the intellectual elite, i.e. the clergy. Part of the pool of rediscovered ancient knowledge was an obsession with logical thinking and reasoning. Although Aquinas stated elsewhere that God must be believed in and not proved, he wrote a short tract in which he offered five ways in which to convincingly prove the existence of God.

These five ways vary in believability. The traditional philosophical approach to understanding an argument is to write out each point in order, indicating the logical steps that allow the second statement to follow from the first, and so on. If there is no such logical step, then the statement must seem intuitive enough for the reader to simply accept it; if not, the argument is considered to be flawed.

I decided to analyze Aquinas' five ways from an axiomatic approach instead. The traditional method showed me that I did not agree with all of his points, but I could not quite identify why. By breaking each way down into undefined terms, definitions, axioms, and much smaller proofs of more specific propositions—rather than taking the whole argument as one proof—I was able to understand his argument much better. I was also able to specifically identify the portions of his logic which bothered me. Here follow the axiomatic interpretations of Aquinas' five ways, along with a brief analysis of possible flaws in his logic, which become apparent when the axiomatic method is used. It is important to realize that these are essentially translations—the arguments contained

here are not my own, but merely my attempt to reproduce Aquinas' logic. An assessment

of the validity of his arguments concludes each section.

The first way: 'the argument from motion"

Undefined terms:

Thing

Potentiality

Actuality

Definitions:

Motion: "the reduction of something from potentiality to actuality…by something

in a state of actuality"

Move (to put into motion): to reduce something from potentiality to actuality.

Example: Fire is in actuality hot, and reduces potentially hot wood to being

actually hot.

Axioms:

Axiom 1.1: In the world some things are in motion

Axiom 1.2: The same thing cannot be at once actually and potentially in some

respect.

Example: something either *is actually* hot or *is potentially* hot, but cannot be both

at one time.

Propositions:

Proposition 1.1: Nothing can move itself. In other words, everything currently in motion was moved by some other thing.

Proof:

By the definition of motion, something must be moved by something in a state of actuality.

Moreover, by the definition of motion, something cannot be moved unless it is in a state of potentiality

Therefore, by Axiom 1.2, nothing can move itself.

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Proposition 1.2: There exists some original mover.

Proof:

Label some chain of movement: object A_i was moved by A_{i-1}

Suppose object A_n is the contemporary mover; that is, some object in existence now that is moving.

Then A_{n-1} moved it, and A_{n-2} moved A_{n-1}, and so on

This cannot progress infinitely. Eventually we will reach object A_0, or A_{n-n}.

Therefore, there exists some object A_0 that was put into motion by no other.

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Definition:

Define **God** to be this original mover.

Problems with the argument:

Why can this chain of movement not progress into infinity? I biased the proof by labeling the contemporary object A_n. Suppose I had used the following notation:

Suppose object A_0 is the contemporary mover; that is, some object in existence now that is moving.

Then say A_1 put A_0 into motion, and so on so that A_i was put into motion by A_{i+1}.

Then it would seem perfectly reasonable that we could progress infinitely in this manner, and I do not agree that Aquinas can claim such an infinite progression is impossible. In his next argument, he does a slightly more convincing version of the same assertion. It is also true that in this time period people, including mathematicians, had an extraordinarily poor understanding of infinity. Indeed it was not until the invention of calculus that mathematicians started to understand the way the infinite behaved, and both Aristotle and Aquinas thought infinity was impossible because they did not think that a physical set of infinite objects could exist.

It is also interesting to note that even if we accept Aquinas' argument regarding infinity, he at best has proved the existence of at least one god. He has also not proved that this god he defines has any of the characteristics typically ascribed to the Christian God, besides a limited type of creation (moving, rather than creating).

The second way "from the nature of efficient cause"

Undefined terms:

Thing

To cause (bring about)

Effect

Order of efficient causes

<u>Definitions:</u>

Efficient cause was one of several types of causes defined by Aristotle. It is what we now generally consider 'the cause' to mean—that is, it directly brings about the 'effect', and it immediately precedes the 'effect'.

<u>Axioms:</u>

Axiom 2.1: There exists an order of efficient causes.

Axiom 2.2: Any thing exists at exactly one point in time.

Axiom 2.3: To remove the cause is to remove the effect.

<u>Propositions:</u>

Proposition 2.1: No thing is its own efficient cause

Proof:

An efficient cause immediately precedes the effect

Therefore, in order for a thing to be its own efficient cause, it would have to

precede itself.

This is impossible by Axiom 2.2.

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Proposition 2.2: in an order of efficient causes, it is impossible to regress infinitely

Proof:

By contradiction

Assume some order of efficient causes can be traced back infinitely

There then exists no finite original cause

Therefore, by Axiom 2.3, there can exist no subsequent effects, since we have

nothing to cause them.

By the current existence of the universe, this is plainly a contradiction

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Corollary: There exists some first efficient cause for the universe.

Definition:

Define **God** to be this first efficient cause.

Problems with the argument:

This also runs into the problem the first way did, namely the problem Aquinas has with

infinite regressions. I do not think his argument against it is satisfactory in this way,

although it certainly is more satisfactory than in the last. I understand his difficulty in

allowing an infinite bound to include a first cause, but I have no difficulty in defining the

causal chain of events recursively, with no stop conditions. This is the sort of thing that

generates infinite sequences such as the Fibonacci sequence, except that we are

regressing backwards rather than progressing forwards. I would suggest that we can

sustain an infinite chain of efficient causes, without requiring a first cause.

His argument also seems somewhat circular—we require that a causal chain cannot be

infinite because a first cause must exist. We then claim that this proves the existence of

some first cause, namely God. Note also that this argument again proves the existence, at

best, of at least one god. It does not prove a singular god, or ascribe to him typical

Christian characteristics besides that of creation.

The third way: from possibility and necessity

Undefined terms:

Thing

To be/exist

Not to be/exist

Cause

Definitions:

A thing is **possible to be** if it is the case that it can either be or not be (exists or

not exist). That is, if it needn't eternally be one or the other.

A thing is **necessary to be** if it is the case that it must be. That is, it can only ever

be in a state of existence.

Axioms:

Axiom 3.1: There exist some things which are possible to be.

Example: A chicken, since it is born and dies, can possibly be (be alive) or not be

(be dead/decomposed/reduced to molecules)

Axiom 3.2: That which it is possible to be or not be must at some point in time

not be.

That is, if a thing is possible, rather than necessary, it must at some point not

exist.

Axiom 3.3: That which does not exist at some point in time begins to exist only

due to something that already exists.

Proposition:

Lemma: If everything is possible to be, then at one time there would exist nothing.

Proof:

If everything is possible, rather than necessary, then everything must at some time not be, by Axiom 3.2

If everything at some time does not exist, then by going either forward in time or back in time sufficiently far, we will come across some time where nothing exits.

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[If this argument seems suspect to you, that is because Aquinas' logic here is misleading. See note below.]

Proposition 3.1: It is impossible, if everything is possible not to be, that anything should exist now.

This follows immediately from the preceding Lemma and Axiom 3.3: if at some point there existed nothing, then at no point could some already existing thing cause anything to come into existence. The result would be that nothing would ever begin to exist.

Corollary: There exists some thing that is not possible not to be.

This follows immediately from Proposition 3.1, when taken with the fact that the universe does indeed exists. The situation hypothesized in the Lemma is clearly impossible. Therefore, the negation of that situation must be true, namely this corollary.

Proposition 3.2: There exists some unique thing which is necessary, and which causes in other necessary things their necessity.

Proof:

By the preceding corollary, there exists some thing that is not possible not to be—that is, some thing that is necessary to be.

This thing must therefore have caused to be some thing that was possible to be.

From this causation, everything else that is possible to be (and that has ever in fact existed), must have been caused either directly or through a chain of causality by this thing.

This thing therefore caused the existence of every thing that is possible to be.

It is however possible that there exist *multiple* such necessary things.

However, every necessary thing either has its necessity caused by another, or not.

By the previous argument of efficient causes, this chain of causality cannot infinitely regress.

Therefore, there must exist some unique necessary thing that causes its own and others' necessity.

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Definition:

Define **God** to be this necessary thing.

Problems with this argument:

First, the 'proof' for our Lemma is clearly spurious. It is entirely possible for all things that are possible to be to have their periods of existence spread evenly over all of time, provided we have an infinite number of such things. This is rather like the fact that the

set of all even numbers is infinite, as is the set of all odd numbers. Not all numbers are even, but that is not the same as to say that there is some large range on the number line where there exist no even numbers.

We finally have an argument of Aquinas' that actually tries to prove the uniqueness of god, in proposition 3.2. However, his argument for the uniqueness relies on the implicit assumption that the argument from efficient causes produced a unique god. Therefore, Aquinas has failed in his attempt, since we have already decided that the god produced by efficient cause needn't be unique. Once more, he does not ascribe to this god any of the typical Christian traits. This, as you have probably guessed, is a theme of all of the five ways, probably because he saw that the Christian concept of an 'all good' God was open to objections. Before his embarking on the five ways, Aquinas lists a few objections people may raise to the existence of God, one of which is the classic argument that if God is infinitely good, why would evil exist? By not proving an infinitely good God, but merely a creator, Aquinas sidesteps this issue.

The fourth way: from the gradation to be found in things

Undefined terms:

    Thing

    Good

    Goodness

    Resembles

Genus

Axioms:

Axiom 4.1: Some things are more good than others

Axiom 4.2: There exists some thing of maximal goodness.

Axiom 4.3: The maximum in any genus is the cause of all in that genus

Example: a fire is the maximum in the genus of heat, and causes all other heat.

Definitions:

One thing is **more good** than another if it more resembles some thing of maximal goodness.

Propositions:

Proposition 4.1: The thing of maximal goodness is the cause of all goodness (where "goodness" includes existence "and every other perfection").

Proof:

This follows immediately from Axioms 4.2 and 4.3

Definition:

Define **God** to be this thing of maximal goodness.

Problems with this proof:

I am dissatisfied with Axiom 4.2, and by extension the definition of "more good". I do not think that the concept "better" should be defined this way, or at least would prefer it to require that the things being compared were compared in some minute portion of their being. For example, object A may be better in some small regard than object B, but not in all regards. Some people, for example, are more intelligent but less healthy.

Presumably the thing of maximal goodness would be maximal in all respects, and so a straight comparison between objects A and B to this 'God' should be impossible.

I also question Axiom 4.3. His example of fire was reasonable for the time—assuming the sun to be fire. Nonetheless, I do not think his claim is sufficiently obvious to be an axiom, nor could I see any way in which he tried to prove it or in which I could prove it for him, and so I could not turn it into a Proposition. Indeed, I do not think this claim can be proved.

In all, this is the least satisfying of Aquinas' arguments. Again, note, his God is nothing but a creator. It is also possible that more than one thing could be of maximal (and equal) goodness, resulting again in a lack of monotheism.

The fifth way: from the governance of the world

Undefined terms:

Object

Action

Desirable

Design

Definitions:

An object is **unintelligent** if it is unable to act designedly

An object acts **for an end** if it acts designedly.

<u>Axioms:</u>

Axiom 5.1: Any repeated action that brings about a repeated and desirable result must be by design.

<u>Propositions:</u>

Proposition 5.1: There exist things lacking in intelligence that act for an end.

Proof:

There exist objects lacking in sentience that repeatedly act in a way so as to produce the best result, such as the tilted axis of the earth producing seasons or the water cycle producing irrigation.

By axiom 5.1, these objects must be acting by design and consequently for an end.

Proposition 5.2: Unintelligent objects that act for an end must be directed by something other than themselves that has intelligence.

Proof:

This follows immediately from Proposition 5.1 and the definition of unintelligence.

Proposition 5.3: There exists some being by whom *all* natural things are directed to their end.

<u>Definition:</u>

Define this being to be **God.**

<u>Problems with this argument:</u>

There seems to be no proof for Proposition 5.3, no matter how generously I think. There could perhaps be an arbitrarily large number of beings, each directing some number of unintelligent objects. Aquinas may have proved the existence of intelligent directors, but certainly not of only one.

Indeed, I disagree with Axiom 5.1. I am perfectly comfortable thinking that random actions could after millions of years of evolution end up being beneficial to the creatures that developed during those repeated random actions. The actions in question needn't be designed. This argument is logically equivalent to the famous "watchmaker" argument, which states that the world is full of such amazingly well-crafted things (such as the eye) that it must have been made by some incredibly intelligent creator. Evolution can even be considered such a well-crafted process that *it* must have been made by the aforementioned creator.

At this point, we begin to see how this is equivalent to Aquinas' fifth way—at some point, there must be an intelligent design behind such obviously beneficial actions that evidently do not happen at random, since they repeat. I maintain, however, that random actions *can* repeat, and that 'benefits' will naturally occur to things that evolved because of the repeating random actions. This comes down to Aquinas' ambiguous undefined term "desirable" and the confusion it causes.

<u>Conclusion</u>

In all, this seems to be a useful way to look at philosophical arguments. By splitting each component of the argument into separate proofs, we are more able to identify possible flaws. Additionally, deciding which statements are provable postulates and which are axioms that must be accepted makes it easier to analyze an argument from the beginning. Many philosophical arguments are valid but have axioms that some readers may not agree with—in philosophy, this does not invalidate the argument, while in mathematics it would. By identifying axioms and postulates, we can more easily decide if it is the argument that fails or the author's assumptions. On the whole, mathematics and philosophy seem to use similar methods. The only real difference is in their treatment of axioms; while a philosopher is bound by custom to accept any collection of assumptions and to judge arguments based on the ensuing logic rather than these foundations, a mathematician is at liberty to quibble over premises. Axioms that do not seem obvious can cause debate—Euclid's fifth postulate would never have tormented philosophers as much as it did mathematicians.

<u>Works Cited:</u>

Aquinas, St Thomas <u>Summa Theologica: Literally Translated by Fathers of the English Dominican Province</u> Benzinger Brothers, Inc., New York 1947