Cosmological arguments for the Existence of God
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In its most basic form, a cosmological argument attempts to understand and answer the question 'Why is there a universe rather than nothing at all?'

Why bother with proving God's existence?

The world is divided into two kinds of people: those who believe in God, and those who don't. So in trying to prove the existence of God one has to ask: Who are such proofs actually for? Believers don't need proofs; atheists don't want proofs, and wouldn't recognize them as proofs anyway. So why persist with them? This is an important point: it seems futile trying to prove the existence of God to someone who doesn't believe in God and who won't budge on this. As anyone who has studied one of the proofs of God's existence will know, for every premise there's a problem, for every conclusion there's a fallacy, for every reason there's a chasm of missing evidence.

So why bother with proofs? We could say they are part of the history of ideas: Great thinkers proposed these arguments, so they are worth learning about irrespective of their effectiveness as proofs. Or we could say they provide an intellectual workout that can sharpen our critical skills, and prepare us for arguments that really count. Or perhaps the proofs are worth pursuing in order to snare the handful of genuinely open-minded (as opposed to couldn't-care-less) agnostics who waiver between belief and non-belief.

Different types of cosmological argument

The proofs often considered to have the most philosophical bite are the cosmological arguments. You have to be particularly cynical or shortsighted to look up at the sky on a clear, light-pollution-free night and fail to wonder where it all came from.

For many people the very existence of the universe poses the questions: where did it come from, why is it here? There is something satisfying about simplicity, but wouldn't it be simpler if there were nothing at all? No humans, no planets, no sun, no universe. So why is there something rather than nothing?

Cosmological arguments for the existence of God take the universe as a starting point, and seek an answer as to why it exists. There are many different cosmological arguments, but there are three main types:

1. Some cosmological arguments propose that the universe had a beginning and that only God could have caused this beginning. These are known as kalam arguments, and several were offered by Islamic scholars in the middle ages.
2. Other cosmological arguments notice that everything within the universe is dependent upon something else within it for its existence, and that the universe itself is dependent upon God. These types of argument are known as contingency arguments.
3. A third group of cosmological arguments draw on the causes and effects that the universe is composed of, and conclude that the universe itself must have a cause, which must be God. These are known as the causal cosmological arguments. We look at an example of this type of argument in the rest of this article.

What all these arguments appeal to is our intuition that the existence of the universe (along with everything else) needs an explanation. In its most basic form, a cosmological argument attempts to understand and answer the question 'Why is there a universe rather than nothing at all?' Many people feel that the existence of the universe demands an explanation, that there must be some reason why it is here. The cosmological arguments propose that an explanation for the existence of the universe cannot be found within the universe, but must be located in some external source or cause. This external cause, the arguments claim, must be God.
A causal cosmological argument

In his book *Summa Theologica* St Thomas Aquinas (1224-1274) offered five ways in which God’s existence can be demonstrated, and the first three ways are all forms of cosmological arguments. Here is Aquinas’ second way of proving God’s existence, which is a type of causal argument:

In the world of sensible things we find there is an order of efficient causes. There is no case known (neither is it, indeed possible) in which a thing is found to be the efficient cause of itself: for so it would be prior to itself, which is impossible. Now in efficient causes it is not possible to go on to infinity, because in all efficient causes following in order, the first is the cause of the intermediate cause, and the intermediate cause is the cause of the ultimate cause, whether the intermediate cause be several, or one only. Now to take away the cause is to take away the effect. Therefore, if there be no first cause among efficient causes, there will be no ultimate, nor intermediate, cause. But if in efficient causes it is possible to go on to infinity, there will be no first efficient causes; all of which is plainly false. Therefore it is necessary to admit a first efficient cause, to which everyone gives the name of God.

This is a pretty dense set of claims, and Aquinas’ argument is seeped in the scholastic assumptions and jargon of his day: efficient causes, ultimate causes, intermediate causes, things not causing themselves, things going back to infinity. But we might start to make his argument 21st-Century-friendly by picking out the key moves Aquinas makes:

1. There is an order of efficient causes (every event has a cause)
2. Nothing can be the cause of itself
3. Imagine this order of causes goes back infinitely - then there would be no First Cause.
4. But if you take away the cause then you take away the effect.
5. If 3. and 4. were true then there would be no subsequent causes, but this is false
6. (conclusion) There must be a First Cause (the source of all causes) and this we call God.

The argument starts from a position we can all understand, namely that everything has a cause (in Aristotelian terms an 'efficient cause'). Why was there a war in Europe between 1914 and 1918? You might not know exactly what caused the First World War, whether it had one or several causes, or whether the demise of Franz Ferdinand had anything to do with it. But you would find it odd to learn that it had no cause, that a conflict which resulted in the slaughter of tens of millions of men had spontaneously erupted out of nothing. The ‘why?’ questions that children ask can be applied to everything, because it seems everything has a cause.

Aquinas' next assumption is a fairly standard one in medieval philosophy. ‘Nothing begets itself’ wrote St Augustine (354-430) - and Aquinas also held this to be true on the reasonable grounds that if something could be the cause of itself then it would mean it existed prior to itself, which is rather odd.

An ancient *reductio ad absurdum*

The next three premises of Aquinas' argument stem from the work of the ancient Greek philosopher Aristotle (384-322 BCE). Aquinas was famously committed to reconciling the philosophy of Aristotle to Christianity. He was often very explicit about this (quoting from The Philosopher, as he called Aristotle, to support his arguments) although in this set of arguments Aquinas is more reticent about his influence. But premises 3. 4 and 5 hinge on Aristotle's maxim that "The series must start with something, since nothing can come from nothing."

Like Aquinas, Aristotle believed that all changes in the universe must come from some ultimate source. In the *Metaphysics* he put forward an argument to prove that there must be an 'unmoved mover' who is the ultimate cause of the universe. His argument asks us to consider two competing claims: first that the universe has an ultimate cause, and secondly that the universe has no ultimate cause. By showing that the second claim is plainly false. Aristotle leaves us with only one option, namely that there is an ultimate cause. We can represent his attack on the second claim as follows:
1. The chain of causes and effects has no beginning; there is no ultimate cause:

2. (From 1.) In which case nothing caused the chain:

3. But if nothing caused the chain there would be no chain at all (one of Aristotle’s metaphysical assumptions is that nothing comes from nothing).

4. However, there clearly is a chain of causes and effects, as the universe around us exists. So the original assumption (that there is no ultimate cause) must be false. The only other possibility is that there is an ultimate cause, one that lies behind the chain of causes and effects, and which itself has no cause.

The argument we have presented here, on the basis of Aristotle’s argument, is known as a reductio ad absurdum. This means taking a point of view and reducing it to absurdity in order to show that it is false. The absurdity here is in step 3 as clearly there is a chain of cause and effect: after all, the universe undoubtedly exists. But as step 3 follows on from step 2, and step 2 follows from step 1, Aristotle feels entitled to reject these claims as well. Having shown that step 1 - that the chain of causes has no beginning - is false, he has proved that there must be an ultimate cause, which itself has no cause.

For Aquinas Aristotle’s argument was still missing something. After all Aristotle was a pagan, and when he talked about an unmoved mover, or even a deity, he wasn’t talking about God in the true, Christian, sense of the word. So Aquinas felt that he was enriching Aristotle’s argument, by using it to prove the existence of God proper. But how successful is Aquinas’ causal cosmological argument? We can get a measure of its success by looking at some of the common criticisms made of it.

Problem 1: Does this prove only that God was a domino-flicker?

When we consider the chain of causation, it is easy to think of it temporally, with each event preceding and causing the next event. On this interpretation, a cause refers to the factor that brought about the effect. The chain of causation is thus one that goes backwards in time, with God, the First Cause, at the beginning starting the whole thing off, rather like a hand knocking over the first of a chain of dominos, or winding up a clockwork machine.
**God as the (temporal) first cause**

If we take the 'temporal' interpretation of causation then the cosmological argument seems to show that a First Cause, God, once existed and once created the universe. However, it is crucial to believers that God is still present to act upon the world and still cares about the world; this after all is the God of Abraham, the God described in the Bible. So the 'domino-flicking' First Cause may have satisfied a pagan philosopher such as Aristotle, but such a view is not one that a Christian philosopher such as Aquinas could subscribe to.

However, there is another interpretation of the chain of causation that lends itself better to the belief that God, as the First Cause, is acting on the world here and now. This interpretation sees 'causation' in terms of the factors that sustain an event, or keep it going once it has begun. For example, a farmer may plant a seed, and so cause the seed to grow in that patch of land, but it is the particular qualities of the seed, together with a fertile environment, that sustain its growth into a mature plant. The chain, or order, of causation can be thus seen as a hierarchical one with God as the ultimate sustaining cause of the universe. As believers say, God is the constant creator of the universe.

**God as the (sustaining) First Cause**

In the diagram below we can imagine tracing the cause of a tree back to its seed, then to the weather conditions that enabled the seed to grow, then to the movement of the earth round the sun that created the weather conditions. The cosmological argument claims to show that ultimately it is God who causes all these things.

**Problem 2: Why must everything have a cause, except God?**

At first sight Aquinas' argument appears to rest on a contradiction. On the one hand Aquinas says that everything must have a cause (nothing can cause itself), but on the other hand he concludes that something must exist that can be the cause of itself, namely God. So the original assumption is contradicted by the conclusion.

A defender of a cosmological argument might say that this is precisely what the *reductio ad absurdum* is supposed to prove: that there has to be at least one exception to the rule 'everything must have a cause'. If there weren't such an exception, then the universe would have no cause and would never come to exist. But if there is an exception, let's call it the First Cause, then it must be something without a cause, in Aristotle's terms an 'unmoved mover'. This defence has similarities to the ontological argument, namely that when we are talking about God we are dealing with a being unlike anything else, a being who has a special form of necessary existence.

However, a critic might come back with the response that if we're going to allow for exceptions to the rule 'everything must have a cause' then why make God the exception? Couldn't we just as well make the material universe itself the exception? This is what David Hume (1711-1776) suggests in his *Dialogues Concerning Natural Religion*: "It must be some unknown, inconceivable qualities which can make [God's] non-existence appear impossible: and no reason can be assigned why these qualities may not belong to matter."
In other words believers say that God has some special property (called 'necessity') which means he doesn't have a cause. But Hume says that the material universe may well have this special property. In which case the existence of the universe requires no further explanation: it simply is. This would rule out the need to posit God.

Alternatively, it can be asked of the Cosmological argument, why God must be the ultimate cause and why God is the point at which our search for an explanation for the existence of things must end. Why, in other words, does the existence of God not require any further explanation? Hume offers another warning against searching for an explanation beyond the physical universe: "If the material world rests upon a similar ideal world, this ideal world must rest upon some other: and so on, without end. It were better, therefore, never to look beyond the present material world." ~

Why stop our explanations at God?

Hume suggests that seeking explanations beyond the physical universe will lead to an infinite regress of explanations. So perhaps we would do better to stop our search for explanation with the universe: either accept that it has no explanation, or find an explanation for the universe that lies within the universe.

Problem 3: Is an infinite regress really that absurd?

A further criticism arises from Aquinas’ claim that an infinite regress of causes or movers is absurd. Aquinas seems to be confusing a (very long) finite chain of causes, for which there would indeed have to be a first cause to begin the chain, with an infinite chain of causes. In the first instance, it’s true, if you take away the first cause, then everything else disappears. But in the second instance there is no first cause to take away, the series of causes is infinite. J. L. Mackie (1917-1981) gives the example of a series of hooks, all hanging from each other. With a finite series of hooks, each one hangs on the one above it, until we reach the last (or first) hook, which must be attached to something. If you take away the wall attachment then the hooks must fall, which is how Aquinas seems to be imagining the chain of causes and effects. But with an infinite series of hooks, each is attached to the one above, and so on forever: there is no first hook attached to a wall.

Brian Davies says that this type of attack on the Cosmological argument reminds him of a story he read in a newspaper: a farmer who kept ferrets found one day that they had all vanished. The farmer concluded that they must have eaten each other. For Davies there is a genuine difficulty with the idea of an infinite regress: just as it is not possible for the ferrets to have eaten one another (there must have been one very fat and satisfied ferret left at the end), so it is not possible for the series of causes and effects to go back infinitely (there must be a cause for the series).

There must be a last ferret that ate all the other ferrets

Philosophical critics of Cosmological arguments seem prepared to admit that an infinite regress is after all possible, and that there is no need to postulate a 'First Cause'. However, by admitting this possibility such critics might be undermining a key weapon in the armoury of philosophy, what we might call the 'infinite regress fallacy'. Philosophers often aim to show a position is flawed precisely because it results in an infinite regress. However, we've just seen that some critics of Cosmological arguments are proposing an infinite regress of causes as a coherent and valid alternative to a First Cause. Such critics can’t have it both ways: either they hold onto the infinite regress fallacy, which is a useful tool against many a suspect
idea, or they discard the fallacy in order to undermine such Cosmological arguments. James Sadowsky says that philosophers stand to lose more by jettisoning infinite regress fallacy, than by abandoning this line of attack on Cosmological arguments.

**Problem 4: What is causation anyway?**

It is possible to criticize the argument from causation by questioning Aquinas' account of causation. One of Aquinas' main premises is the assertion that there is a series of causes such that every effect has a cause. Hume, a famous sceptic, put forward a view of causation that, if correct, undermines Aquinas' assertion Hume believed that we never actually experience causation; it is something our minds impose upon our perception of the world as a result of past experience. So, although we think we see one snooker ball cause another to move when it strikes it, all we in fact see is one ball move toward another until they touch, then the second ball move away (see below). We add the concept of 'cause' to this experience, once we have seen it happen frequently enough, but we can easily think of a particular event as not having a cause. If Hume is right, then we have no knowledge of any 'chain of causes and effects', and this goes someway to undermining the first premise of causal Cosmological arguments like Aquinas' second way.

![Diagram of snooker balls and causation](image)

According to Hume we do not observe 'causation'

1) We observe the first ball roll towards the second ball and make contact
2) We then observe the second ball roll away from the first

However, Hume's account of causation is a highly controversial one that many philosophers have taken exception to. A defender of Cosmological arguments such as G.E.M. Anscombe would say that Hume’s concept of causation is strange, stemming from an unreasonably sceptical view of the world. Anscombe agrees that it may well be possible for us to imagine an event without having one cause or other. For example in the diagram above we can imagine that the first snooker ball didn't cause the second ball to move; perhaps it is a trick snooker table where the balls are moved by hidden magnets or wires. But even if it is possible to imagine an event without the cause we think it has, it is impossible for us to imagine an event as genuinely having no cause at all. And so long as every event has some cause or other, then Aquinas' argument can indeed get off the ground.

Bertrand Russell suggests that a further angle of attack on Aquinas' concept of causation might be drawn: from quantum physics. Since the 1920s theoretical physics has raised the question of whether there are indeterminate events taking place at a sub-atomic, quantum, level that have no cause at all. This invites the possibility that other events have no cause, including the appearance of the universe itself. If this is a genuine possibility then it undermines Aquinas’ first premise: the claim that every event must have a cause.

**Problem 5: The fallacy of composition**

As well as his scepticism about the concept of causation, David Hume offered a further criticism of Cosmological arguments that could undermine Aquinas' position. Hume argues that if we have explained the cause of each event in the series, then it is unreasonable to ask what caused the whole series. Take any series of events; let's say the separate appearance of five people from Russia in New York. Upon investigation we find that each of the Russians is there for a different reason, and we are able to fully explain their presence in New York. According to Hume it would be unreasonable for an investigator to then say 'I agree you have explained why each Russian is here, but I want to know why these five Russians are all here'. There is nothing more to say: an explanation of why each individual is there is enough; to demand an explanation of the whole group is unreasonable. This has become known as the ‘fallacy of composition’: it is the fallacy of thinking that because there is some property common to each part of a group, therefore this property must apply to the group as a whole. (This fallacy can easily be tested at home: line up all your favourite food in the kitchen - chilli, chocolate, onion,
cheesy crisps, *pizza*, cola, ice cream, whatever - now bung all these tasty foods together into a saucepan, stir them round, and test whether the combination is also tasty.)

Bertrand Russell gives a further example of this fallacy of composition: it is true that every member of the human species has a mother, but it is a mistake to conclude from this that our species as a whole must have a mother. Similarly, every event within a series may indeed have a cause, but it is a fallacy to conclude that the whole series must have a cause. So 'cause and effect' is taken to be a concept which applies to events occurring *within* the universe, but it is an error to then try to apply the concept to the universe as such. If Hume and Russell are correct, then Aquinas is mistaken in thinking that there must be a First Cause that started the chain of cause and effects, and this version of the cosmological argument fails.

**Refusing to play the game?**

Clearly this kind of 'positive suggestion, negative criticism' is annoying and frustrating to philosophers who believe in God. It's as if there is nothing they could say to the atheist that would make them change their mind. And unfortunately that's probably true.

In a now-famous radio debate between Father Copleston (an expert on Aquinas) and Bertrand Russell, Copleston pushes Russell on what he actually thinks about the question 'what is the cause of the universe'. Russell's reply is simple, "*I should say that the universe is just there, that's all.*" For Copleston this is a cop-out and he later said, "*If one refuses to even sit down at the chess board and make a move, one cannot, of course, be checkmated.*" In other words it seems to Copleston that by refusing to ask the question 'why is there a universe?' or 'what caused the universe?' or 'why is there something rather than nothing?' - or by refusing to accept these as meaningful questions - then Russell is avoiding any awkward answers, including the possibility that there might be a God. As Brian Davies says "*to exclude this possibility at the outset is to beg the question at issue.*"

But this criticism of the atheist, as someone who refuses to engage in dialogue, doesn't seem quite right either. It isn't as if Russell, Hume and other critics of the cosmological argument have rejected it out of hand. They have genuinely engaged in debate and concluded that questions about why the universe is here, which believers find so compelling, are rather odd and even meaningless questions. But they arrived at this conclusion through thinking about it, rather than through a careless dismissal of the issue as a real one. For some people, the existence of the universe does not pose a question that needs answering, and is not an event that needs explaining.

So to return to the question 'why bother with proofs' it might be more enlightening to conceive of the arguments not as proofs that might be used to sway a non-believer, but as expressions or explorations of personal faith. Herbert McCabe said that proving the existence of God was important because it validated a whole range of intellectual activity, which was a part of human flourishing: "*To prove the existence of God is to prove that some questions still need asking, that the world poses these questions for us.*"