

DOES GOD EXIST? THE COSMOLOGICAL ARGUMENT

The word “cosmos” is a Greek word that refers to everything that exists—the universe itself and everything in it. The cosmological argument for the existence of God tries to show that because anything exists there must be a God who brought it into existence. In other words, without God to create it, nothing would or could exist. It’s possible for God to exist without the universe, but it is not possible for the universe to exist without God. Thus, the cosmological argument tries to show that the universe is not a necessary being. This means the universe relies on something for its existence; it is contingent and therefore cannot account for its own existence. The goal of the argument is to show that the universe was caused by an agent that is not part of the universe, has no cause itself, and is personal.

There are several kinds of philosophical cosmological arguments, but we’ll focus on what is called the Kalam Argument because of its forcefulness and because understanding it often helps understand the others. The Kalam argument tries to show that the universe is not eternal—that it had to have a beginning and that the beginning was caused by person. Although this argument was first formulated by Christian philosophers, it was not until medieval Islamic thinkers devoted attention to the argument that it found its full force. Kalam is an Arabic word that can be translated “talk” or “speech” though it means something closer to “philosophy” or “theology.”

The argument hinges on three sets of alternatives. The universe either began or had no beginning, either it was caused or uncaused, and if it was caused the cause was either personal or impersonal.

At the core of the argument is an understanding of the difference between a potential infinite and an actual infinite. Potential infinities are sets of numbers that are continually increasing by adding another number to the series. For example, the seconds on this counter are potentially infinite. Once the count began, a set of numbers was generated and will increase until we move on to the next point. If we never move on, the seconds will potentially accrue forever. But no matter how long we let it sit here and add up, the number will never get so big that it turns infinite. There will always be a finite number that we can add another increment to.

Actual infinities are sets of numbers to which no increment can be added since, by nature of their infiniteness, the set includes all numbers – there is nothing to add. If this is hard to imagine, there is good reason: actual infinities do not exist and cannot exist in the physical world. If actual infinities did exist in the physical world, we would see absurdities and effects we literally could not live with.

For example, here we see the earth rotating around the sun and the moon rotating around the earth. Which is happening more often: the moon going around the earth or the earth going around the sun? Clearly the moon makes more rotations around the earth. Now, if the universe was infinitely old, which would make more rotations: the moon or the earth? The answer is they would be equal; they both would have made an infinite amount of rotations. Even though the moon has made 12 times the number of rotations of the earth, they have made the same

amount! It is an absurdity that cannot exist in reality.

Or, let's say you had a CD collection that was infinitely large and each CD had an infinite number of songs on it. If you listened to one CD you would hear as much music as if you had listened to all of the CDs—an infinite amount—and yet those infinities are of different sizes—a nonsensical notion. Let's also say that there were only two artists in your CD collection, Bach and the Beatles, and that every other CD was by the Beatles. This would mean that you had as many Beatles CDs as you would Beatles and Bach CDs combined; they would both be an infinite number. And would the number of Beatles CDs be odd or even? It must be one or the other, but to speak of infinity in such a way is irrational.

If this makes your brain hurt or is confusing at all then you are beginning to understand why actual infinities do not exist in the real world. These examples are not just interesting brainteasers or puzzles. The fact that if $X=Y$ then X cannot also be twelve times greater than Y is extremely important. You would never want to cross a bridge, ride in a car, or live in a house designed by an engineer who didn't recognize or didn't care about the absurdities of actual infinities.

This demonstration of the non-existence of actual infinities is important to us in two real-world areas, time and causality. The best way to show that time is not infinite, that it had a beginning, is to observe that there is a "now." If now exists then time cannot be infinite. To show this, picture the moment "now" as a destination, like a train station. Then picture time as train tracks that are actually infinitely long. If you were a passenger waiting on the train to arrive, how long would you have to wait? The answer is: forever. You can never reach the end of infinity; thus, infinitely long train tracks cannot ever be crossed. There is no end to arrive at, no station. If infinitely long train tracks could be crossed, they would be the equivalent of a one-ended stick, a nonsensical notion. In fact, this is the opposite limitation of potential infinities. Just as potential infinities are finite numbers that can never turn infinite, actual infinities could never reach the end of their infiniteness and turn finite. But there is an end, a "now"; the train did arrive at the station. This means the tracks of time cannot be infinitely long. There cannot be an infinite number of preceding moments prior to the present moment. The past is not an actual infinity. Thus, the universe had to have a beginning.

The universe, however, did not cause itself to spring into existence. If it had a beginning, then something began it. This is where causality comes into the picture. There is no such thing as an effect that was not caused. You are an effect of the biological process caused by your parents. These words you now hear were caused by my using my voice. The current state of the universe is an effect caused by various astronomical and physical conditions. But notice that each of the causes mentioned are also effects. For example, your parents are not only your cause, but they are the effects of their parents who were the effects of their parents, and so on. But, as the non-existence of actual infinities shows, the chain of causes cannot regress forever. The train station in this case is made of present causes; because we have causes now, there must be a beginning to the sequence. Thus, there must be a cause that is not an effect, an uncaused cause, or first cause. Since the universe had a beginning and is an effect, it must have had a cause itself.

At this point there are only two options: either the cause was personal or it was impersonal. Let's think about what this uncaused cause would look like. The first cause be non-contingent, meaning that its existence depends on nothing but itself. If it was contingent, then it would simply be one more effect in the chain of causes and effects. It must also be transcendent. This means the cause of the universe must exist outside of and apart from the universe. And because

this being exists apart from the universe it must be immaterial. If it was material then it would be part of the universe. The first cause would have to have the power to create the universe. Without this ability nothing could be created. But these things are not enough to bring the universe into existence. There also needs to be a desire to create, a will to make the universe. Without this will to create, nothing would be created because the power to create could not be acted on. Now add all these things together. What kind of thing

- relies on nothing for its existence
- exists apart from the universe
- is immaterial
- has the power to create something from nothing
- a will to do it or not do it

Does this sound like a personal or impersonal being? Personal, of course. The ability to will is an attribute that belongs only to persons. Thus, the Kalam argument brings us to the conclusion that the universe had a beginning that was caused by a personal, powerful, transcendent, self-existing, immaterial being. In other words, God.

A question that frequently arises at this point has to do with God's infinite characteristics. "If there is no such thing as an actual infinite, then how can God be infinitely good or loving?" When we speak of God's infinite characteristics, we are speaking in more of a metaphorical manner. We do not mean that God has an infinitely large quantity of goodness and love with which He funds His grace and mercy. We mean He is the ultimate embodiment of goodness and love. These characteristics are without measure and speak to the quality of His character, not the quantity of His characteristics.

But philosophical arguments are not the only kinds of arguments that demonstrate the universe had a beginning. There are scientific arguments as well. The second law of thermodynamics, for instance, is often used as an illustration. However, the best and most easily understood example may be the big bang theory.

In the 1920s, Astronomer Edwin Hubble discovered that our universe was bigger than previously thought. In fact, it was much bigger. Until he saw outside our galaxy, the prevailing thought was that our galaxy was the entire universe. Hubble was the first to recognize that ours was only one of a vast amount of galaxies.

While he was studying the light from distant galaxies he found it was not what he expected it to be like. He noticed the light was uniformly shifted to the red side of the spectrum. This phenomenon became known as the red shift.

Hubble found an explanation for the red shift by applying the Doppler effect. The Doppler effect says that if sound or light waves are emitted from an object moving toward you, the waves are compressed or shortened. In the case of sound, the shortening of the wavelength increases the sound's pitch. The farther away the object is as it moves towards you, the shorter the wavelength and the higher the pitch. As the object is moving away from you, the sound waves are lengthened and the pitch shifts lower. The Doppler effect is what describes the change in pitch you hear in sirens from ambulances. As the ambulance gets closer to you, the sound you hear drops towards its natural pitch. And as the ambulance gets farther away the siren drops progressively lower than its natural pitch.

Hubble applied the Doppler effect to the light waves he was studying. The blue end of the light spectrum is composed of the shorter wavelengths, while the red end is composed of the longer ones. Everywhere he looked in the universe he saw a shift in the light towards the red end of the spectrum. This meant the stars emitting the light are all moving away from each other. Thus the universe is expanding.

Other scientists took this discovery and built on it. If the universe is expanding, it must have beginning, a point of origin from which it was expanding. Other discoveries were made that showed the expansion is slower now than it was when it began—like an explosion. This explosion became known as the big bang, the beginning of the universe.

The two primary challengers of the big bang theory are the steady state theory and the oscillating theory. The steady state theory argues the universe has always existed and always will exist. There are two problems with this. It does not account for the observations that support the big bang, and it would require the existence of actual infinities. The fact that there is a now makes the theory of an infinite number of preceding moments an impossibility.

The oscillating theory says that the universe will eventually stop expanding and contract back to a singularity which will then explode and continue a cycle that will repeat forever. The problem is a cycle of oscillations without beginning or end would require the existence of actual infinities. But since we exist in the current oscillation, there must be a start to the cycle. The other problem is the second law of thermodynamics. The energy in the universe is not infinite. Just as a rubber ball bounces lower and faster with each bounce until it stops, an oscillating universe would eventually run down. Again, an oscillating universe must have a beginning.

The big bang remains the best explanation for the current state of the universe. But if the big bang was an explosion, why did it explode? What exploded and where did it come from? Explosions are effects and effects need causes—they do not cause themselves. The cause of the big bang is not to be found in the physical universe because that is precisely what exploded. Also, the matter that exploded did not create itself. The non-existence of actual infinities shows that matter cannot be eternal.

So, because the universe had a beginning, something must have initiated it. It did not start itself. The cause of the universe must be found outside of the universe; it must be transcendent. The cause must be powerful in order to create the entire universe out of nothing. The cause must not be an effect, but is an uncaused cause. And this cause must not rely on anything else for its existence; it must be non-contingent—or necessary.

Note that this only describes what is necessary for the big bang to work. But if there is such an entity as the one described it's still not sufficient for the creation of the universe. Just because this entity does exist does not mean the universe must exist. Something is still missing—intentionality, a will to make it happen.

A car that has a working engine, a healthy battery, a properly connected electrical system to start the engine, and is full of gas has all the necessary conditions for running. Yet parking lots are full of cars that have the necessary conditions to run but are not running. Although they have the necessary conditions, they lack sufficient conditions. Cars that are moving down the street have necessary and sufficient conditions for running—that is why they are moving. What do the

moving cars have that the parked cars do not? They have drivers. And what is a driver? It is a personal being that can act on their will. Thus, the universe needs a driver, a personal, intelligent agent that can choose whether to create the universe or not. This necessary and sufficient cause of the universe is what we call God.

It is important to be honest about what the cosmological argument does and does not prove. It does not show that the God of the Bible is the one true God. Remember, this argument is also used in Islamic apologetics. However, the God of the Bible is consistent with the picture of God the cosmological argument describes. If our case for Christianity relied only on the cosmological argument, it would fail. But when we use it in conjunction with other arguments, it is a powerful component of a persuasive case.

ADDITIONAL RESOURCES:

***Apologetics Study Bible* Articles:**

- Does the Cosmological Argument Show There Is a God? by J. P. Moreland, 806.
- Does the “New Physics” Conflict with Christianity? by Jeremy Royal Howard, 1306.
- What is the Relationship Between Science and the Bible? By J. P. Moreland, 1314.
- If God Made the Universe, Who Made God? by Paul Copan, 869.
- How Should a Christian Understand the Age of the Earth Controversy? by Ted Cabal, 877.
- How Should a Christian Relate to a Scientific Naturalist? By J. P. Moreland, 946.

Doug Powell, *The Holman QuickSource Guide to Christian Apologetics*

Chapter 2, Does God Exist? The Cosmological Argument.

DISCUSSION QUESTIONS

1. What religions have a view of the universe that the cosmological argument defeats? (cf. Hinduism and Mormonism both believe in an eternal universe)
2. How would you answer the question, Who made God? (God, by definition, relies on nothing for his existence)
3. Which version of the argument do you think is more useful, the philosophical or the scientific? Why?
4. What would be wrong with using only this argument to demonstrate the truthfulness of Christianity?
5. Can you think of any scripture that supports the cosmological argument? (cf. Gen 1:1; Ps 19:1; Rom 1:19-20)