

Does God Exist?



A Cosmological Answer

Aaron J. Werner

*A Christianity which will bear witness to God's Word in
Jesus will be a speaking, thinking, arguing, debating
Christianity, which will not be afraid to engage in
intellectual and philosophical contest with the prevailing
dogmas of its day.*

Oliver O'Donovan, University of Edinburgh

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Does God Exist?

The question of God's existence is one of the greatest questions in the history of great questions. Since our answer to this question will influence nearly every aspect of your life, we should explore this question assiduously. In my opinion, one of the better contentions for the existence of God is the cosmological argument.

Before we delve into the cosmological argument, however, I feel the need to clarify that belief that God exists does not depend on such arguments. I know that God exists because he has made me in his image, and has created me with a capacity to know that he exists. That capacity is similar to our other senses. For instance, when I look out my window and see flowers blooming, I don't go through a rational argument and then decide that the flowers are actually blooming. Instead, I simply believe that they are blooming. In a similar way, God has programmed humans so that, when our minds are functioning properly, we will believe in Him when we see the proper stimulus or trigger. That stimulus might be something as empirical as creation or as subjective as the Holy Spirit's piercing presence. In short, although I know God exists, I believe I can also show that God exists through reasonable contentions such as the cosmological argument. In other words, although God's existence does not depend on this argument, this argument evidences his existence.

The Cosmological Argument

The cosmological argument is not a particular argument, but a category of similar arguments based on the idea that the *cosmos*, or universe, began to exist at some point in the past. The numerous configurations of the cosmological argument

are based on the premise that nothing happens without a cause. Perhaps the strongest arrangement of the argument is the Kalam version, which makes its case in four stages.¹ **First**, it asserts that everything that has come into existence has been caused. **Second**, it argues that the universe began to exist at some point in the past. **Third**, it concludes that the universe was caused. **Fourth**, the argument attempts to show that the cause of the universe had to be a timeless, non-material, and free-thinking (or personal) agent. One can visualize the argument with the following syllogism:

- (1) If the universe began to exist, then it has a cause.
- (2) The universe began to exist.
- (3) Therefore, the universe has a cause.

Since this is a logically valid argument, *modus ponens*, if the premises are true, then the conclusion is *necessarily* true. The argument's strength, therefore, depends on the truth of its premises. Since many atheistic thinkers are uncomfortable with the implications of the conclusion, many have attempted to reject one of the two premises. Let us, then, attempt to demonstrate the truth of these premises.

Defending Premise (1)

The first premise of the cosmological argument is based on the idea, "Whatever begins to exist has a cause." In other

¹Much of my argument here will follow the one proposed by J. P. Moreland, *Scaling the Secular City* (Grand Rapids: Baker, 1987), 15-43 and J. P. Moreland and William Lane Craig, *Philosophical Foundations for a Christian Worldview* (Downers Grove, IL: InterVarsity Press, 2003), 463-481.

words, everything that has ever begun to exist has been caused by something else. The only things that have not been caused, therefore, are things that have always existed. In short, everything that exists has either always existed, or it was caused to exist by something that has always existed.

First Objection to Premise (1)

Although the truth of this premise seems self-evident, not everyone has universally accepted this idea. These philosophers appeal to quantum physics in an attempt to show that “things” can pop into existence without a cause. Their evidence is based on the Copenhagen interpretation of quantum physics, which suggests that subatomic particles simply “pop” into existence uncaused.

Response to First Objection to Premise (1)

There are at least three problems with this objection. **First**, quantum physics is a poorly understood field of inquiry. Significant scientific progress needs to occur before anyone can say anything remotely definitive concerning quantum physics. In short, quantum physics may not tell the whole story. In fact, given the history of science, scientists will soon replace this theory with a more reasonable alternative.

Second, this objection is not good science. Simply because we do not know what causes these subatomic particles appear, one should not conclude that they are uncaused. Qualitatively, this conclusion is equivalent to the god-of-the-gaps fallacy—the idea that God causes everything we cannot explain. For instance, at one point in human history, humans thought lightning was caused by God. Perhaps, given more time, scientists will be able to discover the causes of quantum

physics in the same way that they discovered the causes of lightning. In his Ph.D. dissertation addressing this matter, Jeremy R. Howard argued that scientists will replace the current Copenhagen understanding of quantum mechanics in the near future for an alternative theory containing greater explanatory power.² In the mean time, we should not necessarily conclude that these quanta are uncaused. Instead, we should confess that although we don't yet know the cause, we will continue our search for the cause. Suggesting that something has no cause is equivalent to saying "We don't know what causes comets, so they must cause themselves." In short, suggesting that there is not a cause for the existence of these subatomic particles is not good science. The most science should say is that we have yet to ascertain the cause of these subatomic particles. Perhaps the cause is very complicated, and, in time, we will be able to ascertain the cause.

Third, if we reject the necessity of causes, then we must ultimately reject science. Science is the pursuit of causes. But, if science determines that it is "scientific" to conclude that causes are not necessary, then science has emasculated itself. In other words, scientists cannot reject this premise without cutting off the very limb upon which they sit. Science depends on the premise that everything has a cause. If certain things can occur without causes, then anything can occur without a cause. Such a philosophy of science would mark the end of scientific inquiry. In short, objections to premise (1) fall short.

²Jeremy R. Howard, "The Copenhagen Interpretation of Quantum Physics" (Ph. D. diss., The Southern Baptist Theological Seminary, 2005), 182.

Second Objection to Premise (1)

Some think premise (1) is easily refuted by saying “If that’s true, then who made (or caused) God?” Normally this response is made with a smug smile. However, those who make this claim do not seem to understand the premise. The premise says, “If the universe began to exist, then it has a cause.” In other words, the argument only applied to anything that begins to exist. If something has always existed, then it does not need to have a cause. If the universe has always existed, then it does not have a cause—it is uncaused.

Defending Premise (2)

Those who do not want to accept the conclusion of this version of the cosmological argument must refute one of its two premises. Since one cannot refute the first premise without undermining the entire academic discipline of science, most scientists attempt to refute the second premise. This premise claims that the universe began to exist at some point in time. Attempts to refute this premise argue that the universe has always existed—that it is *infinitely* old. One can refute the idea that the universe is infinitely old in two ways—one uses scientific evidence and the other uses philosophical evidence. If this refutation is successful, then we will have demonstrated the truth of our premises and the necessity of our conclusion.

Philosophical Evidence that the Universe began to Exist.

There are at least two philosophical reasons to believe

that the universe came into existence. The first is based on the idea that an actual infinite number of anything cannot exist. The second is the idea that even if an actual infinite could exist, one could never traverse an actual infinite.

#1: The impossibility of an actual infinite. The first way to show that the universe (and even time itself) had a beginning is to point out that an actual infinite number of anything cannot exist.³ Although infinity can be *represented* in a mathematical set, an actual infinite cannot exist. The best way to show that an infinite amount of anything (oranges, days, or seconds) is impossible is to assume that an infinite number of things is possible and then show the logically absurd ramifications of this assumption. For instance,

Imagine a library with an infinite number of books. Suppose further that there is an infinite number of red books and an infinite number of black books in the library. Does it really make sense to say that there are as many black books in the library as there are red and black books together? Surely not. Furthermore, I could withdraw all the black books and not change the total holdings of the library. Let us also assume that each book has an infinite number of pages. There would be just as many pages in the first book in the library as there are in the entire, infinite collection. If someone read the first book, she would have read just as many pages as someone who read every page of every book in the library.⁴

³I am aware that some philosophers are not convinced that an actual infinite is impossible. For instance, R. Douglas Geivett has argued, “I have not been able to convince myself that actually infinite sets are impossible” (*To Everyone an Answer: A Case for the Christian Worldview*, 64). Geivett’s primary objection to the impossibility of an actual infinite is the set of all natural numbers. However, since I am arguing against the existence of an actual infinite number of material things, his objection seems irrelevant to my formulation of the cosmological argument.

⁴J. P. Moreland, *Scaling the Secular City* (Grand Rapids: Baker, 1987), 23.

A **second** instance of the absurdity of an actual infinite involves thinking of our solar system. Suppose that the moon has been revolving around the earth for an infinite amount of years, completing about twelve revolutions per year. Likewise, suppose that the earth and the moon have been revolving around the sun for an infinite amount of years, completing one revolution per year. If an actual infinite is possible, then the number of revolution of the earth around the sun and the moon around the earth are equal—they are both infinite, even though the moon completed twelve times as many revolutions as the earth each year. Clearly, the possibility of an actual infinite is irrational.⁵

A **third** way to see the impossibility of an actual infinite is to think of an infinitely large piggy-bank. Suppose this piggy-bank is filled with an infinite number of pennies. Then suppose that you need some cash, so you remove one million dollars worth of pennies from your bank. Has the value of your asset changed? No, not a bit—despite the fact that you just spent a million dollars, you still have the same amount of money in your bank. Clearly, we would let no one holding such beliefs run our banks. Yet, we pay college professors thousands of dollars to teach our children that the universe began an infinite number of years ago. Clearly, it's more reasonable to conclude that the universes had beginning.⁶

⁵Many reasonable thinkers have objected to the intuitive conclusions revealed by these puzzles. For a detailed rebuttal of their objections see *Scaling the Secular City*, 24-28.

⁶Incidentally, the impossibility of an actual infinite is also an excellent argument against Mormonism, which teaches that there has been an infinite regression of gods.

#2: The impossibility of traversing an actual infinite.

Even though the existence of an actual infinite appears irrational, let's suppose—for the sake of argument—that an actual infinite is possible. Before we proceed, however, we must reconsider the nature of an infinite. If an infinite actually exists, then it must exist all at once, for an infinite cannot grow—it's already infinitely large. One cannot add anything to an actual infinite. Therefore, even if an actual infinite exists, then it would still be impossible to traverse or cross it. For instance, suppose the universe, is an infinite number of years old. If so, then chain of events that brought us to today would not have occurred yet. In other words, if the universe was created an infinite number of years ago, we would never have reached today. The chain of events that brought us to today must have had a starting point—if not, the chain of events (let's call them hours) would not yet have been completed. The reason this is true is the same reason it is impossible to count to infinity—or to count down from zero to negative infinity—for counting only creates a larger and larger finite set that can never (by definition of the nature of an infinite) be an infinite set.

One way to understand this idea is to reconsider the infinitely large piggy-bank holding an infinite number of pennies. Suppose someone began removing pennies from the piggy-bank at a rate of one penny per day, an infinite number of days ago. Would the bank be empty yet? No, the bank could never be empty, because there would always be an infinite number of pennies to remove and an infinite number of days in which to remove them. Hence, the number of pennies would never change. In the same way, if the universe began an infinite number of days ago, and each day we

removed one day from our piggy-bank of days, we would not have reached today yet.

Objection: Is God Infinite? Some philosophers suggest that if these philosophical arguments are successful at disproving the possibility of an actual infinite, then they also disprove the possibility of an infinite God. In other words, if an actual infinite cannot exist, and God is an actual infinite, then God cannot exist. According to William Lane Craig, the solution to this dilemma involves understanding the difference between a mathematical infinite and a theological infinite. Craig claims,

the mathematical notion of an actual infinite is a *quantitative* concept. . . . But when theologians speak of the infinity of God, they are not using the word in a mathematical sense to refer to an aggregate of an infinite number of elements. God's infinity is, as it were, qualitative, not quantitative. It means that God is metaphysically necessary, morally perfect, omnipotent, omniscient, eternal, and so on.⁷

Craig continued, “Infinity is just a sort of umbrella term used to cover all of God's superlative attributes. If you abstract away all of those attributes, there really isn't any distinct attribute called ‘infinity’ left over.”⁸ Craig concluded, “denying that God is actually infinite in the quantitative sense in no way implies that God is finite. This inference does not follow, since the quantitative sense of infinity may be simply inapplicable to God.” In short, the argument against an actual infinite number of things does not apply to God, for God is not a infinite in the sense that things are infinite. God is not growing older, for he is outside of time. The universe,

⁷William Lane Craig. www.reasonablefaith.com. Accessed 22November 2011

⁸ Ibid.

however, is growing older, and therefore cannot be infinite, for an infinite cannot increase. In other words, as discussed under point #2, if an actual infinite is possible, it would have to exist all at once—for infinities cannot grow. Hence, even if God is an actual infinite, he exists “all at once” and is complete. The universe however, is getting older, and therefore cannot be an actual infinite.

In short, the philosophical evidence against an actual infinite seems convincing. Likewise, the philosophical evidence against the possibility of traversing an actual infinite appears compelling. Therefore, it is reasonable to conclude that the universe had a beginning as some point in the finite past. In other words, the universe began a finite number of moments ago.⁹ However, some skeptics may not have been convinced by these philosophical arguments. Perhaps the following scientific arguments will compel the unconvinced.

Scientific Evidence that the Universe began to Exist.

There are at least two scientific reasons to believe that the universe came into existence. These reasons include 1) the second law thermodynamics, and 2) the big-bang cosmology.

One: The second law of thermodynamics. The second law of thermodynamics—one of the most well established laws in science—states that energy and matter will ultimately achieve equilibrium. According to this law, the matter in a closed system (a system that does not receive energy from an outside source) will eventually achieve entropy—the state of

⁹Whether or not that moment was fifteen billion years ago or six thousand years ago is irrelevant to the argument.

lowest potential energy, or maximum disorder.

One way to visualize the concept of entropy and the second law of thermodynamics is place a drop of dark blue food coloring into a glass of water. At first, the drop of coloring will appear concentrated in one part of the glass. Eventually, however, the molecules begin to diffuse. In time, the blue molecules become so evenly distributed that they reach what scientists call equilibrium—the uniform distribution of every molecule in the glass. The same thing is happening in the universe. Everything, as a whole, is spreading out, slowing down, or burning up. For instance, the earth’s rotation is slowing down and will eventually stop, the sun is consuming its fuel source and will eventually cease, and the universe is spreading out like a drop of food coloring in a glass of water. Given enough time, universe will be comprised of a thin, evenly distributed gas. The ultimate result is what scientists call “heat death.”

Scientists debate how this heat-death will occur. Some suggest that black holes will eventually “gobble up” everything that exists and then dissipate into thin gases.¹⁰ Other scientists propose the more likely scenario that the universe will continue expanding until the universe reaches equilibrium.¹¹ Either way, according to the second law of

¹⁰J. P. Moreland and William Lane Craig, *Philosophical Foundations for a Christian Worldview* (Downers Grove, IL: InterVarsity Press, 2003), 478.

¹¹Ibid. Some scientists insist the universe is not a closed system, and will exist forever due to an outside energy source. However, these scientists have clearly misunderstood the concept of a universe. The universe refers to everything that exists. If a material thing exists, then it is part of the universe. If they are going to postulate that a non-material thing exists outside of the universe, something that is a source of power, something that is the cause of the universe, then they have postulated an entity not unlike the God of the

thermodynamics, if the universe is infinitely old, it should have died a heat death a long time ago. Therefore, the fact that the universe is still in the process of dying suggests that it had a beginning.

A helpful way to understand the second law of thermodynamics is to view the universe as a car. Suppose the car has only a finite (limited) amount of gas and that the engine is still running, consuming its gas. Can one reasonably conclude that the car has been running forever? No. If the car has been running since infinity past, and it only has a finite amount of gas, then it should not be running any more. If a car with a limited amount of gas is still running, we can reasonable conclude that it has not always been running. Concluding anything else would require us delve into the world of miracle or magic. Likewise, according to the second law of thermodynamics, if the universe is still running, it cannot be infinitely old—it must have had a beginning.

Two: Big-Bang Cosmology. Perhaps the best scientific evidence establishing the truth that the universe had a beginning is the empirical evidence for the big-bang theory. According to this theory, the universe—and time itself—exploded into existence from nothing.¹² Unfortunately, many Christians have been taught that the big-bang theory supports atheistic Darwinism. Consequently, they have been reluctant

Bible. But, such a thing is their primary reason for rejecting the second premise.

¹²Scientists base the concept of time coming into existence on Einstein's theory of relativity. Consequently, it is meaningless to ask, "What was God doing the moment before the big-bang?" since there were no moments before time began. Time itself had not occurred yet. Before God created time and the universe he was existing in a timeless, space-less, eternal state. In short, God was existing before he created the universe.

to incorporate the theory's extraordinary power in defending theism.¹³

In my opinion, the two strongest scientific facts supporting the big-bang theory are 1) the red-shift phenomenon and 2) the presence of background radiation. Scientists believe that this background radiation is the reverberations or echoes of this big bang. The red-shift phenomenon refers to the fact that the light spectrum from distant galaxies is redder than it should be if the galaxies were stationary. The explanation for this red-shift is that the stars are moving away from a central point like particles moving away from a giant firework. Consequently, the Doppler Effect causes the wavelengths to stretch and become redder when viewed through a lens that separates visible light into its constituent parts—the colors of the rainbow. One way to conceptualize the Doppler Effect is the sound of an approaching train. As the train approaches your location the sound waves are compressed—changing the pitch of the train's horn. However, when the train passes you, and begins to head

¹³Although many scientists believe that the big-bang occurred about fifteen billion years ago, this theory is not necessarily incompatible with Christian theism. Although the Bible begins with the phrase, "In the beginning God created the heavens and the earth," it does not say how he created the heavens and the earth. The Bible says that he spoke matter into existence, but it does not explain how he spoke it into existence. God often uses natural means to accomplish supernatural events. For instance, God sent a wind to part the Red Sea. Certainly, he could have parted the sea without a wind. Similar, he sent rain to cause Noah's flood and a wind to dry up the flood. Surely, he could have caused the water to appear and disappear miraculously, but he chose to use natural means. He could have destroyed the earth without a flood, but, for some reason, he chose to work through natural means. Likewise, he may have used some naturalistic means to supernaturally create the universe. The Bible does not say either way.

away from you, the sound waves are no longer compressed, but elongated. Hence, the sound of the train's horn going away from you sound different from the train's sound as it is heading toward you. Consequently, if you knew how a train's horn is supposed to sound, you can tell if a train is heading toward you, or going away from you based on the distortion of the horn's original sound. In the same way, we know that the stars (and therefore, the universe itself) are moving away from a central point.

Perhaps the best way to visualize the expansion of the universe is to fill a balloon half full, and then paint several dots on the balloon. If one, then, fills the balloon to its capacity the dots will move away from each other and away from the balloon's center. This is what is occurring in the universe—everything appears to be moving away from a central point at tremendous speeds. Now, here is the catch. If the universe is expanding from a central point, then it could not have been expanding forever. If we extrapolate backwards, then the universe would become smaller and smaller, until it was compressed into a dimensionless mathematical point. At that point, called “the singularity” by cosmologists, the universe does not have material existence. Hence, the universe, as we know it, appears to have had a beginning.

Objection one. Some theorists propose that the big-bang which created our universe was only one expansion in a infinite series of contractions and expansions. This objection has debilitating philosophical and scientific problems. Scientifically, we know of no mechanism that could cause everything to retract and then re-expand. In fact, we have good evidence to believe that any kind of perpetual motion

machine is impossible. Therefore, scientists who propose an infinite series of contractions and expansions must, at the present time, support their belief with nothing more than blind faith.

Philosophically, even if we discovered a mechanism that could cause the universe to collapse back into a single mathematical point, the impossibility of an actual infinite (which we will discuss below) rules out the possibility that the universe has gone through an infinite number of big bangs. So, even though it is logically possible that the bang we have discovered is not the first, there must have been a first bang and an ultimate beginning to the universe.

Objection two. Some theorists object to applying the scientific evidence for the big bang to support the notion of a creator. They reason, since science has been wrong in the past, it's possible that the scientific evidence for the beginning of the universe is inaccurate. I agree that it's logically possible that the scientific evidence for the big bang could be flawed. It's logically possible that the bang never occurred. However, even without all of this scientific evidence, we would still have philosophical arguments that the universe began to exist.

The Nature of the Cause of the Universe

Since the universe began to exist, and given that nothing can begin to exist without a sufficient cause, the most reasonable conclusion is that the universe was caused. But, what could have caused a material universe to exist? I contend, whatever the cause was, it had to be 1) timeless, 2) immaterial, 3) personal, and 4) powerful.

Timeless. I believe the cause of the universe had to be timeless since, according to Einstein's theory of relativity, time itself came into existence. Also, since the impossibility of an actual infinite number of past events suggests that time could not have begun an infinite number of moments ago, the cause of time itself had to be outside of time.

Immaterial. I believe the cause of the universe had to be immaterial because if the cause was material, then we would not have explained the cause of material universe. The universe is, by definition, every material thing that exists. Therefore, we cannot explain its existence with a material cause since that thing would still require an explanation for its existence. To understand the unreasonableness of appealing to a material cause of the universe, consider the following illustration. Suppose my wife asks me to fill in a hole in our backyard with dirt. But, suppose I don't feel like paying for dirt. Instead, I attain the dirt by digging another hole beside the first one. Although I would have solved one problem, I have created another one. Ultimately, I still have a hole in my backyard. Postulating a material cause of the universe is just as ludicrous as me trying to fill in the hole in my backyard with dirt from my backyard. Consequently, the cause of the universe must have been immaterial.

Personal. The cause of the universe also had to be a personal or freethinking agent. If the cause was not personal, such as an impersonal, non-thinking force, then that force must have been caused to act by something other forces. In other words, if the cause of the universe did not choose to act, but was caused to act, then the cause of the universe is dependent on some other cause. We could continue to postulate causes, but not indefinitely. Eventually we would

arrive at the first cause, the uncaused cause, which chose to act. In order for this cause to be uncaused, it must have had the option to choose not to act. In short, if the cause of the universe was not free, then it too was caused and needs an explanation. Therefore, the cause of the universe was personal or freethinking.

Powerful. Finally, the cause of the universe had to be extremely powerful to cause the universe to exist.

Conclusion

The cosmological argument for the existence of God provides reasonable evidence for God's existence by arguing 1) that nothing begins to exist without a sufficient cause and 2) that the universe began to exist. Consequently, the universe must have a cause and that cause must be 1) timeless, 2) immaterial, 3) personal (free thinking), and 4) powerful. Although the cosmological argument does not prove that the God of the Bible exists, the God of the Bible—who is timeless, personal, omnipotent, and immaterial—seems to be a good fit for the philosophical and scientific evidence presented by the cosmological argument. Nevertheless, this version of the cosmological argument does seem to suggest that some form of theism is more reasonable than atheism. It also leaves open the door that the God of the Bible is the uncaused cause. I believe he is more than that, but no less.

