

# THE KALAM COSMOLOGICAL ARGUMENT AND ITS IMPLICATIONS FOR CHRISTIAN THEISM

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## Cosmological Argumentation

While it is popular in many Christian circles today to denounce any attempt to "prove God," there are those who are uncomfortable believing in or trusting an unseen deity with their eternal souls. Further, to endeavor to persuade others to join them in their belief is embarrassing if based only on their own subjective feelings or desires. One might well ask, "What makes your reasons for believing any better than mine for disbelieving?" Any Christian who takes seriously God's commands to "make a defense to everyone who asks you to give an account," and to "destroy speculations and every lofty thing raised up against the knowledge of God, . . . taking every thought captive to the obedience of Christ," cannot help but seek good answers.<sup>(1)</sup>

It has been said that "if you can argue someone into the Kingdom of God, then someone else can argue them out." Giving this sentiment the benefit of the doubt, it would appear true in the sense that arguments alone cannot be trusted to win someone over to Christ. But acknowledgment of gospel truth and its acceptance are two different things. The former can, and should, be determined by good arguments, while the latter is a matter of one's will. If this is true, and if good argumentation showed Christianity to be false, then on what grounds would one will to follow it? It follows, then, that good argumentation is not only commanded in Scripture, but it also is an important facet of sharing one's faith. Any reply to the question, "Why believe?" involves argumentation, the only question is how good that argument will be.

When arguing for the truth of the gospel the existence of God is often taken for granted. The Bible itself opens in Genesis with the words, "In the beginning God . . ." It does not begin with an elaborate defense of the notion of God's actuality but simply asserts it as fact. When dealing with an unbeliever who denies the very existence of God it does little good to explain the acts of the Son of God. Thus, the concerned evangelist should have (at least) one compelling argument for God's existence at hand. Of the many that have been brought forth over time, the cosmological arguments seem to have fared the best.<sup>(2)</sup>

Aquinas used cosmological argumentation in three of his famous "Five Ways."<sup>(3)</sup> Reichenbach calls them "the most interesting and exciting of the theistic arguments."<sup>(4)</sup> Adherents to the cosmological models include: Scotus, Ockham, Leibniz, Clarke, Geisler, Moreland, and Craig.<sup>(5)</sup> Of the various cosmological-type arguments, two have been most popular: the argument from contingency, and the Kalam argument which involves the impossibility of infinite temporal regression. The Kalam argument was "championed in the Middle Ages in Arabic philosophy most notably by Abu Yusuf Ya 'qub b. Ishaq al-kindi . . . and . . . al-Ghazali, . . . and in Jewish Philosophy most notably by Saadia ben Joseph . . ."<sup>(6)</sup> Modern-day proponent William Lane Craig says, "In my opinion the version of the cosmological argument which is most likely to be a sound and persuasive proof for the existence of God is the Kalam cosmological argument."<sup>(7)</sup> While Aquinas, favoring the arguments from motion, contingency, and efficient causality, would disagree, in today's world Craig may very well be correct - at least when considering an answer suitable for the "man on the street."<sup>(8)</sup> As will be shown, this is because the Kalam argument does not require sophisticated philosophical ability or knowledge of terminology (such as contingency, potentiality, etc.) to understand. In fact, the concepts it involves are fairly self-explanatory and once understood very difficult to deny.

## The Kalam Cosmological Argument: Explanation and Defense

The basic form of the Kalam is as follows:

- (1) Everything that begins to exist has a cause of its existence.
- (2) The universe began to exist.
- (3) Therefore the universe has a cause of its existence.<sup>(9)</sup>

A slightly more robust presentation would include some of the defenses below, but as it stands the argument is valid in that if the premises are true the conclusion must necessarily follow. Therefore all that is to be done is to show that the premises are indeed true. To that end each will now be presented in turn.

### Everything That Begins to Exist Has a Cause of Its Existence

While the second premise is usually, out of necessity, given the most treatment it is important to look at the evidence for the first's trustworthiness. Its importance is illustrated in Reichenbach's statement, "to deny the principle of causation is to effectively destroy the cosmological argument."<sup>(10)</sup> While Craig states that "the first premiss is so intuitively obvious, especially when applied to the universe, that probably no one in his right mind *really* believes it to be false," it is nevertheless true that some have attempted to refute this seemingly self-evident principle.<sup>(11)</sup>

Hume attempted to show that causality itself is not empirically certain due to the indistinguishability between cause and effect.<sup>(12)</sup> Yet he also stated that, "I never asserted so absurd a proposition as that anything might arise without a cause."<sup>(13)</sup> Craig quotes several other non-Theistic philosophers who agree with him such as Zwart, Broad, and others.<sup>(14)</sup> Whether or not non-Theists agree, however, is not crucial to the argument. Rather, it should be demonstrable that the first premise is true regardless of who agrees with that conclusion.

The fact is that empirically there could not be more evidence for the first premises' truth. Pragmatically the principle has worked remarkably well. Reichenbach states that "it [the causal principle] is a basic principle of the universe. It is not a principle for which one can give a demonstration; it is too basic a principle for that."<sup>(15)</sup> Indeed, were the principle of causality to be denied the very basis of our reasoning would be lost.<sup>(16)</sup> Howe concludes: "for an empiricist to reject this proposition is completely arbitrary."<sup>(17)</sup> It is similar to arguing that our sense experiences are only being faked by an evil genius with our brains in jars. Although unfalsifiable by mere empirical observations there is certainly no reason to accept the thesis based on the evidence. Even Kant who, besides Hume, poses the greatest threat to this premise can be used to prove it using his own presuppositions.<sup>(18)</sup>

In the end, only if thought and reality are non-correspondent could there be any reason for doubting the principle of causality. This might be an interesting intellectual exercise, however in the end it is self-defeating. For one to posit that thought does not correspond to reality would be to think a thought that corresponds to reality - namely, that thought does not correspond to reality. Thus, if the thought corresponds to reality it is false, and if it does not correspond to reality it is false. The conclusion in either case is that reality is known and that only by denying reality can one conceive of a reality that does not present premise one as being true.

Objection Answered

Bertrand Russell in his book *Why I Am Not a Christian* writes that, "the argument that there must be a first cause is one that cannot have any validity," for, "if everything must have a cause, then God must have a cause."<sup>(19)</sup> He attempts to use principle of causation against theists by asking "What created God?" But Russell is only attacking a strawman, for this is not what the argument states. The first premise is mis-stated by Russell when he writes "if everything must . . ." The premise is that "everything *that begins to exist* must have a cause." There is no contradiction in stating that an uncaused Being has no cause, and this is what God is said to be.

## The Universe Began to Exist

### *Scientific Evidence*

From the preceding it is evident that the second premise in the Kalam argument is the only real hope the nonbeliever has in proving the conclusion false. One route would be to deny modern scientific evidence for a finite universe. In recent years this has become more and more difficult. Hugh Ross points out several key discoveries by non-theistic astronomers that point to a "divinely caused and designed universe."<sup>(20)</sup> He includes statements by George Greenstein who asked, "Is it possible that suddenly, without intending to, we have stumbled upon scientific proof of the existence of a Supreme Being?" Further, Paul Davies' thinking took a radical turn in only one year when, just after writing a book denying the possibility of God, he wrote, "The laws [of physics] . . . seem themselves to be the product of exceedingly ingenious design . . . The universe must have a purpose." Davies later wrote of "powerful evidence that there is something going on behind it all." Finally, Robert Jastrow wrote a modern parable wherein his fellow astronomers have finally, at long last, scaled the mountains of ignorance, and conquered the highest peak, only to be greeted by a band of theologians who have been sitting there for centuries.

Many of these sentiments are derived from the ever-increasing evidence for the Big Bang Theory. Ross writes, "This excitement was stirred by astrophysicists' recognition of undeniable proof for the big bang model of the universe. The big bang together with the equations of general relativity tell us there must be a simultaneous beginning for all the matter, energy, and even space-time dimensions of the universe."<sup>(21)</sup> These evidences include: (1) The Second Law of Thermodynamics which states that the usable energy in the universe - a closed system - is running down and therefore had to begin to run down, Galactic Expansion which shows that if the galaxies are moving away from each other they must have originated from a central point, Radiation Echo which points to an initial universal explosion, and the discovery of the Great Matter Mass which was predicted by Big Bang theorists.<sup>(22)</sup>

Opponents of the Big Bang theory often disagree with and criticize one another's alternate theories, and will usually offer only speculation without good evidence for their own.<sup>(23)</sup> Most notable among these is Stephen Hawking who revives Einstein's discarded theory of curved space-time involving computations using imaginary numbers (which he admits is a "trick").<sup>(24)</sup> In this view the universe is unbounded yet beginning-less (like the surface of a sphere). He admits, however, that "this idea that time and space should be 'without boundary' is just a *proposal*, it cannot be deduced from some other principle."<sup>(25)</sup> There are a lot of "maybes" in Hawking's theory that even he admits are not necessitated by observable evidence.<sup>(26)</sup> Geisler points out that even if it were the case that Hawking's proposal turned out to be true that it would have no bearing on the issue of God's existence (which Hawking also admits).<sup>(27)</sup>

Other theories and counter-theories could be explored given adequate space, but two observations should be noted here. First, science is by nature in a state of flux. Theories change as often as new evidence or counter-evidence is produced. As such, science should not be used as the *sine qua non* of theistic arguments - for what might help the theist today may hurt them tomorrow. Second, put simply, God's existence is not an object of scientific study. Much like using a Biology book to discover why a car's engine will not run, the scientific method (observation of repeatable events) does not lend itself to the discovery of a supreme Being. If God exists, He could have just as easily created a universe in which no observable thing would ever lead one to belief in Him. God is simply not a subject of science *per se*. This being the case, neither scientific evidence for nor against God's existence has ultimate authority. If God's existence can be

discovered through nature it will have to come from the field of philosophy, upon which science and all other fields of knowledge depend for their very existence.

### ***Philosophical Evidence***

The basis for understanding premise two from a philosophical view point is found in the nature of infinity. The heart and soul of the Kalam lies in the impossibility of an infinite temporal regression of events. Two terms must be distinguished before this matter can be investigated fruitfully: (1) Actual Infinity, and (2) Potential Infinity. "An actual infinite is a set which contains an infinite number of members, as for example the set of all positive integers;  $\{1, 2, 3, \dots\}$ ." <sup>(28)</sup> Dedekind defined an actual infinite this way: "a system is said to be infinite if a part of that system can be put into one-to-one correspondence with the whole." <sup>(29)</sup> By way of example, this would be to say that  $\{1, 2, 3, \dots\} = \{2, 4, 6, \dots\}$  in quantity. Leading transfinite mathematician George Cantor labeled the actual infinite as  $a_0$  ("aleph null").

The potential infinite, on the other hand, is an ever-increasing set formed by successive addition - or an "inexhaustible finitude." <sup>(30)</sup> The chief difference between the two is that only the potential infinite has real existence, for an actual infinite number of things cannot exist. This is because if one had an actual infinite number of things one more could always be added. But this is the definition of a potential infinite - commonly labeled .

With these definitions in place the following syllogism can be used to show that an actual infinite temporal regression of events (i.e. the set of moments before now) is impossible:

- (1) An actual infinite cannot exist.
- (2) An infinite temporal regress of events is an actual infinite.
- (3) Therefore an infinite temporal regress of events cannot exist.

In other words, if the universe had no beginning then the number of moments before today would be an actually infinite amount of moments. But there cannot be an actually infinite amount of moments, so at best there is only a potential infinite (a never-ending succession that began in time but will not end). Therefore, the universe (as expressed in events), or time (as expressed in moments) must have begun. The implications are clear: if the universe began, then it was caused to begin by something outside the universe.

So far the possibility of the existence of an actual infinite has been denied but not proven impossible. Craig uses several illustrations to show why this is the case. He assumes the possibility of the existence of an actual infinite and then shows through *reductio ad absurdum* how this cannot be the case. One example, that of the infinite library, comes from the above-mentioned definition by Dedekind wherein  $\{1, 2, 3, \dots\} = \{2, 4, 6, \dots\}$ . <sup>(31)</sup> Suppose it were the case that one had an actual infinite number of books. Suppose further that the odd numbered books were black and the evens red. If one were to count them (which would, by the way, take an infinite amount of time) they would find that there were as many red books as black books. Oddly, though, if one were to remove the red books the collection would not decrease in size, for there would still exist an infinite number of black books ( numbers 2, 4, 6, . . . ). If the red books were placed back on the shelves the quantity would not increase, for there would still be an infinite number of books (numbers 1, 2, 3, . . . ). What is even more bizarre is that the number of red books would be equal to the number of black books *plus* the number of red books  $\{1, 3, 5, \dots\} + \{2, 4, 6, \dots\} = \{1, 2, 3, \dots\}$ . The paradoxes do not stop there. If one were to check out all books above number 2 (numbers 3, 4, 5, . . . ) then there would only be two books left (numbers 1 and 2) - yet an infinite number of books had been removed ( $\{3, 4, 5, \dots\} - \{1, 2, 3, \dots\}$ ). So in this case  $a_0 - a_0 = 2!$  This is patently absurd.

Craig gives another paradoxical illustration: Hilbert's Hotel. <sup>(32)</sup> Imagine a hotel that is completely full for the night. If one were to come along and request a room, the proprietor would have to turn them away. But what if the hotel had an infinite number of rooms? Well then the proprietor could simply bump everyone up

one room and there would be room for another. But this is adding to infinity which cannot be done. By definition an infinite is that to which nothing can be added.

Now all of this is not a problem for mathematics which only deals in abstraction. For example a triangle can be defined abstractly as a geometric figure with three sides, but this does not mean that an actual triangle exists anywhere - only that if one did this is what it would be. In the same way, mathematicians can use things like  $a_0$  to perform transfinite equations (most quite unimaginable, such as:  $a_0^{a_0}$ ), but this does not mean that these figures represent something having actual existence. Simply because something can be defined it does not follow that it exists (such as: "the 15<sup>th</sup> planet in our solar system"), or that it *can* exist (such as a square circle). One can easily perform mathematical equations using unreal things (like 5 unicorns - 4 unicorns = 1 unicorn), for the abstract only tells what *would* be true *if* that which is being represented actually existed. Infinity theorists realize this as well. "Some of the most eager enthusiasts of the system of transfinite mathematics are only too eager to agree that these theories have no relation to the real world."<sup>(33)</sup> Several notable mathematicians have given other proofs that show that an actual infinite results in impossible situations, these include: Burali-Forti's antinomy, Cantor's antinomy, and Russell's antinomy. Each of these results in a contradiction if instantiated into the real world.<sup>(34)</sup>

In summary, due to the fact that an actually existing infinite number of things entails contradictory absurdities both within and without mathematics it cannot be the case that an actually infinite number of things can exist. If the set of moments going back (regressing) from today has no beginning then it is an actually infinite number of moments. Therefore the series of moments going into the past is finite (*viz.* had a beginning).

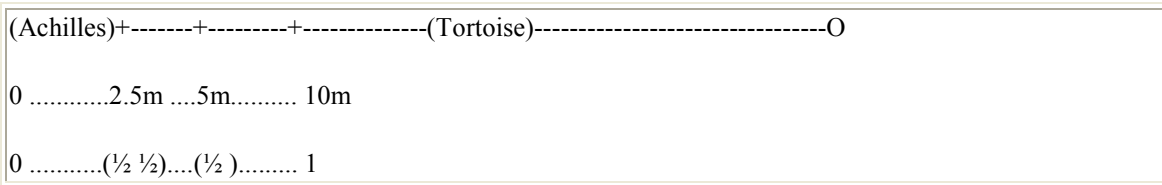
While the instantiation of an actual infinite number of things may be impossible, why cannot it be the case that a successive addition of moments could be boundless? It may be seen immediately both by definition and the above arguments that this cannot be done - for if it could then an actual infinite number would be reached and thus an actual infinite number would exist which is impossible. But even if the prior arguments failed and an actual infinite could exist, it could not come to be in this manner.

The first thing to realize is that while we are regressing in time mentally, in actuality the moments of time lead up to and end right at this present moment.<sup>(35)</sup> Now, if a series ends, it cannot be infinite. It does no good to attempt to conceive of an infinite with only one end - it is self defeating to have a finite-infinite.

Second, in successive addition one is doing exactly what cannot be done with an infinite quantity - addition. No matter how many moments there are there can always be added one more, but infinity cannot be added to nor, oddly, subtracted from. One axiom in transfinite math is that  $a_0$  has no predecessor. In other words,  $a_0 - 1$  does not equal anything.<sup>(36)</sup> An illustration comes to mind from Saturday morning cartoons. Oftentimes when Bugs Bunny is being chased by Elmer Fudd he runs onto a bridge made of planks. As he runs across, Elmer cuts the ropes on the other side thus causing the bridge to fall apart one plank after another. Bugs Bunny always makes it because as each plank falls he jumps off of it onto the next plank. Suppose, however, that there were an actually infinite amount of planks - could Bugs ever reach the other side? He could not, for there would always be one more plank in front of him. It does no good to give Bugs an infinite amount of time, for the very nature of the actual infinite makes it unable to be crossed. Mathematically it could be said that before Bugs reached plank number  $a_0$  he would have to step off of plank number  $a_0 - 1$  - but this number does not exist.

The famous paradoxes of Zeno rely for their difficulty on the very notion of passing through an infinite series. In the most well known he posits a race between "Achilles and the Tortoise." To give the tortoise a fair chance, Achilles let's the tortoise run ahead before he begins. The distance allowed is not important, but for the sake of ease let us say this distance is 10 meters (which is half the course). Now, Zeno argues that Achilles will never overtake the tortoise no matter how fast he runs or how much time he is given. Why? Because for Achilles to pass the tortoise he must first get to where the tortoise is now (10m). But, after reaching that point (10m) the tortoise has moved on (say, 11m). In order to pass the tortoise Achilles must now get to 11m, but by the time he gets there the tortoise has moved on yet again. In this manner Achilles can never pass the tortoise.

But what if the tortoise stopped? It would not matter, for as Zeno argues in *The Dichotomy*, in order for Achilles to pass the tortoise he must first reach the tortoise. But to reach the tortoise (at 10m) Achilles must first cross half the distance between he and the tortoise (5m). But in order to do so Achilles must first reach the halfway point between himself and 5m (2.5m). (See illustration below.) This would go on to infinity, and thus Achilles can neither pass nor reach the tortoise! (In fact, he cannot move at all - which is Zeno's point.)<sup>(37)</sup>



**Illustration: Achilles and the Tortoise**

How is this set of paradoxes answered? Essentially what Zeno is asking is that an infinite number of tasks be completed (for the distance in points between Achilles and the Tortoise is infinitely divisible). If there are an actually infinite number of points between Achilles and the tortoise then it cannot be crossed. In this case the problem is solved when one realizes that there are not *actual* points between the two racers, only conceptual points that do not exist in reality (as the Atomists who Zeno was refuting postulated). Thus, Achilles is not performing an infinite number of tasks.

Craig notes that similar paradoxes occur when philosophers try to imagine Infinity Machines.<sup>(38)</sup> Space does not permit a detailed discussion of these machines but suffice it to say that the same problems arise when these machines are asked to perform their infinite tasks. The very act of completing an infinite number of tasks presupposes an end to the number of tasks being performed and thus the number could not be actually infinite. The very idea of arriving at an "infinieth number" is ridiculous.<sup>(39)</sup>

Bringing the discussion back to time passage, if there were an infinite amount of time before today then today could never arrive. John Hospers asks, "How could we get to the present moment-where we obviously are now-if the present moment was preceded by an infinite series of events?"<sup>(40)</sup> It could not happen because every time we almost arrived at this moment (the terminus of the series) there would always be one more added.

What all of this leads to is the inescapable conclusion that an actual infinite series cannot exist. Appealing to any kind of mathematics is irrelevant to the issue because they break down once reality is brought into play. As John Wisdom astutely notes, "the mathematical argument fails when it comes to the dots," (i.e. 1, 2, 3, . . . ).<sup>(41)</sup>

**Objections Answered**

Besides all objections requiring the assumption that mathematics represent reality (in a Platonic formal sense), William Lawhead provides one that meets the theist on his own terms.<sup>(42)</sup> Lawhead claims that the argument proves too much - that if true it would also limit the future. While this at first seems easily answered by the actual/potential distinction, Lawhead adds a supplement that creates a problem. In essence it is argued that if the future is unending (a premise with which theists would agree), and God knows all of the events of both the past and the future, then an actual number of infinite events exist in the mind of God.

There are two ways the theist may answer this question. One would be to simply deny God's knowledge of future events. But this unorthodox position is not necessary nor preferred. Howe points out that there is an equivocation going on when Lawhead speaks of "existence." The past "exists" in actuality while the future

"exists" only in potentiality, for it does not exist *yet*.<sup>(43)</sup> The past is an actual finite because it has already existed and been exhausted. The future, however, exists only in potentiality in relation to creation.

These two different modes of reality are evident in that God is an infinite, eternal Being, while creation is finite and temporal. Therefore statements about both cannot be univocal (meaning and predicating the same thing to both), but rather they must be analogical (meaning the same thing but predicating according to mode of being). For example, God knows all numbers yet these numbers do not "exist" in reality as real entities just because God knows them.<sup>(44)</sup> The future is present to God in a non-temporal manner because that is how a non-temporal being *knows*. How the future exists to us and how it exists to God are two different things - one does not prove the other. "A potentially infinite future does not constitute an existing actual infinite."<sup>(45)</sup>

One recent attempt to deny premise two's conclusion comes, oddly enough, from Mormon philosopher Blake Ostler. Seeing that certain aspects of LDS theology, namely Eternal Progression, are threatened by the Kalam argument he has spoken out against it with determination.<sup>(46)</sup> After showing the multiple problems with Ostler's understanding of the position authors Paul Copan and William Craig move on to Ostler's only positive argument. Essentially the argument states that for every imaginable point in time (including the very first -  $t_n$ ) there could be imagined a moment prior ( $t_{n-1}$ ). But this falls prey to the same mathematical problem as above, that is, the ability to imagine a number of things does not make them exist. A potential infinite in the past does not make an actual infinite possible.

This objection is similar to the slightly more sophisticated argument by Swinburne that for any given moment in time there exists the moment before and the moment after that moment, hence there is no limit to time.<sup>(47)</sup> Craig answers that this depends on the Newtonian conception of absolute time independent from the existence of objects, and that this idea reduces to saying that "a finite time ago there were no physical objects." Craig continues: "this argument, even if sound, would not impair our argument that the universe had a beginning *in* time instead of *with* time."<sup>(48)</sup> He compares it to the statement of a physicist who says there is no temperature below absolute zero. Although the statement refers to a temperature below absolute zero that temperature does not actually exist. As with almost every theoretical objection to premise two, reality continually gets in the way.

### **An Implicit Conclusion**

So far, the Kalam has been used to conclude that the universe had to have a beginning, and thus a *beginner*. One item remains to show that this beginner is God as opposed to some impersonal, mechanical cause. To account for the existence of the world the Islamic philosophers "invoked the *principle of determination*."<sup>(49)</sup> This principle states that "since prior to the existence of the universe it was equally possible for it to be or not-to-be, a determinant (murajjih) whereby the possibility of being could prevail over the possibility of not-being was required; and this 'determinant' . . . was God."<sup>(50)</sup> Simply put, since the universe had no necessary reason to be, something had to *choose* to make it be. Therefore, this cause had to be personal, for if the necessary and sufficient conditions for the universe's existence include the making of a choice then the first cause had to be a being that had the will to create rather than to not create.

### **Conclusion**

It has been shown that both premises in the Kalam argument are demonstrably true both philosophically and scientifically. The form of the argument is valid; thus, the conclusion necessarily follows. This being the case, it is a powerful argument for a Creator who is remarkably similar to the God of Christianity:

1. He is *supernatural* - for all natural things have a beginning (Jn 1:3; Rev 5:13).
2. He is *omnipresent* - for He created space and cannot be limited by it (Ps 139:7-10).

3. He is *omnipotent* - for maximum power is the power to create (Col 1:10; Isa 43:13).
4. He is *omniscient* - for the creator of all knows all (Isa 1:18).
5. He is *personal* - because creation was willful (Gen 3:8-9; Jn 3:16).
6. He is *eternal* - for He created time (Gen 21:32; Isa 26:4).
7. He is *immutable* - for only finite beings in time can change (Mal 3:6; James 1:17)
8. He is the *only God* - for there cannot be two infinities (Isa 44:8,24).

In the simplest yet most complete terms the Kalam argument could be expanded to look like this:

- (1) Everything that begins to exist has a cause of its existence.  
(demonstrated by all available empirical data)
- (2) The universe began to exist, for an infinite number of events cannot be.  
(proven by both science and philosophy)
- (3) Therefore the universe had a cause of its existence, and  
(categorical syllogism)
- (4) This cause is the Christian God.  
(from the necessary attributes of the first cause)

The Kalam Cosmological Argument is not only powerful, but fairly simple and straightforward. It is not difficult to picture in one's mind, and thus has great potential for quick understanding during conversation. This is particularly useful when dealing with situations where time is of the essence. As such, the Kalam is an exceedingly useful tool in the hands of the evangelist who obeys God's commands to fight the good fight, preach the word, and contend for the faith. <sup>(51)</sup>

As admitted in the introduction while it is true in some sense that no one can be "argued into the Kingdom," they certainly can become convinced that their atheistic position is false. It is then up to the Holy Spirit to bring personal conviction of that truth, resulting in reception of the truth. Unquestionably, conversion is an act of the will - but the will can be helped greatly by the facts of reality. As Christians we do not need to believe with blind faith, ours is one founded on fact. As such, is it not the ultimate waste not to share those facts with the lost?

## NOTES

1. 1 Peter 3:15 and 2 Corinthians 10:5 respectively.
2. A cosmological argument is one in which the existence of God is proven from the existence of the universe. These include arguments from contingency (from dependant beings to a necessary being), efficient causality (from efficient causes to a first cause), sufficiency (from necessary conditions to a sufficient condition), etc. See: Richard Howe, "An Analysis of Williams Lane Craig's Kalam Cosmological Argument" (B.A., University of Mississippi, 1990), 1.

3. Norman Geisler, *Thomas Aquinas: An Evangelical Appraisal* (Grand Rapids, MI: Baker Books, 1991), 119-122.
4. Bruce Reichenbach, *The Cosmological Argument - A Reassessment*, First (Springfield, IL: Charles C Thomas Publisher, 1972), vii.
5. *Ibid.*, 3.
6. Howe, 2.
7. William Craig and Quentin Smith, *Theism, Atheism, and Big Bang Cosmology* (New York: Oxford University Press, 1995), 3.
8. Aquinas argued that the universe could very well have been eternal as an eternal cause (God) could have produced an eternal effect (universe), and it is only through special revelation that we know He did not. See: Geisler, *Thomas Aquinas*, 119-122 and 129.
9. William Craig, *The Kalam Cosmological Argument* (Eugene, OR: Wipf and Stock Publishers, 1979), 63.
10. Reichenbach, *Cosmological Argument*, 51.
11. Craig, *Kalam*, 141.
12. Reichenbach, *Cosmological Argument*, 56-60.
13. David Hume to John Stewart, February 1754, in *The Letters of David Hume*, 2 vols., ed. J.Y.T. Greig (Oxford: Clarendon Press, 1932, I: 187), quoted in Craig, *Kalam*, 168 (footnote 146).
14. Craig, *Kalam*, 142-144.
15. Reichenbach, *Cosmological Argument*, 64.
16. *Ibid.*, 65.
17. Howe, 23.
18. Hackett actually uses Kant's notion of categories to show that the causal principle is valid. See Craig, *Kalam*, 145-147.
19. Bertrand Russell, *Why I Am Not a Christian* (New York: Simon and Schuster Inc., 1957), 6.
20. The following examples from Hugh Ross, *Creation and Time* (Colorado Springs, CO: NavPress, 1994), 128.
21. *Ibid.*, 129.
22. Norman Geisler, *Baker Encyclopedia of Christian Apologetics* (Grand Rapids, MI: Baker Books, 1999), 102-108.
23. Such as the Cosmic Rebound or Plasma Cosmology theories. See *Ibid.*, 103.

24. Stephen Hawking, *A Brief History of Time* (New York: Bantam Books, 1998), 139.
25. *Ibid.*, 141. Emphasis in original.
26. *Ibid.*, 142.
27. Norman Geisler, *BECA*, 104.
28. Howe, 8.
29. Craig, *Kalam*, 67.
30. *Ibid.*, 9.
31. *Ibid.*, 82-86.
32. *Ibid.*, 84-85.
33. *Ibid.*, 87.
34. *Ibid.*, 90.
35. *Ibid.*, 103.
36. *Ibid.*
37. Wesley Salmon, *Zeno's Paradoxes* (Indianapolis: Bobbs-Merrill Company, Inc., 1970), 8-10.
38. Craig, *Kalam*, 176-184.
39. *Ibid.*, 182.
40. As quoted in *Ibid.*, 105.
41. As quoted in *Ibid.*, 181.
42. Howe, 34-39.
43. Howe, 44.
44. *Ibid.*, 46.
45. *Ibid.*, 51.
46. See Paul Copan and William Craig, *Craftsman or Creator?*, in *The New Mormon Challenge*, ed. Francis Beckwith, Carl Mosser, Paul Owen (Grand Rapids, MI: Zondervan, 2002), 132-138.
47. Craig, *Kalam*, 106.
48. *Ibid.*, 106-108. Emphasis in original.

49. Ibid., 10. Emphasis in original.

50. Fakhry, as quoted in Ibid.

51. 1 Timothy 1:18; 2 Timothy 4:2; and Jude 1:3 respectively.

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