

14. A CRITICAL EXAMINATION OF THE KALAM COSMOLOGICAL ARGUMENT

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In 1972, Wes Morriston received his Ph.D. in philosophy from Northwestern University. Since then he has taught philosophy at the University of Colorado–Boulder. He has published on a variety of topics in philosophy of religion. In this selection, Morriston first explains that William Lane Craig’s version of the *kalam* cosmological argument tries to establish (1) that the series of all past events must have a beginning; (2) that there is a First Cause of this series of events; (3) that the First Cause is a timeless person; and (4) that this person created the universe out of nothing. Morriston then takes issue with Craig’s arguments for all of these conclusions. He tries to show (1) that neither of his philosophical arguments against the infinite past is successful; (2) that it is far from obvious that the beginning of the whole temporal series (even if it has one) must have a cause; (3) that Craig’s argument for the claim that the first cause is a person cannot be sustained in the context of the sort of theism that he himself wishes to defend; and (4) that Craig’s arguments for creation *ex nihilo* are not cogent. Morriston does not offer an alternative explanation of the universe—suggesting instead that we simply don’t have enough to go on to answer all of the hard questions we are capable of asking about the origin of the natural world.

READING QUESTIONS

1. What is Euclid’s maxim? How might it be argued that an actually infinite set does not violate this principle?
2. Which premise of Craig’s second philosophical argument against the infinite past does Morriston reject, and why?
3. How does Craig distinguish between physical and metaphysical time? How does Morriston use this distinction to show that the two philosophical arguments against the infinite past are indispensable to the *kalam* argument?
4. Craig points out that no one in his right mind would suppose that a tiger couldn’t pop into existence “uncaused, out of nothing, in this room right now.” Morriston distinguishes between a “top down” and a “bottom up” explanation of this fact. Which explanation does Morriston prefer, and what bearing does this have on premise 1 of the *kalam* argument?
5. Why does Morriston think that the medieval principle, “nothing comes from nothing,” provides no support for Craig’s claim that the whole natural order (including time itself) must have a cause?
6. Why does Craig think that creation *ex nihilo* follows from the big bang model of the origin of the universe? What are Morriston’s main objections to the arguments for this claim?
7. Craig claims that God “intends from eternity” to create a universe in time. He also claims that an eternal cause that is sufficient for its effect must have an eternal effect. Why does Morriston find this combination of claims problematic?

The *kalam*¹ cosmological argument has two parts. The first part attempts to show that there is a First Cause of the universe. It can be conveniently summarized 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.

The second (and much less straightforward) part of the argument tries to show that the cause of the universe is a very powerful person—something like the God of classical theism. Only a personal cause, it is said, could have produced a universe with a temporal beginning.

In “Philosophical and Scientific Pointers to Creation *ex Nihilo*”², William Lane Craig strongly defends both parts of the *kalam* argument. Believing that premise 1 above is so obviously true that no sane person could doubt it, he concentrates most of his attention on premise 2, offering two philosophical arguments against the possibility of an infinite past. He also points to “scientific confirmation” of the claim that the universe has a beginning. Finally, Craig briefly presents the second part of the *kalam* argument, arguing (1) that the cause of the universe must be eternal, and (2) that an eternal cause of something that begins to exist could only be a person.

In the present essay, I shall raise a number of objections to both parts of the *kalam* argument. I shall try to show (1) that they depend heavily on the two philosophical arguments against the infinite past; (2) that neither of the philosophical arguments against the infinite past is successful; (3) that when it is applied to events happening at the very first moment of time, premise 1 is much more problematic than Craig realizes; (4) that the argument provides no evidence for creation *out of nothing*; and (5) that Craig’s argument for the claim that the first cause is a person cannot be

sustained in the context of the sort of theism that he himself wishes to defend.

1. FIRST PHILOSOPHICAL ARGUMENT AGAINST THE INFINITE PAST

If the series of past events had no beginning, then the past would consist in an infinite series of events, all of which have actually happened. Is this possible? Craig thinks that it isn’t. An infinite series of past events would be an actually infinite set of events, and he believes that there cannot be an actual infinite in reality.

To convince us that this is so, Craig asks us to imagine a library containing infinitely many books, numbered from zero onwards. Such a library would have some very peculiar properties. For example, one could add infinitely many books to such a library without increasing the number of books in the library. One could remove the first three books, and the library would not have any fewer books. One could even remove every other book, and it would not have any fewer books. Craig thinks it is obvious that such a library could not exist in reality. Even God could not create a library with infinitely many books.

Let’s pause for a moment, and try to see what is going on. Why would the library not have any more books, no matter how many were added to its collection? Why would it have no fewer books even if every other book were removed? The reason is that there is a “one-to-one correspondence” between the set of books in the library before and the set of books after the change.

To see how this works, suppose that all the odd-numbered books have been removed. We can map the collection of books after their removal onto the total collection as follows. Let book #0 after the change correspond to book #0 before the change, book #2 after to book #1 before, book #4 after to book #2 before, and so on . . . There is then a one-to-one correspondence between the set of books *before*, and the set of books *after* the removal of all the odd-numbered books.

Now according to the *Principle of Correspondence*, as its mathematicians call it,

PC If two sets can be placed in one-to-one correspondence, they must have the same number of elements.

¹So called in recognition of the Islamic philosophers who first developed this argument for the existence of God. The word “*kalam*” is Arabic for “speech” or “discourse,” but it became the name of a school of Islamic theology that flourished in the middle ages.

²William Lane Craig, “Philosophical and Scientific Pointers to Creation *ex Nihilo*,” in R. Douglas Geivett and Brendan Sweetman, eds., *Contemporary Perspectives on Religious Epistemology*, (New York and Oxford: Oxford University Press, 1992), 185–200.

It follows that there are no *fewer* books after the removal of all the odd-numbered ones.

Craig thinks this is absurd—there ought to be more odd-and-even numbered books altogether than even-numbered alone. So he concludes that there is something wrong with the whole idea of an infinite collection. Such collections simply cannot exist in reality.

Craig's argument at this point assumes the truth of a general principle that is worth stating explicitly. He calls it "*Euclid's maxim*" (after Euclid's fifth axiom).³

EM A whole is greater than any of its parts.

Given PC and EM, Craig thinks he can show that there are no actually infinite sets. For suppose there were. Then its members could be placed in one-to-one correspondence with a mere part (a "proper subset"⁴) of itself. By PC, it would then follow that the set has no more members than its part, contrary to EM.

As Craig sees it, both the Principle of Correspondence and Euclid's maxim are intuitively plausible. Both are obviously true of all finite sets. We get into trouble only when we try to apply them to infinite sets. So the reasonable thing to do is simply to deny that there are any actually infinite sets in reality. And since the series of past events exists in reality, Craig concludes that there cannot be infinitely many past events. The past must have a beginning—a very first event before which there were no others.

How strong is Craig's argument against the possibility of an actual infinite? The first thing to see is that Euclid's maxim about wholes and parts says nothing about the *number* of elements in a set. At most, it entails that *taken as a whole*, a set is *greater* than a mere *part* (a "proper subset") of itself. This is important, because Craig's argument turns on the claim that an infinite set would *not* be "greater" than its parts, and because (as we are about to see) there is a perfectly straightforward sense in which an infinite set is greater than any one of its proper subsets, even those that also have infinitely many members.

Craig's own example will make this clear. There is an obvious sense in which his imaginary library is "greater" than any of its parts, and this is so even though it does not have a greater *number* of books than some of its parts. For instance, the library as a whole is "greater" ("larger") than the part of the library containing only books numbered 3 and higher *simply in virtue of the fact that it contains books numbered 0, 1, and 2 as well as all the higher numbered books*. This is all by itself a perfectly legitimate sense of the word "greater"—one that is logically independent of the question, "What is the *number* of books in the two sets?"

There is, then, a fairly intuitive sense in which any set—even an infinite one—is "greater" than any of its parts. Not because the *number* of elements in the greater set is necessarily larger than the number of elements in the lesser one—but merely in virtue of the fact that it "contains" all the elements in the lesser set plus some others that the lesser one does not contain. That, all by itself, and without any reference to the *number* of elements in either set, is sufficient to make one "greater" than the other. When the word "greater" is understood this way, Craig's infinite library does *not* violate the principle that the "whole" is greater than its "part."

So EM by itself will not get Craig's argument off the ground. His argument requires something like the following principle:

EM*A set must have a greater *number* of elements than any of its proper subsets.

Now everyone would agree that while EM* is true of finite sets, it cannot be true of infinite sets. But what should we conclude from this? That there can't be any infinite sets? Or merely that while EM* is true of finite sets, but not of *all* sets?

How can we decide? Craig's appeal to the allegedly "absurd" properties of an actually infinite set won't settle the issue, since the "absurdity" of those properties depends on the necessary truth of EM*.

It seems that we have arrived at an impasse. Craig thinks it is obvious that something like EM* must be true of all sets, and that an actual infinite is therefore impossible. His opponents think that an actual infinite is possible, and that EM* is therefore true only of finite sets. Is there any way to decide who is right?

³William Lane Craig (with Quentin Smith), *Theism, Atheism, and Big Bang Cosmology*, (Oxford: Oxford University Press, 1993), 23ff.

⁴A set A is a proper subset of a set B if every element of A is an element of B, but not every element of B is an element of A.

One way to break the impasse would be to ask whether we know of any sets that really do (or could) have infinitely many members. Several candidates have been proposed.⁵ I'll present just one of them.

Consider a finite chunk of spatial extension. It can, as we all know, be divided into subregions, each of which can again be divided into smaller subregions, and so on *ad infinitum*. It seems, then, that within any region of space, there are infinitely many subregions.

Craig is well aware of this objection. His answer is that space is not composed of points.⁶ It follows that there are no natural boundaries within a given chunk of space, so that the various subregions do not exist as subregions until a division is actually made (at least in thought). Since we never arrive at a point at which all possible divisions have already been made (we can always—at least in principle—divide again), Craig thinks the number of subregions is only *potentially* infinite. It follows that we do not after all have a good example of an actual infinite existing in reality.

I think Craig is wrong about this. While it is true that we cannot actually make an infinite number of subdivisions within a region of space, it doesn't follow that the subregions are not *there* prior to any possible division. Nor does the lack of natural boundaries within a region of space settle this issue in Craig's favor. What follows from the absence of natural boundaries is only that the infinitely many subregions do not exist *apart from a specified way of dividing things up*.

It is not difficult to come up with a specification relative to which the number of coexistent subregions

is infinite. Unlike actually dividing a thing a given number of times, the specification for so dividing it doesn't have to be provided one step at a time—it can be given all at once. Just as we can specify the set of natural numbers all at once by the single rule, "starting with one, add one to the previous sum *ad infinitum*," so too I suggest that we can specify all the subregions of a given region *R* of space *relative to the rule*, "starting with *R* divide the results of the previous division by half *ad infinitum*." We don't have to rely on *natural* points of division within *R* to apply this rule to *R*. Nor do we need to *complete* the series of divisions in order to know that, *relative to this rule*, there is an *actual*—and not merely a potential—infinity of subregions.⁷

2. SECOND PHILOSOPHICAL ARGUMENT AGAINST THE INFINITE PAST

Craig has a second philosophical argument against the infinite past. Even if infinitely many things could exist at the same time, Craig thinks that the series of past events could not be actually infinite. He summarizes this argument as follows.

- a. The series of events in time is a collection formed by adding one member after another.
- b. A collection formed by adding one member after another cannot be actually infinite.
- c. Therefore, the series of events in time cannot be actually infinite.⁸

Probably no one will want to deny the first premise. It just says that in any temporal series of events, the members of the series happen successively, one after the other. One event passes by, then another, and so on, up until the last event in the series. But what about the second premise? Why can't a collection formed in this step-by-step way have infinitely many members? Craig's answer is that an infinite collection could never be completed. No matter how many members have been added to the collection, you could always add one more. No matter how many

⁵Here are some other candidates. (1) Euclidean space contains an infinity of nonoverlapping subregions. Space may not be Euclidean, but it could have been. So an actual infinite is at least possible. (2) There are infinitely many natural numbers. If they are real, then the set of natural numbers is an actual infinite. (3) Craig thinks the future is infinite, and that there is a complete set of facts known to God about this infinite future. He argues that this is a merely potential infinite, on the ground that the future is not "real." This is quite a controversial claim—but even it is granted, it might still seem that Craig is committed to thinking that the set of facts about the future is actually infinite. Naturally, Craig has things to say about these candidates for an actual infinite, but limitations of space prevent a full treatment of the issue here.

⁶See William Lane Craig and Michael Tooley, *A Classic Debate on the Existence of God* (<http://www.leaderu.com/offices/billcraig/docs/craig-tooley0.html>)

⁷For a more thorough treatment of Craig's argument against the possibility of an actual infinite, see Wes Morriston, "Craig on the Actual Infinite," forthcoming in *Religious Studies*.

⁸"Philosophical and Scientific Pointers to Creation *ex Nihilo*," 190.

events have “gone by,” the number of past events is only finite. We never arrive at infinity.

The second premise is obviously true of any series *having a temporal beginning*. Consider, for example, the series of years that began exactly one hundred years ago. One hundred of its members have passed by. The hundred and first is on its way. But no matter how many years are added, only finitely many years will have passed by. The collection will never be a completed infinity.

But what about a series *having no temporal beginning*? Why couldn't there be a series of years in which there is no first year? It's true that in such a series we never “arrive” at infinity, but that is only because infinity is, so to speak, “always already there.” At every point in the series, infinitely many years have already passed by.

Craig thinks this is impossible. If infinitely many years must have passed by before a given year, then that year could never arrive. Craig illustrates his point as follows:

. . . suppose we meet a man who claims to have been counting from eternity, and now he is finishing: $-5, -4, -3, -2, -1, 0$. Now this is impossible. For, we may ask, why didn't he finish counting yesterday or the day before or the year before? By then an infinity of time had already elapsed, so that he should have finished. The fact is, we could never find anyone completing such a task because at any previous point he would have already finished.⁹

This is not a good argument. It confuses “having counted infinitely many numbers” with “having counted all the negative numbers up to zero.” The man has indeed always already completed the first of these tasks; but he has not completed the second one until he arrives at zero. When he arrived at -1 he had completed a different task—that of counting all the members in the series $\langle . . . , -n, . . . , -2, -1 \rangle$. When he arrived at -2 , he had completed yet another task—that of counting all the members in the series, $\langle . . . , -n, . . . , -3, -2 \rangle$. And so on.

No doubt there *could* have been a beginningless count ending in zero at any time in the infinite past. But Craig gives no good reason for thinking that there *must* have been one or that the infinite counter in his example would have to be the person who had completed it. Consequently, it seems to me that our objection to Craig's defense of premise *b* remains undefeated. This premise holds true for any series *having a beginning*—if you *start out* on an infinite series, you will never complete it. But that tells us nothing at all about whether a *beginningless* series of events is possible.

3. HASN'T GOD ALWAYS EXISTED?

But suppose Craig is right, and the past does have a beginning. You might wonder how long he thinks *God* has existed. Since *God* does not begin to exist, mustn't He have existed forever? And wouldn't that be an actual infinite of the very sort that Craig says is impossible? Craig's explanation is interesting.

God was timeless prior to creation, and He created time along with the world. From that point on *God* places Himself within time so that He can interact with the world He has created. [198]

This might seem incoherent. If *God* exists *prior* to creation, mustn't He exist at a *time* prior to creation? How, then, can He be *timeless* prior to creation? Craig's answer is that *God* is causally, but not temporally, prior. He has the kind of “priority” that any cause has over its effect. Let me explain.

Craig believes that it is possible for a cause and its effect to occur simultaneously. For example, it might be thought that the pressure of a man's posterior on a cushion causes the depression in the cushion, even though these states of affairs obtain simultaneously. But even in cases like this, the causal relation is asymmetrical—the cause is the source of the effect, and not the other way around. In that sense, the cause is “prior” to its effect.

This is how we must understand Craig's claim that *God* is timeless “prior” to the creation of time. Insofar as he is the *creator* of time, *God* is “causally prior” to time itself. And this is so even though there is (obviously enough) no time prior to the creation of time. “Prior to” (apart from) the creation of time and the universe, *God* is timeless.

⁹“Philosophical and Scientific Pointers to Creation *ex Nihilo*,” 189–90.

On the other hand, Craig also insists that in creating time God “places Himself within time so that He can interact with the world He has created.” Even though God—as creator of the universe and time—is timeless, Craig insists that God’s life in relation to the world He creates has temporal duration. God’s life in time, so to speak, begins with creation. Subsequent to creation, God has a past and that past has a beginning, since it began with the creation of time and the universe.

There is a small but extremely important qualification that Craig does not mention in “Philosophical and Scientific Pointers to Creation *ex Nihilo*.” He wants to leave open the possibility that time began prior to the creation of the physical universe. This may surprise you, since the four “prominent astronomers” whose words Craig quotes with so much approval in this essay assert that it is “meaningless” to “ask what happened before the big bang.”¹⁰ This might lead one to suppose that Craig agrees that it is meaningless to suggest that there was a time prior to the creation of our physical universe. But this is not his considered view. In another essay, he writes:

. . . [S]uppose that God led up to creation by counting, “1, 2, 3, . . . , fiat lux!” In that case the series of mental events alone is sufficient to establish a temporal succession prior to the commencement of physical time at $t = 0$. There would be a sort of metaphysical time based on the succession of contents of consciousness in God’s mind prior to the inception of physical time. Thus, it is meaningful to speak both of the cause of the Big Bang and of the beginning of the universe.¹¹

In this scenario, the physical time of the universe is created at $t = 0$ when God says, “fiat lux” (“let there be light”). But the creation of physical time happens within a more fundamental kind of time—“metaphysical time,” as Craig calls it. This more fundamental

temporal series also has a beginning, however. For expository purposes, Craig usually operates on the assumption that it is created along with physical time. But in the passage quoted above he acknowledges another possibility—that of a temporal series of events leading up to creation. In Craig’s imaginary illustration, metaphysical time begins on the count of “one,” and whole series of events between that first moment and the creation of the universe occurs prior to the first moment of physical time.

The nature of metaphysical time and its relation to physical time are large and difficult questions, lying well beyond the scope of this essay.¹² But for reasons that will become apparent in the next section, it is important to see that Craig does allow for the possibility of a series of events that are prior—in metaphysical time—to the beginning of our universe.

4. SCIENTIFIC CONFIRMATION

In sections 1 and 2 I tried to show that Craig’s two philosophical arguments against the possibility of an infinite past are unsuccessful. But you might think this doesn’t matter very much, since scientists have shown that the universe very likely *did* have a beginning—that it almost certainly began with a very big “bang” about fifteen billion years ago. So doesn’t Craig’s argument get all the backing it needs even if the two philosophical arguments against the possibility of an infinite past are unsound?

Unfortunately, things are not that simple. What the scientific considerations show is only that our physical universe very likely had a beginning. What, if anything, happened before the beginning of our universe—and even whether or not there was any “before”—is not settled by the scientific evidence. Discoveries in the empirical sciences have not ruled out the possibility that our universe is the product of events that occurred at a time prior to the beginning of our space-time.

It may occur to you to object that it makes no sense to speak of a time prior to the beginning of space-time, since it is created along with the universe. But

¹⁰This is the view of the four “prominent astronomers” whom Craig quotes so approvingly. See “Philosophical and Scientific Pointers to Creation *ex Nihilo*,” 192.

¹¹“The Origin and Creation of the Universe: A Response to Adolf Grünbaum,” *British Journal for the Philosophy of Science* 43 (1992), 233–240.

¹²For more on Craig’s view of these matters, see his *Time and Eternity: Exploring God’s Relationship to Time* (Wheaton, Ill: Crossway Books, 2001).

this point is of no use to Craig, since, as we saw at the end of the previous section, he thinks there is another more fundamental kind of time—*metaphysical* time—that does not depend on the existence of our universe. So on Craig's own view, there at least *could* have been a series of events occurring in metaphysical time prior to the beginning of our universe.

This is important, because it means that we have to take into account the logical possibility of a temporal series of causes and effects prior to the beginning of the universe. Perhaps the universe was produced by something else, which in turn was produced by something else, and so on *ad infinitum*. The scientific considerations do not rule this out. To block the possibility of such a regress, Craig must rely on his philosophical arguments against the infinite past. If those arguments are unsound, then the beginning of our universe might (for all Craig has shown) be merely the most recent in a beginningless series of causes and effects.

One much discussed version of this possibility is the so-called “oscillating universe” hypothesis. On this hypothesis, the universe expands and then contracts. Each cycle begins with a “big bang,” and ends in a “big crunch.” And that's how it is throughout a possibly infinite past.

Craig thinks there is more than enough scientific evidence to refute the oscillating universes hypothesis. For example, he points out that there isn't enough dark matter to reverse the expansion of the universe and bring about a “big crunch.”¹³ But even if this is correct, it tells us only that the pattern of oscillation is not going to *continue*. It tells us nothing about what, if anything, *preceded* the big bang. Why think that in the previous cycle—if there was one—there was no more dark matter than in ours? Why even think it must have been governed by the same physical laws as ours?

Now Craig would undoubtedly point out that there is no empirical support for saying that the preceding cycles contained more dark matter than ours. For that matter, he could point out that there is no em-

pirical support for any sort of infinite series of past causes and effects. This is undoubtedly true. On the other hand, unless Craig's arguments against the infinite past are better than I think they are, an infinite series of causes and effects in metaphysical time remains one of the logical possibilities. And even if it lacks empirical support, it is not obvious that it has any *less* going for it than Craig's hypothesis—that of a timeless person who somehow managed to create time and put itself into time. One should not overlook the possibility that none of our hypotheses about the origin of the universe is especially likely to be true. Perhaps we just don't have enough to go on to choose among the logical possibilities, and the right thing to say is that we simply do not know how or why the universe came into existence.

5. MUST THE BEGINNING HAVE A CAUSE?

But suppose it is granted that the past is finite, and that there is a very first event in the series of events leading up to the present. For simplicity's sake, let us assume that this first event coincides with the beginning of our universe.

This brings us to our next question. Is premise 1 of the *kalam* argument true? Must everything that begins to exist—even the very first event in the history of time—have a cause? Craig thinks it is unnecessary to give a lengthy defense of this claim. “Does anyone in his right mind,” he asks, “really believe that, say, a raging tiger could suddenly come into existence uncaused, out of nothing, in this room right now?”¹⁴ Probably no one does. Craig then invites us to apply this “intuition” to the beginning of the universe, and conclude that it too must have a cause.

But surely this is much too quick. Of course, no one thinks a tiger could just spring into existence “in this room right now.” But before we jump to conclusions, we need to ask *why* this is so. What makes this so obvious? Is it, as Craig seems to suppose, that all normal persons believe the first premise of the *kalam* argument, and then apply it to the case of the tiger? Call that the *top-down* explanation. Or is it rather that we have a lot of experience of animals (and other middle-sized

¹³Actually, the most recent speculation has it that there is enough “dark matter,” but that this is more compensated for by the presence of something called “dark energy.” There is, so they say, enough dark energy to resist the pull of gravity, and keep the universe expanding indefinitely. If this is right, then *our* universe is not going to collapse in a “big crunch.”

¹⁴Craig, “the Existence of God and the Beginning of the Universe,” *Truth Journal*, v. 3 (<http://www.iclnet.org/clm/truth/3truth11.html>)

material objects), and we know that popping up like that is just not the way such things come into existence? Call that the *bottom-up* explanation.

The bottom-up explanation takes note of the fact that we are dealing with a familiar *context*—one provided by our collective experience of the world in which we live and of the way it operates. It is our background knowledge of that context—our empirical knowledge of the natural order—that makes it so preposterous to suppose that a tiger might pop into existence uncaused. We *know* where tigers and such come from, and that just isn't the way it happens.

Now contrast the situation with regard to the beginning of time and the universe. There is no familiar law-governed context for it, precisely because there is nothing (read, "there is not anything") prior to such a beginning. We have no experience of the origin of worlds to tell us that *worlds* don't come into existence like that. We don't even have experience of the coming into being of anything remotely analogous to the "initial singularity" that figures in the big bang theory of the origin of the universe. The intuitive absurdity of tigers and the like popping into existence out of nowhere does not entitle us to draw quick and easy inferences about the beginning of the whole natural order.

However, Craig thinks it is, if anything, even *more* obvious that the universe (and time) could not have come into existence uncaused. His reason seems to be that prior to the beginning of an uncaused universe, there would be absolutely nothing. Immediately following the tiger passage quoted above, he writes, "If prior to the existence of the universe, there was absolutely nothing—no God, no space, no time—how could the universe possibly come to exist?"¹⁵ Craig thinks this is a straightforward application of the medieval principle that "nothing comes from nothing" (*ex nihilo nihil fit*)—a principle he believes to be so obviously true that no one could sincerely deny it. In another place, he writes:

... if originally there were absolutely nothing—no God, no space, no time—then how could the universe possibly come to exist? The truth of the

principle *ex nihilo, nihil fit* is so obvious that I think we are justified in foregoing an elaborate defense of the argument's first premiss.¹⁶

Let's think about this a bit. It sounds rather as if Craig is saying that if there existed a *situation* in which there was absolutely nothing, then—in that situation—nothing could come into existence. This is nonsense. "Nothing at all" is not a weird sort of "something." It is not a situation "in" which something else "can" or "cannot" come to be. "Nothing" just means "not anything."

What else could Craig mean when he says that "if originally there were absolutely nothing" nothing could come into existence? Perhaps he means no more than this:

(NA) If there had not been anything, then there would not have been anything.

NA is undoubtedly true. If there were "not anything"—*not even time*—then there would not be anything—not even a "coming-into-existence" of the universe. But I doubt if this can be all that Craig has in mind, since nothing of interest follows from so trivial a claim.

It is not surprising, therefore, that Craig sometimes slips into talking as if the issue were whether something could "spring into existence" out of a *temporally prior situation* in which there is nothing at all. In the following passage, for example, he writes:

... virtually no one ever challenges the premiss that if in the past nothing existed then nothing would exist now. ... The old principle *ex nihilo nihil fit* appears to be so manifestly true that a sincere denial of this axiom is well-nigh impossible.¹⁷

Since there can hardly be a *past* state of affairs in which there is *no time*, it looks as if Craig here understands the principle, *ex nihilo nihil fit*, to mean something like the following.

(NT) If, at a given time, there were nothing at all (apart from time itself), then at no later time could anything begin to exist.

¹⁶"The Existence of God and the Beginning of the Universe." My emphasis.

¹⁷*Theism, Atheism, and Big Bang Cosmology*, 58–59. My emphasis.

¹⁵*Reasonable Faith: Christian Truth and Apologetics*, 93.

But this won't give Craig what he wants, since even if it is true, NT does not entail that the first event—the event before which there was no time—must have a cause.

If neither NA nor NT provides what is needed here, is there anything else Craig might mean by his frequent repetition of the phrase, “from nothing, nothing comes”? I think there is. I suspect that at bottom this is merely a confusing way of saying that whatever begins to exist must have a cause (something “from” which it “comes”). But if that's all it comes to, then the great medieval principle is merely a restatement of premise 1 of the *kalam* argument, and provides no additional support for it. Certainly it tells us nothing useful about the beginning of the whole natural order—or about the need for a cause at a time prior to which there is no time.

There may also be something to be said *against* the claim that there could be a cause of the whole temporal order of events. Many philosophers hold that causes must precede their effects in time. If they are right, then it follows straightaway that a first event *could not* have a cause.

The nature of causation is another large and difficult issue that lies beyond the scope of this essay, but it is interesting to observe that some of the very philosophers Craig cites as favoring his own causal principle also hold that causes must precede their effects in time. For example, David Hume's famous analysis of the causal relation explicitly includes this requirement. And in the very passage quoted by Craig, C. D. Broad says that he cannot believe that anything could begin to exist “without being caused by something else which existed *before and up to* the moment when the thing in question began to exist.”¹⁸ This is obviously inconsistent with Craig's account of creation, since according to that account, there is no time prior to the very first event. Its cause cannot therefore have existed “before and up to the moment” at which it occurred.

I am not sure what Hume and Broad and the rest would say if they thought time had a beginning. Would they (like Craig) conclude that some causes do not precede their effects in time? Or would they simply say

that a first event (unlike all later ones) could not have a cause? I won't try to settle that issue here. But it is important to see that in order to get the *kalam* argument off the ground, Craig must take controversial positions on a number of highly debatable issues having to do with the nature of time and of causation. Contrary to what Craig supposes, therefore, a sane adult may have sincere—and quite reasonable—doubts about the scope of premise 1 of the *kalam* argument.

6. CREATION OUT OF NOTHING?

As the title “Philosophical and Scientific Pointers to Creation *ex Nihilo*” suggests, Craig believes he can show, not merely that the universe was created *by* a person, but that it was created *out of* nothing. His argument for the second of these claims appeals to a version of the big bang theory according to which the universe emerged from an infinitely dense particle that exploded some fifteen billion years ago.

This event that marked the beginning of the universe becomes all the more amazing when one reflects on the fact that a state of “infinite density” is synonymous with “nothing.” There can be no object that possesses infinite density, for if it had any size at all, it would not be *infinitely* dense. Therefore, as astronomer Fred Hoyle points out, the big bang theory requires the creation of matter from nothing. This is because as one goes back in time, he reaches a point at which, in Hoyle's words, the universe was “shrunk down to nothing at all.” Thus, what the big bang model requires is that the universe had a beginning and was created out of nothing.¹⁹

The argument Craig presents in this passage can be summarized as follows.

- a. According to the big bang theory, the universe was created out of an infinitely dense particle.
- b. There can be no object having infinite density.
- c. So “infinite density” is synonymous with “nothing.”
- d. Therefore, the big bang theory entails that the universe was created out of nothing.

¹⁸“Philosophical and Scientific Pointers to Creation *ex Nihilo*,” 196. My emphasis.

¹⁹*Ibid.*, 192.

This argument is extremely confused. For one thing, step *c* of the argument is obviously false. “Infinite density” is not synonymous with “nothing,” and the “initial singularity” that figures in the big bang theory is not simply nothing at all. A mere *nothing* could not explode, as the infinitely dense particle is supposed to have done. And even if it lacks spatial and temporal spread, the initial singularity has other properties. For starters, it has the property of “being infinitely dense.” It is therefore a quite remarkable *something*, and not a mere nothing.

But this is not all. If premise *b* is true—if it is really true that “there can be no object that possesses infinite density,” then this version of the big bang theory is simply false, since it says that there once was such an object.

So far, then, it appears that the big bang model of the origin of our universe provides no support for the claim that the universe was created *out of nothing*. Elsewhere, however, Craig explains his position somewhat differently.

On such a model the universe originates *ex nihilo* in the sense that at the initial singularity it is true that *There is no earlier space-time point* or it is false that *Something existed prior to the singularity*.²⁰

In this passage, Craig does not deny that an infinitely dense particle could exist. Nor does he make the mistake of saying that the “initial singularity” is a mere “nothing.” What he says instead is that nothing *preceded* the initial singularity *in time*, and this is somehow supposed to show that the initial singularity was created out of nothing. The argument goes like this:

- e. The initial singularity exists at the earliest point of space-time.
- f. There is no time prior to the earliest point in space-time.
- g. Therefore, there was nothing temporally prior to the initial singularity.
- h. So the initial singularity must have been created out of nothing.

There are at least two problems with this argument. For the reasons already given in section 3 above, I do not think the big bang theory entails the truth of premise *f*. Even if it is granted that space-time begins at the initial singularity, it does not follow that *metaphysical* time begins with the first moment in space-time. Recall that on Craig’s view, God *could have* created time long before creating the space-time of our universe. It follows that there *could have been* something prior to the earliest point in space-time ($t = 0$), in which case premise *f* would be false. Premise *f* *may* be true anyway—metaphysical time and space-time *could have* begun together. But since the big bang theory says nothing about metaphysical time, Craig cannot consistently claim that the big bang theory shows this to be so.

But suppose that the first moment of metaphysical time does coincide with $t = 0$ in the space-time of our universe. That still doesn’t give us creation *ex nihilo*. What follows is only that the universe wasn’t created out of something *that existed at a time earlier than $t = 0$* . So step *h* of the argument does not follow from step *g* without an additional premise:

- i. If there was nothing temporally prior to the initial singularity, then it must have been created out of nothing.

But why think this additional premise is true? Why couldn’t the initial singularity be created out of something that exists timelessly? Whether this is possible depends on what sorts of things exist outside of time. According to Craig we know that God, the first cause of the universe exists outside time “prior” to creating the universe. But why suppose that God is the only being who exists outside time? Why couldn’t there also have been a timeless “stuff” that God formed into a universe?

Craig thinks he can rule out this possibility on the ground that physical matter and energy are temporal in nature. But why suppose that these are the only possible “stuffs” out of which God might have made the universe? It’s true that we are not acquainted with any timeless “stuffs” that could have played this role. But we don’t encounter any timeless persons either, and Craig has no trouble with that idea. So why couldn’t there also have been a timeless material “stuff” for God to work with?

²⁰“The Ultimate Question of Origins: God and the Beginning of the Universe,” *Astrophysics and Space Science* 269–270 (1999), 723–740.

I am not putting this forward as a particularly likely hypothesis. It seems to me that we simply don't have enough to go on to decide what (if anything) God (if he exists) might have made the universe out of. As a wise philosopher once said, "Our line is too short to fathom such abysses."²¹ What I am sure of is that the big bang theory does not settle the issue in favor of creation *ex nihilo*.

7. MUST THE FIRST CAUSE BE A PERSON?

Our final topic is Craig's argument for saying that the First Cause of the universe must be a person. It is a difficult argument, and Craig's presentation of it is brief. It seems to go something like this.

We know that the cause of the beginning of the universe (or whatever the first event was) must be eternal. Otherwise it would be one of the things that begins to exist, and would be just as much in need of a cause as the universe.

Now natural causes—"mechanical" causes, as Craig sometimes calls them²²—are *sufficient* for their effects. They produce their effects as soon as all the relevant conditions are in place. It follows that if this sort of cause had no beginning, its effect could not have a beginning either. For example, Craig says, if the temperature is cold enough for long enough, whatever water happens to be around must have turned to ice. So if there had always been water and the temperature had *always* been below zero, all the water would *always* have been frozen.

The general point is that if a cause is sufficient for its effect, and the cause is eternal, then the effect must be eternal too. So if it had that sort of eternal cause the universe would have to be eternal too.

Craig thinks he has shown that the universe isn't eternal—that it has a beginning. How then, he asks, can it have an eternal cause? We have just seen that it couldn't have an eternal "mechanical" cause. But what other sort of eternal cause might there be?

Craig thinks there is another familiar sort of cause that provides the answer to this question. In addition to mechanical causes that automatically produce their

effects, he says that there are *personal* causes. Individual persons are free agents who have the power to cause all sorts of things. But they don't have to do so and can exist fully without producing the various effects they are capable of causing.

Suppose, for example, that a man is seated. The man can, at any time, decide to stand up. But he can also choose to remain seated. He has the power to decide either way—it is entirely up to him to determine when or even whether to stand up. If he does decide to stand, then he, and he alone, is the *cause* of his decision. Unlike a merely mechanical cause, the man can exist fully without exercising his power to produce the various effects of which he is the cause.

This is quite a controversial claim. Many philosophers believe that the true cause of a person's decision is not simply the person, but various other psychological factors at work within the person—his beliefs and values and preferences, and that these in turn are the product of other causes. Unlike these philosophers, Craig claims that a person—and not something else happening within the person—is the sole cause of his own decisions. In *exactly the same situation*, with *exactly the same ongoing desires and beliefs*, our seated man could decide either to stand up or to remain seated.

Let's suppose, at least for the sake of argument, that Craig is right about this. It follows that there are at least two radically different kinds of causation in the world. On the one hand, there are mechanical causes that cannot help bringing about their effects; and on the other hand, there are personal causes with the power to bring about various effects, but who are free to determine just how and when and whether they will exercise that power.

Against this theoretical background, we can see why Craig thinks the First Cause must be a person. How is it, he asks, that the cause of the universe is eternal, even though the universe is not? We have already seen that an eternal mechanical cause could have only an eternal effect. But what about an eternal personal cause? Craig thinks that an eternal person could cause a temporal effect. Here is his explanation.

... a man sitting from eternity may will to stand up; hence, a temporal effect may arise from an

²¹David Hume, *Enquiry Concerning the Human Understanding*, section vii, part i.

²²"The Existence of God and the Beginning of the Universe."

eternally existing agent. Indeed, the agent may will from eternity to create a temporal effect, so that no change in the agent need be conceived.²³

Suppose, then, that the cause of the universe is an eternal person. It does not follow that the universe is eternal—since the personal cause of the universe could have “willed from eternity” to produce a universe with a beginning in time. Craig thinks this is the only possible way to explain why the universe is not eternal: “The only way to have an eternal cause but a temporal effect would seem to be if the cause is a personal agent who freely chooses to create an effect in time.”²⁴

There are a number of difficult issues here. Does personal causation work the way Craig thinks it does? Or is causation by a person always analyzable in terms of other things happening within the person? Is personal causation the only alternative to mechanical causation? Or might there be some other type of “eternal cause” that wouldn’t necessarily produce an eternal effect? I won’t pursue these questions further here, but there is another objection to Craig’s argument that I would like to develop. To see how this line of criticism goes, we need to back up a bit and take a close look at the way persons are related to the things they cause.

When a person stands up, he makes his body move. But he does that by producing another kind of change in himself—a mental change. He *decides* that now is the time to get up—he forms the intention to get up right away—and it is this mental change that is the immediate cause of the changed position of his body. Granted that a person can sit on a bench for a long time without deciding to get up, once his decision to “get up now” is made, it normally produces its effect straightaway—faster even than a temperature below zero freezes water.

So how does it work with God and creation? Apparently, God must *choose* to create, or nothing will happen. It is God’s choosing to create that is the immediate cause of the beginning of the universe. God chooses to create a universe, and the universe comes into being.

You might think that God’s choosing is a mental *change* in God. God thinks it over, *and then* decides to create. But Craig denies that this is so.

By “choose” I do not mean God changes His mind. I mean God intends from eternity to create a world in time.²⁵

It is not hard to see why Craig wouldn’t want to say that “choosing to create” is a *change* in God. Craig’s God is omniscient. He can’t arrive at decisions the way you and I do, because He always already knows what He is going to do. (You aren’t *arriving at* a decision about what to do if you *already know* what you are going to do.) So naturally Craig concludes that God’s decision to create is eternal—that He “intends from eternity to create a world.”

But this creates a different problem for Craig’s account of creation. We have seen that God’s decision to create is the immediate cause of the universe. But now we learn that God’s decision to create is eternal. So how, on Craig’s principles, can we avoid the conclusion that the universe is just as eternal as God’s decision to create it?

To be sure, Craig also says, “God chooses from eternity to create a world *with a beginning*.”²⁶ But it is hard to see how this is possible. You will recall that Craig’s argument for saying that the first cause must be a person assumes that:

a. An eternal sufficient cause must have an eternal effect.

But presumably Craig doesn’t think God needs any help getting the universe going. So it is natural to suppose that:

b. God’s will to create “a world with a beginning” is *sufficient* to produce it.

But we have just learned that:

c. God’s will to create “a world with a beginning” is eternal.

²³“The Existence of God and the Beginning of the Universe.”

²⁴*Ibid.*

²⁵“Philosophical and Scientific Pointers to Creation *ex Nihilo*,” 197.

²⁶*Ibid.*, 197.

From these three premises, it follows that:

d. “A world with a beginning” is eternal.

This conclusion is obviously absurd. A “world with a beginning” cannot be eternal. So, since *d* follows from premises *a*, *b*, and *c*, one of them must be false. But which? Craig’s answer appears to be that *b* is false.

I am inclined simply to deny that God’s eternally willing to create the universe, properly understood, is sufficient for the existence of the universe . . .²⁷

How could this be? Surely Craig doesn’t think God could fail to accomplish what he “eternally wills”! Here is his explanation:

. . . [I]t is insufficient to account for the origin of the universe by citing simply God, His timeless intention to create a world with a beginning, and His power to produce such a result. There must be an exercise of His causal power in order for the universe to be created. . . . [We must] differentiate between God’s timeless intention to create a temporal world and God’s undertaking to create a temporal world.²⁸

Craig here distinguishes God’s eternal will to create a world from his actually exercising the power to do what He thus wills—His eternal intention to create from His “undertaking” to carry out this intention. God’s “undertaking” to create the universe is presumably sufficient for the existence of the universe, and the universe begins to exist “as soon as” God “undertakes” to create it. But this doesn’t make the universe eternal because the “undertaking” (unlike the original intention) is not eternal. Since God puts Himself into time when He “undertakes” to create the universe, His “undertaking” to create occurs at the very first moment of time. It is, so to speak, the very first of the events that God causes.

But surely this only pushes the question back to the relation between God’s eternal will and His “un-

dertaking” to execute His prior intention. If God’s will to create is sufficient for His undertaking to create, then on Craig’s principles the undertaking must be eternal, in which case, once again, the universe must be eternal. Craig must therefore deny, not only that God’s eternal will is sufficient for the existence of the universe, but also that it is sufficient for His *undertaking* to create the universe. Is this at all plausible?

I don’t think so. It is easy enough to see that the will of a merely human person is often not sufficient for his actually undertaking to do what he intends to do. There are at least two reasons for this. You and I can intend to do something at a *later time*, but not until that time comes will we *undertake* to do anything about our earlier intention. This afternoon, for example, I plan to go to a certain store to buy some vitamins. I have not—yet—undertaken to do so, because the time I have selected for this activity has not yet arrived. But even when the proper time does arrive, I may change my mind and not go. This is the second reason for saying that a human person’s will is not sufficient for his actually undertaking to do what he has willed. Human beings have wills that are changeable and inconstant. Sometimes they even suffer from *weakness* of will, and fail to do what they (perhaps sincerely) intended to do, even when it is long past the time for action.

It is obvious that neither of these explanations of the gap between willing and undertaking can be applied to the sort of God Craig believes in—a God who is omnipotent, omniscient, and timeless. An omnipotent being cannot suffer from weakness of will. An omniscient being cannot change its mind. And a timeless being cannot meaningfully be said to “delay” undertaking to carry out its intentions. So it is very hard indeed to see how God’s eternal will to create can fail to be sufficient for His undertaking to do so, in which case it is also sufficient for the beginning of the universe. On Craig’s principles, therefore, it ought to follow that the universe is eternal.

8. CONCLUSION

I have tried to show that the *kalam* argument is not a successful argument for the existence of God or for creation *ex nihilo*. This does not mean, of course, that

²⁷“Must the Beginning of the Universe Have a Personal Cause?: A Rejoinder,” forthcoming in *Faith and Philosophy*.

²⁸*Ibid.*

I have a better theory of the origin of the universe on offer. My own view is that we simply don't know enough to draw firm conclusions about such matters. It is fun to speculate, but we cannot hope to come up with answers that any honest, reasonable, and well-informed person would be bound to accept. Most of us have different and somewhat conflicting intuitions about time and eternity, causation and agency, about the nature of personhood, and about many other matters. It is an illusion to suppose that there is a single obviously correct way of sorting it all out. That is why the history of philosophy is, and will continue to be, a history of contest and controversy . . . and *fun*.²⁹

QUESTIONS FOR FURTHER REFLECTION

1. Although Craig thinks that time will go on forever, he insists that the future is not an actual infinite on the ground that the future does not exist. It is, he says, only a potential infinite. But Craig also claims that there is a complete body

of truth about the future known to God. Are these claims consistent?

2. Consider the following principle:

At least part of the total cause of any event precedes it in time.

Can you think of any exceptions? What implications does your answer have for premise 1 of the *kalam* argument?

3. Is creation *out of nothing* any more intelligible than creation *by nothing*? What implications does your answer have for premise 1 of the *kalam* argument?
4. Is Craig's distinction between "mechanical" and "personal" causation sustainable? Or is personal causation at bottom just another sort of mechanical causation?
5. Most physicists believe that there is genuine randomness at the level of subatomic particles. For example, if you ask why a uranium atom disintegrated at a particular moment, the answer is that at any given time the probability is one in 10^{32} that an "alpha particle" will "tunnel out" of the nucleus of that atom. And that is all there is to say. Might this provide a model for the origin of the universe different from any that Craig considers in your reading?

²⁹I would like to take this opportunity to thank Barbara Morrison, who read an earlier draft of this paper and made many helpful suggestions.