

Reply To Professor Craig¹

I hold that the considerations adduced in *kalam* cosmological arguments do not embody reasons for reflective atheists and agnostics to embrace the conclusion of those arguments, viz. that the universe had a cause of its existence. I do not claim to be able to show that reflective theists could not reasonably believe that those arguments are sound; indeed, I am prepared to concede that it is epistemically possible that the arguments proceed validly from true premises. However, I am prepared to make the same concession about the following argument: *Either $2+2=5$ or God exists; $2+2\neq 5$; therefore God exists*. But nobody could think that this argument deserves to be called a *proof* of its conclusion (even if it is sound). Of course, this latter argument is obviously circular: (almost) no-one who was not antecedently persuaded of the truth of the conclusion would (have reason to) believe the first premise. But this fact does not entail that admittedly non-circular arguments, such as the *kalam* cosmological arguments, cannot fail to be equally dialectically ineffective. And, indeed, that is the view which I wish to defend: there is not the slightest reason to think that *kalam* cosmological arguments should be dialectically effective against reasonable and reflective opponents.

I take it that proponents of *kalam* cosmological arguments wish to maintain that the arguments are dialectically effective -- i.e. that reasonable and reflective opponents ought to be persuaded by them. Moreover, I take it that in order to *refute* these arguments, it is sufficient to show that one can reasonably refuse to be persuaded by them. Of course, one might also seek to show that, in fact, one ought reasonably disbelieve one or more of the premises or the conclusion of the argument -- but that would be a much more difficult undertaking, and one in which I have no interest. (Perhaps John Mackie wanted to argue for the stronger view; in that case, all I wish to claim is that his arguments can be adapted to substantiate the weaker thesis.)

At the outset, I take it that there is a *prime facie* presumption that there can be reasonable and reflective atheists, agnostics, and theists. It is epistemically possible that one or more of these positions should turn out to be logically inconsistent, or *ad hoc* with respect to uncontroversial evidence, or clearly deficient in explanatory power, etc. However, it seems clear that, at the beginning of the dialectic between theists and their opponents, all sides should concede the (*prima facie*) reasonableness of their opponents' views. For, if this is not conceded, then there is really no way of proceeding with the dialectic. Moreover, I assume that the aim of the debate is to bring one's opponent to see that, *by her own lights*, she ought to accept the conclusion for which one is arguing. In other words: in order to win, one needs to show that, *by her own lights*, a reasonable and reflective opponent will improve her view by adopting the conclusion(s) for which one is arguing.

Now, I do not know whether Professor Craig wishes to defend the claim that *kalam* cosmological arguments are dialectically effective. However, while some of his comments suggest that he only wishes to defend the view that theists can reasonably believe that the arguments are sound, I suspect that he does wish to defend this claim. At any rate, I shall proceed to respond to his objections under the assumption that it *may* be the case that he wishes to defend the claim that *kalam* cosmological arguments are dialectically effective. (Note that it would be pointless to say that all Craig wishes to do is to *defend* the view that *kalam* cosmological arguments are sound -- i.e. that he has no interest in questions of dialectical efficacy. For, of course, all parties to the debate about these arguments will agree that what they are really interested in is the *truth* of the conclusion of the arguments. And moreover, each will surely be entitled to believe -- and indeed will be obliged to believe -- that her own beliefs on this matter are true. The only interesting question is whether one can be shown that one has reason to change one's beliefs. Note, too, that it would be equally pointless to suppose that what one wants to do is to produce arguments which serve to *justify* the beliefs which one in fact has. For how could the exhibition of logical relationships between propositions -- e.g. a demonstration that it would be inconsistent for one to reject the conclusion of a *kalam* cosmological argument, given that one accepts its premises -- serve to

show -- even to oneself -- that one is justified in believing that conclusion?)

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One *kalam* cosmological argument relies on the premise that it is impossible for there to be physically instantiated infinities (e.g. infinite temporal sequences, hotels with infinitely many rooms, Thomson lamps, etc.) Professor Craig claims that, even though such things are narrowly logically possible -- as is shown by the (apparent) consistency of Cantorian set theory -- nonetheless, they are not broadly logically (or metaphysically) possible². On the other hand, I see no reason to say that it is broadly logically impossible for there to be physically instantiated infinities. That is, I am not prepared to rule out the suggestion that it is broadly logically possible for there to be physically instantiated infinities. And that is enough to allow me to reasonably refuse to be moved by this *kalam* cosmological argument.

I also claim that, if one concedes that physically instantiated infinities are narrowly logically possible -- by which I mean (roughly) that they can be consistently discussed in a partially interpreted first-order (or perhaps higher-order) logic which includes the axioms of arithmetic and other entirely *a priori* subject matters -- then one should also concede that there are no purely *a priori* arguments which one can use to show that physically instantiated infinities are not broadly logically possible. Against this, *pace* Craig, it is no objection to insist that the (alleged) narrowly logical consistency of Cantorian set theory is compatible with the broadly logical impossibility of physically instantiated infinities -- for questions of broadly logical possibility will quite obviously be *a posteriori*.³

Perhaps Craig might not be prepared to concede that Cantorian set theory is narrowly logically consistent in *my* sense. Indeed, his suggestion that there are “contradictions entailed by inverse arithmetic operations performed with transfinite numbers, operations which are

conventionally prohibited in transfinite arithmetic in order to preserve logical consistency” (p.3) is perhaps evidence that he thinks that there are *a priori* objections to the idea that physically instantiated infinities are broadly logically possible. But of course, one who supposed that physically instantiated infinities are broadly logically possible will deny that the inverse arithmetic operations in question are merely “conventionally prohibited”. Within the Cantorian theory, the inverse arithmetic operations simply cannot be defined: so why should one who thinks that Cantorian infinities might be physically instantiated lose any sleep over these operations? To one who supposes that physically instantiated infinities are broadly logically possible, Craig’s argument is clearly question-begging. (And -- I would add -- the same is true of his other arguments which are intended to show that it is broadly logically impossible for there to be physically instantiated infinities, e.g. those concerning Hilbert’s Hotel, Craig’s Library, Tristram Shandy’s Autobiography, etc. However, there is no space to provide the details here.)

Thus I hold that, even after one takes a “good sensible look”, one can be perfectly justified in continuing to maintain that it is broadly logically possible for there to be physically instantiated infinities. Craig may be right that such infinities are not broadly logically possible -- but I do not think that there is anything which he says in any of his work which shows that this is the case. And that is enough for the opponent of the argument.

Another *kalam* cosmological argument relies on the premise that physically instantiated infinities cannot be formed by successive addition. Professor Craig claims that it is “inconceivable” that either an *w*-series or an *w**-series should be formed by successive addition. (p.4) On the other hand, I maintain that one can reasonably believe that even an *w+w**-series can be formed by successive addition. Against this contention, Craig objects:

But how is such a series completable? One could count forever and never complete the w -series, much less arrive at [the end of the w^* -series]. If I started counting now, when would I arrive at [the end of the w^* -series]? Let us have no fictional suggestions about counting progressively faster so that the infinite supertask is completed in a finite time, for such scenarios are wholly unrealistic. ... The fact is that I would never arrive at [the end of the w -series]. (p.4)

This argument just begs the question against one who maintains that an $w+w^*$ -series can be formed by successive addition. In an infinite succession of moments of time, of order $w+w^*$, it will be possible to traverse an $w+w^*$ -series. Moreover, the allusion to supertasks suggests a means of making this suggestion seem more plausible. For, we can begin with two finite intervals in which the infinite sub-series are traversed as supertasks, join the two sub-series, and then perform a topological transformation to stretch out the resultant series so that there is an equal distance between successive moments. If the first sub-series lies on the interval $[0,1)$ and the second sub-series lies on the interval $(1, 2]$, then the entire series can be contained in the interval $[0, 2]$. It may seem that there is still a question about what happens at 1 (a point which is contained in neither sub-series). But, of course, there are lots of points in both sub-intervals which do not belong to the relevant sub-series. When all of the excess points are deleted from the interval $[0, 2]$, the apparently problematic point will also be deleted. So, in fact, it will be true that there is no point in the series which is not formed from earlier points by successive addition.

Perhaps it will be objected that, even though it is true in the above construction that every point is reached from *some* earlier point by successive addition, it is not true that every point is reached from *every* earlier point by successive addition. However, it seems to me that this objection just begs the point at issue: for, if you have performed enough successive additions to traverse the w -series, then you have performed enough successive additions to have traversed some of the w^* -series. So, in fact, every point is reached from every earlier point by

successive addition.

No doubt many will not find this argument convincing. (Perhaps I am not convinced by it myself.) No matter. For all that the opponent of the argument needs, in order to argue against the premise, is that an w^* -series can be formed by successive addition. And here, there seems to be no problem: for we can model this with the interval $(0, 1]$, without needing to worry about junction points. Perhaps, though, it will be objected that such a series cannot be traversed because it is “beginningless” or “non-constructible”?⁴ But what is the content of this objection? Craig insists that it is not just the question-begging claim that any series which can be formed by successive addition must have a first member. But in that case, it seems to me that all we have is the expression of a question-begging intuition. Certainly, I have not been able to find anything in Craig’s writings which gives one who believes that an w^* -series can be formed by successive addition a reason to change her mind. Of course, this is not to suggest that there is an argument here which shows that Craig is unreasonable in thinking that an w^* -series cannot be traversed; but, as I suggested above, no such argument is needed.

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Craig claims that another premise of the *kalam* cosmological argument referred to in 2. -- viz. that a temporal series of past events is a collection formed by successive addition -- involves a commitment to an A-series (tensed, three-dimensional, anti-temporal-parts) conception of time. (p.6)⁵ If this is correct, then I think that it is bad news for the proponent of the argument. For, of course, it is highly implausible to suppose that there are now available rationally compelling reasons for B-series (tenseless, four-dimensional, temporal parts) theorists to change their views. Each new, controversial metaphysical doctrine which is wheeled in to support the claim that *kalam* cosmological argument is sound -- as in Craig’s invocation of a relationist, as opposed to substantivalist, conception of space-time⁶ -- threatens to undermine

the dialectical efficacy of the resulting argument. (Of course, this is not to deny that one might have a reasonable commitment to an A-series analysis; though, as I explained earlier, that is not enough to create problems for an opponent of the argument. However, *pace* Craig, the B-series theorist ought not to be saddled with the thesis that “temporal becoming is mind-dependent”⁷; Russell and Grunbaum erred in not opting instead for the thesis that there is simply no such thing as “temporal becoming”.)

It should also be noted that there are A-series analyses which appear to undermine the *kalam* cosmological argument. In particular, those views which hold that only the present is real -- and that the past and future are equally unreal -- entail that there *is* no actual infinity of past events. On this view, one could hold that the universe did not begin to exist, while denying that this entails that there *are* any actual infinities. Of course, on this view there may be “infinite facts” -- e.g. it may be true that there *has been* an infinite series of past events -- but it would seem that these facts are compatible with the idea that what there actually *is* is strictly finite. No doubt, the proponent of *kalam* cosmological arguments will also find these facts objectionable -- but it may not be easy to explain why. (One interesting question to ask is whether God is supposed to have infinite attributes. If so, then it seems at least *prima facie* difficult to see how one could deny that the same could be true of what there actually is (excluding God) according to this kind of presentist.)

In his discussion of the question whether whatever begins to exist has a cause, Craig writes:

I cannot think of any good reason to believe that something's coming to exist out of nothing is metaphysically possible, even if there is no logical inconsistency in so conceiving. ... I do not see that the *kalam* proponent is obligated to provide any sort of

argument for his causal premise. We do not require arguments against the possibility of solipsism or for the existence of other minds, for the truth concerning these matters is obvious and any argument in this regard would be based on premises less obvious than the conclusion. In the same way, the premise *ex nihilo nihil fit* is .. obvious. (pp.6ff)

Here it seems that Craig simply confesses that he does not have a good argument against those who claim that there are things other than God which do not have a cause of their existence. But if one can be reasonable in holding this opinion, then Craig is wrong: his argument is not entirely successful unless he provides compelling support for the causal premise. (Of course, he may be perfectly entitled to believe the causal premise; but that is a different issue.) Moreover, the comparison with solipsism and disbelief in the existence of other minds is surely inapt: for there is pragmatic incoherence in the supposition that one might try to defend these beliefs in debate. But there are people -- myself included -- who think that it might well be the case that there are non-abstract things other than God whose existence is uncaused, and who are not obviously irrational in this belief. No useful purpose is served by the insistence that such people are obviously mistaken: mere rhetoric is no substitute for argument.

Craig does mention one argument, due to Jonathon Edwards: *if something can come into being uncaused out of nothing, then it is inexplicable why anything and everything does not do so.* (p.7) Among the points which might be made in response to this argument, there are the following: (i) it should, I think, be granted that it is not physically possible for “real” entities to “pop into existence” in space-time, since this would involve violations of conservation laws; though, on the other hand, it *seems* that the “virtual particles” of the quantum-mechanical vacuum do just “pop into and out of existence”; (ii) it should be conceded that it is narrowly logically possible for things to “pop into existence” in spacetime -- i.e. that there is no purely *a priori* objection to this form of denial of the causal principle; (iii) it is hard to see what could count as a decisive argument in favour of either answer to the question whether it is broadly logically (metaphysically) possible for things to pop into

existence uncaused. (A regularity theorist about laws will be entirely unimpressed by Craig's argument from the claim that nomic necessity derives solely from the causal powers and dispositions of things which actually exist. (p.7)⁸ Here is yet another controversial metaphysical assumption which is pressed into service to prop up Craig's argument.)

Furthermore, it seems to me that it could simply be denied that it is appropriate to describe the universe as an entity which "pops into existence" or which "begins to exist" *even if it is true that the universe is temporally finite*. Suppose we think of the universe as a distribution of properties over an at-least-four-dimensional finite manifold. (So we shall be B-series theorists and substantivalists.) Among the questions we need to answer, there are the following: (i) does the manifold in question have any boundaries?; (ii) if the manifold does have boundaries, are these boundaries open or closed?; (iii) if the universe does have boundaries, does time extend all the way to these boundaries (or is it a local phenomenon, restricted to some sub-portion of the manifold)? Suppose -- to consider just one epistemically possible option -- that the universe is bounded and closed, but that time is a local phenomenon. Then it could surely turn out to be the case that there is nothing which begins to exist which does not have a cause, and yet that the universe -- which is not itself an entity *in* time -- does not begin to exist (and hence does not need a cause to explain how it "pops into existence"). Even in a temporally finite universe, there needn't be any uncaused events -- for the time-series might be appropriately modelled by an open interval on the real number line.⁹

At the very least, it seems to me that we are sufficiently ignorant of the global topology of the universe (especially at the quantum level) to leave it an open question -- for at least some reasonable and reflective persons -- whether there is a sense of "beginning to exist" ("coming to exist") in which it is true both (i) that the universe began to exist and (ii) that everything which begins to exist has a cause of its existence. Of course, this is not to say that one cannot reasonably believe that the question is closed -- but, as I have insisted before, that is an entirely different issue.

Craig claims that, whereas Mackie's atheism is metaphysically absurd, his own theism is metaphysically unproblematic. In particular, he claims that there is no difficulty in the view that God is "timeless without creation and in time subsequent to creation". (p.8) However, it seems to me that there must be a version of Mackie's atheism which is on a metaphysical par with Craig's view, namely: the view that time is a local phenomenon in our part of the universe. On this view, those parts of the universe which are atemporal exist timelessly; the rest of the universe is in time. Moreover, on this view, conditions sufficient for the origination of the temporal part of the universe obtain in that part of the universe which is atemporal.

Both Craig's view and the atheistic alternative need to be treated with considerable care, lest they lapse into inconsistency. Consider Craig's (implicit) claim that it is *intelligible* to suppose that God lead up to creation with the words "3, 2, 1, *fiat lux!*"¹⁰ In order to make sense of talk about conditions *prior to* creation, we need to assume a time in which those conditions are embedded -- for "prior to" is an essentially temporal notion. But, if there is such a time -- perhaps, as Craig suggests, provided by God's thoughts -- then the eternity of God leads to exactly the kind of infinite regress which Craig claims is unintelligible. If Craig's view is to be consistent, he must accept the conclusion that, without creation, God is essentially non-temporal -- i.e. there is no sense in which a time series can be ascribed to him.¹¹

Of course, Craig's opponents needn't subscribe to the atheistic view under discussion. But I do not see that there is anything in Craig's writings which shows that those who do have a position which is worse than the one to which he subscribes.

Craig claims that “[whether or not] the initial cosmological singularity is a real, physical state ... the singularity and hence the universe comes into being without any material or efficient cause and therefore originates *ex nihilo*”. (p.10) However, it seems to me that one can be sceptical about whether the scientific evidence really does point towards anything like an initial cosmological singularity. The crucial point is that we still have no adequate theory to describe conditions before the Planck time; consequently, as most physicists will admit, we really have no idea what to say about those conditions (nor, indeed, whether to admit that we should give a realistic interpretation to our models of the universe at, and before, that time). But, in these circumstances, I see no good reason to accept the extrapolation beyond the Planck time which is required in order to arrive at an initial cosmological singularity. What there is good evidence for is the claim that the universe has expanded to its present size from a much smaller early universe; but this claim is quite compatible with the further claim that there was no initial cosmological singularity. (Note, by the way, that a bouncing, or oscillating universe, is not the only possible alternative. There are various other options -- e.g. those involving world ensembles and wormholes -- which might avoid an *ex nihilo* origination.)¹²

There is much else in Craig’s reply on which I would like to comment, but I shall desist. Instead, I return to the methodological remarks with which I began. As Craig is well aware, in his defence of *kalam* cosmological arguments, he has occasion to discuss -- and, in many cases, to opt for positions on -- a large number of controversial issues, including: (i) the interpretation of quantum mechanics; (ii) the question of the ontological commitments of

scientific theories (including quantum mechanics and general relativity) and of mathematical theories; (iii) relationism versus substantivalism about space-time; (iv) A-series versus B-series analyses of time; (v) the analysis of causation and laws of nature; (vi) the analysis of infinities; (vii) the interpretation of mathematics; (viii) the analysis of modality; and so on. Given this menu of issues -- and given that many of his opponents have well-developed world-views in which they disagree with him on almost all of them -- it is highly implausible to suppose that his work provides those opponents with a reason to change their views. (Of course, if Craig is right, then his opponents have an *external* reason to change their views, namely that, unless they do, they won't be in possession of the truth. But what is required to motivate a change in view is *internal* reason; yet I do not find it at all plausible to suppose that Craig's work provides any such motivation.) While this is not to say that Craig is wrong to suppose that his cosmological argument is sound, it is certainly to insist that it is hard to see what he could hope to achieve by advancing it.

¹This paper is a reply to Professor William Lane Craig's "Graham Oppy On The *Kalam* Cosmological Argument" *Sophia* 32.1, 1993, pp.1-11. Further references to the literature are contained therein. (Note that all page numbers cited in the main text refer to this article.)

²Cf. "Graham Oppy On The *Kalam* Cosmological Argument", p.3.

³Cf. "Graham Oppy On The *Kalam* Cosmological Argument", p.3. I think it should be noted that other readers found it equally hard to make sense of Craig's talk of "real possibility"; see, e.g., William Wainwright's review of Craig's The *Kalam* Cosmological Argument in *Nous*, pp.328-334, at p.330.

⁴Cf. "Professor Mackie And The *Kalam* Cosmological Argument" *Religious Studies* 20, 1984, pp.367-375, at pp.369-370.

⁵Cf. "Time And Infinity" *International Philosophical Quarterly* 31, 1991, pp.386-401, at p.392; "God, Creation, And Mr. Davies" *British Journal For The Philosophy Of Science* 37, 1986, pp.163-175, at pp.170-171; and "Was Thomas Aquinas A B-Theorist Of Time?" *New Scholasticism* 59, 1985, pp.475-483, at p.483

⁶Cf. "God And Real Time" *Religious Studies* 26, 1991, pp.335-347, at pp.335-338; "God, Creation, And Mr. Davies" at pp.166, 171; "Wallace Matson And The Crude Cosmological Argument" *Australasian Journal Of Philosophy* 57, 1979, pp.163-170, at p.169; and "God, Time, And Eternity" *Religious Studies* 14, 1979, pp.497-503, at p.499

⁷Cf. "'What Place, Then, For A Creator?' Hawking On God And Creation" *British Journal For The Philosophy Of Science* 41, 1990, pp.473-491, at p.485

⁸Cf. "God, Creation, And Mr. Davies", p.168.

⁹In "The Origin And Creation Of The Universe: A Reply To Adolf Grunbaum", *British Journal For The Philosophy Of Science* 43, 1992, pp.233-240, at p.239, Craig claims that the suggestions made in the present paragraph of the main text are "mere word play". However, I say that this is unfair to Grunbaum (and to me): it is not mere word play to suggest that the universe could be temporally finite, and yet beginningless (in the sense that there is no first moment of time, or first event). In these circumstances it may be true -- as Craig alleges -- that it is sensible to ask for the cause of the series of events; but surely it is also true that one could reasonably

hold that there need be no such cause. (Remember that neither Grunbaum nor I has been persuaded that a temporal series of order type w^* is broadly logically (metaphysically) impossible.)

¹⁰Cf. “The Origin And Creation Of The Universe: A Reply To Adolf Grunbaum”, p..238

¹¹In “The Origin And Creation Of The Universe: A Reply To Adolf Grunbaum”, at p..239, Craig claims that “vacuum fluctuation models face, among other difficulties, the severe problem of explaining the existence of our relatively young cosmos if the quantum mechanical background space is supposed to have existed from eternity”. But this is absurd. All that the eternity of the background space can amount to is that it does not exist in time -- i.e. it is timeless. To suppose otherwise is just to make the mistake cautioned against in the main text.

¹²Amongst the complaints which Craig makes against Hawking and Davies, there is his claim that -- their positivistic inclinations aside -- Hawking and Davies are prone to “naive ontologising”, i.e. to treating aspects of their models of the universe as representations of “metaphysical reality”, when in fact these features should be treated as artefacts of the model. Perhaps there is some justice in this complaint -- though one might try to press Quine’s views on ontological commitment into service in constructing a defence -- but, in any case, the important point to note is that exactly the same claim can be made about Craig’s inference that the universe began from a *singularity* (whether or not the singularity itself was real). Until we have theories which describe what happened at, and perhaps before, the Planck time, it is hard to see any justification for the inference that the universe arose from a singularity.

Note, too, that Craig’s complaint that Hawking’s introduction of *imaginary time* is “an egregious example of self-deception” (p.483) seems to require an uncharitable -- though understandable -- interpretation of Hawking’s text. What I take Hawking to be suggesting is that, from the standpoint of giving a simple account of the overall structure of the universe, *imaginary time* is one of the natural features of the universe. On the other hand, what we call “time” is, from this standpoint, merely a gerrymandered property which happens to be very important to us. This is not to deny -- as Hawking’s actual words do -- that what we ordinarily call “time” is real; it is only to insist that a basic physical description of the universe need not pay any attention to this property (just as it need pay no attention to “visible light” or “potable water”, etc.)