

# Graham Oppy on the Kalam Cosmological Argument

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Graham Oppy has attempted to re-support J. L. Mackie's objections to the *kalam* cosmological argument, to which I responded in my article "Professor Mackie and the *Kalam* Cosmological Argument." Oppy's attempt to defend the possibility of the existence of an actual infinite is vitiated by his conflation of narrowly and broadly logical possibility. Oppy's attempt to defend the possibility of the formation of an actual infinite by successive addition founders on misinterpretations. Oppy's objections to the premiss that whatever begins to exist has a cause and to God's being that cause are based on modal confusions.

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Source: "Graham Oppy on the *Kalam* Cosmological Argument." *Sophia* 32 (1993): 1-11.

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Graham Oppy has recently attempted to re-support J. L. Mackie's objections to the *kalam* cosmological argument. [1](#) In this discussion note, I shall try to state succinctly why I think this attempt does not succeed.

## **The Existence of an Actual Infinite**

If an actual infinite cannot exist, then the series of past events cannot be actually infinite; therefore the universe began to exist, which is the second premiss of the *kalam* argument. I argued that the existence of an actual infinite is ontologically impossible and that Mackie's objection that infinite set theory forms a logically consistent system is insufficient to warrant the conclusion that the existence of an actual infinite is really possible. But Oppy holds that

. . . Mackie's reply . . . is decisive if this sub-argument is meant to be based on *a priori* considerations; for Cantorian set theory shows that it is possible for there to be worlds in which there are infinities.

. . . Once we grant--as Craig does--that Cantorian set theory reveals that worlds with actual infinities are logically possible, there can be no good *a priori* argument against actual infinite temporal sequences. {2}

But how does Cantorian set theory show that there are possible worlds in which there are actual infinities? And even if there are, how does that show that an actual infinite is ontologically possible? The issues involved here are more subtle than Oppy seems to realize. He states, "[Craig] concedes that infinite set theory is a logically consistent system; consequently, it seems that he concedes that there are logically possible worlds in which various 'infinities' obtain." {3} But it is by no means obvious that this second alleged concession follows from the first. The validity of this inference depends on how broadly one construes the logical modality involved in one's possible world semantics. Oppy, like Mackie, seems to take a proposition's freedom from inconsistency in first-order logic to be indicative of that proposition's being true in some possible world. But this involves a notion of possibility which is much broader than that normally countenanced in possible world semantics. Criticizing Mackie on this score, Plantinga points out that broadly logical possibility cannot plausibly be defined in terms of a proposition's freedom from inconsistency in first-order logic, for the resources of first order logic do not permit us to deduce a contradiction from propositions like " $2+1=7$ " or "Some prime numbers weigh more than Jackie Gleason," but we should not regard such propositions as therefore possible. {4} Typically, the notion of broadly logical modality is left undefined, but is said to employ a notion of possibility narrower than that of strictly logical possibility (which characterizes a proposition just in case it is not the negation of a thesis of first order logic, for example) but broader than physical possibility (which characterizes a proposition just in case it does not violate a law of nature), and examples of broadly logically possible/impossible propositions are given. Actualists like Plantinga and Stalnaker construe the possibility of the abstract objects which are possible worlds to consist in their instantiability and hold that the framework of possible worlds is grounded in these abstract objects' possessing the modal property of being possibly instantiated. {5} Broadly logical possibility/necessity is therefore frequently identified with metaphysical possibility/necessity. A state of affairs which is strictly logically possible may, in fact, be metaphysically impossible, incapable of being instantiated. If we follow the majority lead on matters modal, then, the alleged concession that there exists a possible world containing actual infinities does not follow from the admitted logical consistency of axiomatized infinite set theory.

If, on the other hand, we follow Oppy in defining a sphere of accessibility containing strictly logically possible worlds, then a state of affairs' comprising (part of) such a world does not imply its instantiability, as Plantinga's above examples clearly show. The logical consistency of axiomatized infinite set theory, given its axioms and conventions, is no indication of its ontological or metaphysical possibility. Therefore, even if there are (strictly logically) possible worlds containing actual infinities, it does not follow that the existence of an actual infinite is ontologically, or metaphysically, possible.

On the contrary, I think the counter-intuitive situations engendered by the existence of an actually infinite number of things shows that an actual infinite cannot exist. Moreover, neither Mackie nor Oppy have addressed the contradictions entailed by inverse arithmetic operations performed with transfinite numbers, operations which are conventionally prohibited in transfinite arithmetic in order to preserve logical consistency. Thus, the proponent of the *kalam* cosmological argument need carry no brief for driving mathematicians from their Cantorian paradise; rather he may echo the sentiments of Wittgenstein:

I would say, 'I wouldn't dream of trying to drive anyone from this paradise.' I would do something quite different: I would try to show you that it is not a paradise--so that you'll leave of your own accord. I would say, 'You're welcome to this; just look about you.' {6}

Once we take a good, sensible look at the counter-intuitive and, in the end, contradictory situations which could be engendered by the existence of an actual infinite, then I think we ought to welcome ontological parsimony and reject the metaphysical possibility of the existence of an actual infinite. Of course, I could be completely wrong about this; but if I am, it will take more than a passing reference to the logical consistency of axiomatized infinite set theory to prove it.

### **The Formation of an Actual Infinite by Successive Addition**

I also argued that an actual infinite cannot be formed by successive addition and that Mackie's allegation that the argument illicitly assumes an infinitely distant starting point is groundless; moreover, Mackie seems to commit the fallacy of composition in inferring that because any finite segment of an infinite series can be formed by successive addition, therefore the whole series can be so formed. Here I feel virtually certain that Oppy has misunderstood Mackie's objection. Mackie is merely reiterating a traditional objection to the *kalam* argument which states that although an infinite series cannot be formed by beginning at a point and successively adding to it, an infinite past does not involve a beginning point and so evades the thrust of the argument. Mackie nowhere endorses Oppy's claim that infinite series of ordinal type  $\omega$  can be traversed. Indeed, Oppy's assertion that a series like 1, 2, 3, . . . , 3, 2, 1 is an infinite which can be traversed seems bizarre. For this is apparently a series consisting of an infinite series of order type  $\omega$  plus three non-ordinal numbers (unless he has forgotten the minus-signs before the last three numbers, in which case the order type is  $\omega + \omega^*$ ). But how is such a series completable? One could count forever and never complete the series, much less arrive at the second 3. If I started counting now, when would I arrive at that second 3? Let us have no fictional suggestions about counting progressively faster so that the infinite super-task is completed in a finite time, for such scenarios are wholly unrealistic (and do not represent in any case how the temporal series of events is formed). The fact is that I would *never* arrive at the second 3. Mackie, as I say, never disputes this. On the contrary, he charges that the *kalam* proponent surreptitiously treats the series of past events as an  $\omega$ -type series and the present event as existing after the completion of that series, which is impossible. I denied that the *kalam* arguer makes any such assumption, claiming that the

formation by successive addition of an  $w^*$  series is as inconceivable as the formation by successive addition of an  $w$  series.

Oppy, however, charges that I myself make the alleged, illicit assumption. He apparently thinks that I do (or should) concede the possibility of the formation of an actual infinite by successive addition in case the infinite series has a starting point, but that I deny such a possibility in case the series is beginningless. Such an attitude, he says, is just "a prejudice, against certain sorts of infinities, which relies on the unsupported assumption that any temporal sequence must have a first member." {7} Oppy's interpretation is mistaken, however: if I am prejudiced, it is against the formation by successive addition of *any* actual infinite. But how does my argument beg the question by taking as an "unsupported assumption" what appears to be the conclusion of the argument? Oppy says, "What [Craig] says is that it is a legitimate objection to infinities which have no first member that they cannot be traversed. But what does this mean? Well, as far as I can see, it means that it is a legitimate objection to infinities which have no first member that they have no first member!" {8} I must say that it is not obvious to me that to say that a beginningless infinite series cannot be traversed means that it has no first member. The best sense I can make of Oppy's claim is that the notion of traversal entails a beginning point, so that a series with no beginning point cannot be traversed. But such a construal of traversal seems clearly wrong: a man who has just finished counting all the negative numbers, for example, has "traversed" a beginningless, infinite series. To traverse a series means just to cross it or pass through it one member at a time. Hence, I am quite at a loss to understand how the *kalam* cosmological argument begs the question by assuming implicitly that the past has a beginning point.

As for my charge that Mackie fallaciously infers that because every proper part of an infinite series can be formed by successive addition the whole series can be so formed, Oppy puts the following charitable reading on Mackie's point: ". . . Mackie's point reveals that the whole series is formed by successive addition--in the sense that, for each point in the series, there is an earlier one from which it derives by addition." {9} But this point follows simply from the temporal character of the series at issue and, far from being in dispute, is a premiss in the *kalam* cosmological argument, namely, "The temporal series of past events is a collection formed by successive addition," which must be defended against B-theoretical detractors of temporal becoming.

In short, it seems to me that Mackie's objections to the second premiss of the *kalam* cosmological argument are unsound and that Oppy's attempt to reinstate them is no more successful than Mackie's original statement of them. If either one of my arguments is sound, the series of past events cannot be infinite and, hence, the universe began to exist.

### **Whatever Begins to Exist Has a Cause**

Oppy's lack of differentiation between logical and ontological modality resurfaces in his discussion of the *kalam* cosmological argument's intuitively plausible and empirically verified first premiss, that whatever begins to exist has a cause. He states, "Essentially, Mackie's view is that, given the standard test for judgments of possibility (i.e.

conceivability in which there is no appearance of logical consistency), we have good reason to suppose that it is possible for something to begin to exist uncaused." {10} But we have already seen that mere freedom from logical inconsistency is no indication of metaphysical possibility. Indeed, since Kripke, it is widely acknowledged that there are even synthetic, metaphysically necessary, *a posteriori* truths, whose contradictories are quite conceivable in Oppy's sense. {11} 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. Hence, Oppy is mistaken when he says, "If the proponent of the *kalam* cosmological argument wishes to deny that it is possible for something to begin to exist uncaused, then s/he needs to provide some argument which shows that there is a logical inconsistency in this claim." {12} Not only does this assertion conflate logical and ontological modality, but even more fundamentally, I do not see that the *kalam* proponent is obligated to provide any sort of *argument* for his causal premiss. 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 premisses less obvious than the conclusion. In the same way, the premiss *ex nihilo nihil fit* is so obvious that even Hume accepted it without argument, regarding its denial as an instance of unlivable Pyrrhonic scepticism.

Consider, nonetheless, Jonathan Edwards's argument on behalf of the causal principle: if something can come into being uncaused out of nothing, then it is inexplicable why anything and everything does not do so. Oppy says that any and everything does not come into being uncaused out of nothing because some things have actual causes. Of course, they do; but what is the *explanation* for that fact and for the fact that people, televisions, and Eskimo villages do not pop into being uncaused out of nothing, if this is, as Oppy proceeds to assert, possible? He seems to answer that ". . . our universe is governed by certain conservation laws which ensure that such things do not actually happen." {13} But this explanation is inadequate because insofar as natural laws are inductive generalizations, they are merely descriptions of what does or does not happen in the universe; and insofar as they are invested with nomic necessity, such necessity derives solely from the causal powers and dispositions of things that actually exist. In neither case is any sort of constraint placed on things' springing uncaused out of nothingness into being. After all, there is nothing there to be constrained. So does it not strike one as peculiar that it is only the universe which comes magically into being out of nothing rather than all sorts of other things as well?

## God and the Origin of the Universe

It seems to me that the plain fact of the matter is that no reason exists to deny the causal principle with respect to the origin of the universe, *except* for the fact that it implies theism. But what is the matter with that? Mackie merely asserts without explanation or argument that God's being timeless is "completely mysterious." I offered an account of God's relationship to time in terms of God's being timeless without creation and in time subsequent to creation. {14} All Oppy has to say about this is, "How does God's existing 'changelessly and timelessly' differ from his coming into existence uncaused at the very moment at which time is created?" {15} But this is an easy one; in the latter case He

would begin to exist (and would therefore, incidentally, require a cause), whereas in the former case He would not. Not only is the account I offered conceivable in the strictly logical sense, but it also involves no metaphysical absurdity, as does the universe's coming into being uncaused out of nothing--or at least, its detractors have yet to expose any such absurdity.

Oppy's ensuing remarks on the factual versus broadly logical necessity of God's existence seem evidently confused. Let me set the context for this *Auseinandersetzung*. Some thinkers eschew philosophical arguments for a beginning of time and the universe and hold on the basis of scientific evidence alone that the universe began to exist. Such persons may hold that God exists for infinite time prior to the creation of the universe. Mackie objected that in such a case the theist is assuming that God's existence is self-explanatory in the sense of being broadly logically necessary, which Mackie finds unintelligible. I rejoined that the *kalam* argument requires only that God's existence be factually necessary, that is, eternal and uncaused, a notion to which Mackie could hardly object, since this is exactly what he as an atheist thinks could be true of the universe. To which Oppy retorts:

But, if this 'necessity' is not the (allegedly) unintelligible notion which is required by the Leibnizian cosmological argument, then it seems to me that one is entitled to suggest that perhaps the universe itself is 'an eternal and uncaused being.' I do not see how there can be a principled way of allowing that God has this property and yet the universe cannot have it. (The universe exists changelessly and timelessly with an eternal determination to become a temporal world. Sounds fine to me!){16}

In his first sentence Oppy shifts ground from Mackie's charge that God's being self-explanatory is unintelligible to re-affirming exactly what I said: the atheist holds that the universe could be a factually necessary being--so how is the theist's similar affirmation of God unintelligible? In his second sentence Oppy demands what reason there is to think that the universe cannot be factually necessary like God--thereby forgetting that in the case under consideration we are talking about our having merely scientific evidence for a beginning of the universe, which shows that although the universe *could* be factually necessary, in fact it *is* not. Then in the third sentence, he shifts from the hypothesis under consideration (God's existing for infinite time prior to creation) back to my suggestion that God without creation exists timelessly with an eternal determination to create a temporal world, and he hypothesizes that the universe could exist in a similar manner. But the "eternal determination" of which I spoke was a free decision of the will, so that it seems silly to predicate this of the universe. If Oppy means to suggest that the universe existed in an absolutely quiescent state and became temporal only upon the occurrence of the first event, then I had already dealt with such a hypothesis in *The Kalam Cosmological Argument* and elsewhere. {17} In short, there is nothing unintelligible about God's being a factually necessary being, whether one denies the universe's factual necessity on the basis of philosophical considerations (infinite regress arguments) or scientific considerations (empirical cosmology).

Mackie's final gambit was to assert that if we are convinced that whatever begins to exist has a cause, then we should simply reject the scientific evidence that the universe began to exist. Oppy likewise charges that the standard Big Bang model does not require *creatio ex nihilo* because the claim that it does depends on the assumption that the initial singular point of infinite density is equivalent to nothing. I confess that I do think the initial cosmological singularity has no positive ontological status, though not on the basis of the impossibility of an actual infinite, as Oppy surmises. I recognize that such an interpretation is controversial, and I have defended my interpretation elsewhere. {18} But we may let that pass; for the more important point is that the scientific evidence for the absolute origin of the universe does not depend on this interpretation. For if one thinks that the initial cosmological singularity is a real, physical state, and therefore in some sense part of the universe, it is still the case that the singularity and, hence, the universe comes into being without any material or efficient cause and therefore originates *ex nihilo*. Thus the standard model, whatever one's interpretation of the ontological status of the initial singularity, points to an origin of the universe *ex nihilo*. {19}

## Conclusion

In conclusion, then, I think that the refutations proffered by Mackie of the *kalam* cosmological argument were all too quick and easy. Nor do I think Oppy has succeeded in rehabilitating those refutations.

## Endnotes

{1} Graham Oppy, "Craig, Mackie, and the *Kalam* Cosmological Argument," *Religious Studies* 27 (1991): 189-97; in response to William Lane Craig, "Prof. Mackie and the *Kalam* Cosmological Argument," *Religious Studies* 20 (1984): 367-75; itself a response to J.L. Mackie, *The Miracle of Theism* (Oxford: Clarendon Press, 1982), pp. 93-95; a refutation of the argument in William Lane Craig, *The Kalam Cosmological Argument*, Library of Philosophy and Religion (London: Macmillan, 1979).

{2} Oppy, "*Kalam* Cosmological Argument," pp. 194, 195.

{3} *Ibid.*, p. 193.

{4} Alvin Plantinga, "Is Theism Really a Miracle?" *Faith and Philosophy* 3 (1986): 117.

{5} See discussion in Michael J. Loux, "Introduction: Modality and Metaphysics," in *The Possible and the Actual*, ed. Michael J. Loux (Ithaca, N.Y.: Cornell University Press, 1979), pp. 48-49.

{6} Ludwig Wittgenstein, *Lectures on the Foundations of Mathematics*, ed. Cora Diamond (Sussex, England: Harvester Press, 1976), p. 103.

{7} Oppy, "*Kalam* Cosmological Argument," p. 195.

{8} Ibid., p. 194.

{9} Ibid., p. 195.

{10} Ibid.

{11} Saul A. Kripke, *Naming and Necessity*, rev. ed. (Oxford: Basil Blackwell, 1980), pp. 140-42.

{12} Oppy, "Kalam Cosmological Argument," p. 195.

{13} Ibid., p. 196.

{14} I refer again to my account in "God, Time, and Eternity," *Religious Studies* 14 (1978): 497-503 and add my "Julian Wolfe and Infinite Time," *International Journal for Philosophy of Religion* 11 (1980): 133-35. I hope to provide a fuller and more satisfactory account in a forthcoming book on divine eternity.

{15} Oppy, "Kalam Cosmological Argument," p. 196.

{16} Ibid., pp. 196-97.

{17} Craig, *Kalam Cosmological Argument*, pp. 99-102; idem, "The Kalam Cosmological Argument and the Hypothesis of a Quiescent Universe," *Faith and Philosophy* 8 (1991): 104-08.

{18} William Lane Craig, "God and the Initial Cosmological Singularity," *Faith and Philosophy* 9 (1992): 237- 47; idem, "Theism and Big Bang Cosmology," *Australasian Journal of Philosophy* 69 (1991): 496-99.

{19} See the concurrence of my atheist interlocutor Quentin Smith, "The Uncaused Beginning of the Universe," *Philosophy of Science* 55 (1988): 39-57. Our bone of contention is whether the origin *ex nihilo* of the universe requires a cause; see William Lane Craig, "The Caused Beginning of the Universe," *British Journal for the Philosophy of Science* 44 (1993): 623- 39.