Professor Mackie and the Kalam Cosmological Argument

William Lane Craig

SUMMARY

Against the second premiss of the *kalam* cosmological argument, that *the universe began to exist,* J. L. Mackie objects that the arguments for it either assume an infinitely distant beginning point or fail to understand the nature of infinity. In fact, the argument does not assume any sort of beginning point, whereas Mackie himself commits the fallacy of composition. Mackie fails to show that infinite collections can be instantiated in the real world. Against the first premiss, that *whatever begins to exist has a cause*, Mackie objects that there is no good reason to accept *a priori* this premiss and that *creatio ex nihilo* is problematic. But Mackie does not refute the premiss and even admits its plausibility. One can resolve the conundrums of *creatio ex nihilo* by holding God to be timeless *sans* creation and temporal with creation.

PROFESSOR MACKIE AND THE KALAM COSMOLOGICAL ARGUMENT

Introduction

Like David Hume's *Dialogues Concerning Natural Religion,* J. L. Mackie's most potent blast against the rationality of belief in God, his *The Miracle of Theism* appeared after his death. [1] The book is a broadside against not only the traditional arguments for God's existence, such as the onto-, cosmo-, and teleological arguments, but also against proofs from consciousness, miracles, the idea of God, and so forth, and against the validity of religious experience and faith without reason, and it presents as well negative arguments against divine existence. The book will no doubt supply much grist for the mill of future discussions, but in this piece I should like to focus on Mackie's analysis of one particular argument, the *kalam* cosmological argument. For his discussion at this point seems to me to be superficial, and I think it can be shown that he has failed to provide any compelling or even intuitively appealing objection against the argument.

The *kalam* argument is simply the old first cause cosmological argument based on impossibility of an infinite temporal regress of events. It may be schematized:

1. Whatever begins to exist has a cause of its existence.

2. The universe began to exist.

2.1 Argument based on the impossibility of an actual infinite:

2.11 An actual infinite cannot exist.

2.12 An infinite temporal regress of events is an actual infinite.

2.13 Therefore, an infinite temporal regress of events cannot exist.

2.2 Argument based on the impossibility of the formation of an actual infinite by successive addition:

2.21 A collection formed by successive addition cannot be actually infinite.

2.22 The temporal series of past events is a collection formed by successive addition.

2.23 Therefore, the temporal series of past events cannot be actually infinite.

3. Therefore, the universe has a cause of its existence.

Since the universe is the temporal series of events, the proof that that series had a beginning is taken to show that the universe began to exist. This conclusion has, as Mackie notes, received strong empirical support from cosmological research in astronomy and astrophysics during the last fifty years. Since the universe began to exist a finite time ago, it must have been brought into being by a reality *extra se.*

Mackie's Critique

Mackie objects to both premisses of the *kalam* cosmological argument. Turning his attention first to (2)*,* Mackie asserts that (2.2) just expresses a prejudice against an actual infinity. [2] In the medieval versions of the argument, (2.2) was often portrayed as the impossibility of traversing the infinite. Since an infinite distance cannot be crossed, if the past were infinite, then today would never arrive, But this is obviously absurd, since today has arrived. Therefore, the past must be finite. Against this version of the argument, Mackie objects that it illicitly assumes an infinitely distant starting point for the temporal series and then pronounces it impossible to traverse the distance from that point to today. If we take the notion of infinity seriously, however, we must say that in an infinite past there would be no starting point whatever, even an infinitely distant one. Thus, from any specific point in past time there is only a finite stretch that needs to be traversed to reach the present.

Mackie finds (2.1) to be a more ingenious argument, but nonetheless fallacious. He contends that a proper understanding of the principles employed in infinite set theory enables us to see that the alleged absurdities entailed by the existence of an actual infinite (for example, infinities of different sizes), to which the proponent of the *kalam* argument appeals as evidence for (2.11)*,* in fact involve no real contradiction. [3]This is because our normal criteria for *smaller than* and *equal to* fail to be mutually exclusive for infinite groups. For finite groups to be *smaller than* means that the

members of one group can be correlated one to one with a proper part of another group; to be equal to means that the members of the two groups can be exactly matched in a one to one correlation. These two criteria are mutually exclusive for all finite groups, but not for infinite groups. Once we understand this relation between the two criteria, we see that there is no real contradiction.

Mackie admits, however, that many people still harbour doubts about the existence of an actual infinite in the real world and that not all mathematicians or philosophers are ready to accept the actual infinite even in the mathematical realm. Moreover, current astronomy supports a finite past history for the universe. But, he continues, even if we grant (2) that the universe began to exist, there is no good reason to accept (1). For ' . . . there is *a priori* no good reason why a sheer origination of things, not determined by anything, should be unacceptable, whereas the existence of a god [sir] with the power to create something out of nothing is acceptable.' [4] Indeed*, creatio ex nihilo* raises problems: (i) if God began to exist at a point in time, then this is as great a puzzle as the sheer origination of a material world; (ii) if God has existed for infinite time, this would raise again the problem of the actual infinite; (iii) if God's existence is not in time at all, this would be a complete mystery.

Suppose someone sought to escape these difficulties by proving the beginning of the universe by empirical evidence alone, not appealing to the philosophical arguments concerning the actual infinite, and then fastening on (ii). In that case, Mackie rejoins, he is still using the crucial assumptions that God's existence and power are self-explanatory, but that the unexplained origination of a material world is unintelligible. But this first assumption borrows from the ontological argument the notion of a being whose existence is self-explanatory because its non-existence is impossible, a notion that is indefensible. And as for the second assumption, there is no good ground for an *a priori* certainty that the beginning of things could not have been sheerly inexplicable. If we do find this origin of something from nothing improbable, then it should only serve to cast doubt on the interpretation of the big bang as an absolute beginning. Thus, the idea of creation is vaguely explanatory, apparently satisfying, until, that is, we take a hard look at it and try to formulate the suggestion precisely. Therefore, the *kalam* cosmological argument fails.

Response

As I said, it seems to me that none of Mackie's objections is cogently proved or even intuitively appealing. To see this, let us retrace our steps, examining Mackie's refutations as we go. With regard to (2.2) he is mistaken to call this a prejudice against the actual infinite, for the argument does not deny, as does (2.1) that an actual infinite can exist, but only that it can be formed by successive addition, or to use the medieval idiom, that it can be traversed. Mackie's objection that

this impossibility is based on the assumption of an infinitely distant starting point is entirely groundless. I know of no proponent of the *kalam* argument who made such an assumption; on the contrary, the beginningless character of an infinite temporal series serves only to underscore the difficulty of its formation by successive addition. For in this case the past would be like the second version of Zeno's Dichotomy paradox, in which Achilles to reach a certain point must have travelled across an infinite series of intervals from the beginningless and open end, with this exception: in the case of the past, unlike the case of the stadium, the intervals are actual and equal. The fact that there is no beginning at all, not even an infinitely distant one, makes the difficulty worse, not better. It is not the proponent of the *kalam* argument who fails to take infinity seriously. He is all too aware that the order type of the series in question would be *w, the order type of the negative numbers. For the past to have been formed by successive addition, to have been 'traversed', would be equivalent to saying someone has just succeeded in enumerating all the negative numbers ending at 0. But this seems to be inconceivable; as G. J. Whitrow urges, a collection of order type *w is simply not constructible. Whitrow notes that the question of how a sequence of events of this order-type could actually be produced is all too frequently ignored by those who base the possibility of an infinite past on Cantor's theory of infinite sets. In fact, the only way in which we can define the infinite set of negative integers is by *beginning* with -1, but this does not correspond to the order in which the events that we may wish to associate with them occur in time. Since the set of order type *w is non-constructible, there is no reason for assuming it could represent an infinite sequence of past events. [5]5 Be that as it may, it seems clear that the proponent of the *kalam* argument is not assuming an infinitely distant beginning, as Mackie alleges.

And, we may ask, how is Mackie's point that from any specific moment in past time there is only a finite stretch to the present even relevant to the issue? [6] The defender of the *kalam* argument may grant the point with equanimity. The issue is how the *whole* series can be traversed or formed by successive addition, not a finite segment of it. Does Mackie think because every finite segment of the series can be so formed or traversed that the whole can ? That would be to commit the fallacy of composition. In fact, Mackie's point appears to be true but uninteresting. [7]

Turning to (2.1)*,* Mackie has only succeeded in specifying some of the conditions which give rise to the absurdities entailed in the existence of an actual infinite, but he has done nothing to justify the assumption that those conditions may hold in the real world. He asserts, in effect, that both the Euclidean principle that the whole is greater than its part and the Cantorian principle of correspondence hold for finite collections, but that they are incompatible when applied to infinite collections. Infinite set theory therefore maintains logical consistency by abandoning the Euclidean principle. But the question is not whether infinite set theory, granted its conventions and axioms,

constitutes an internally logically consistent system. The issue is whether such a system can be instantiated or obtain in the real world. Rather than alleviating the difficulties entailed therein, Mackie has merely specified an aspect of that system which supplies the conditions which, if instantiated in the real world, would spawn the absurdities like Hilbert's Hotel or Russell's Tristram Shandy paradox. The price paid for abandoning the Euclidean principle with regard to infinite collections in favour of the principle of correspondence would be being saddled with all the absurd situations which would be entailed *if* an infinite collection could exist in reality. Thus, Mackie has said nothing to resolve the absurdities or to commend to our thinking the real existence of an actual infinite.

The proponent of the *kalam* argument, on the other hand, may grant, if he wishes, the practice of adopting the principle of correspondence as a convention in infinite set theory in preference to Euclid's principle, but he reminds us that this carries with it no ontological commitment concerning the real world. In the real world the absurdities in question do not arise because no actual infinite exists. Only finite collections actually exist, and therefore both Euclid's principle and Cantor's principle hold of them.

Professor Mackie's attempts to refute (2), therefore, seem to fall far short of the mark. He himself recognizes that some thinkers question even the legitimacy of the actual infinite in mathematics and that (2) is probable on scientific grounds alone. Therefore, it is incumbent upon him to turn back the force of (1) Whatever begins to exist has a cause of its existence. Rather than refute the principle, however, he simply demands what good reason there is *a priori* to accept it. He writes, 'As Hume pointed out, we can certainly conceive an uncaused beginning-to-be of an object; if what we can thus conceive is nevertheless in some way impossible, this still requires to be shown.' [8] But as has been often pointed out, Hume's argument in no way makes it plausible to think that something could really come into existence without a cause. As G. E. M. Anscombe observes, Hume asks us to envision a picture, as it were, of something coming into being without a cause and to title the picture '*x* coming into being without a cause'. She comments 'Indeed I can form an image and give my picture that title. But from my being able to do *that*, nothing whatever follows about what is possible to suppose " without contradiction or absurdity " as holding in reality'. [9] What the defender of the *kalam* argument maintains is that it is really impossible for something to come from nothing. But how can this be shown? I think that one could produce arguments for the principle, [10] but that since the principle is so intuitively obvious in itself, it would he perhaps unwise to do so, for one ought not to try to prove the obvious via the less obvious. After all, does anyone sincerely think that things can pop into existence uncaused out of nothing? Does he believe that it is really possible that, say, a raging tiger should suddenly come into existence uncaused out of nothing in the room in which he is now reading this article? How much

the same would this seem to apply to the entire universe! If there were originally absolute nothingness --no God, no space, no time-- how could the universe possibly come to exist?

In fact, Mackie's appeal to Hume at this point seems counter-productive. For Hume himself clearly believed in the causal principle. He presupposes throughout the *Enquiry* that events have causes, and in 1754 he wrote to John Stewart, 'But allow me to tell you that I never asserted so absurd a Proposition as *that anything might arise without a cause:* I only maintain'd, that our Certainty of the Falshood of that Proposition proceeded neither from Intuition nor Demonstration, but from another Source.' [11] This appears at first sight contradictory to Hume's claim in the footnote of *Enquiry* xii.III.132 to have refuted the maxim, *Ex nihilo nihil fit.* But the context makes clear that what Hume was denying was that one may infer like causes from like effects; the inference of a cause *simpliciter* is not only unchallenged, but even assumed. Actually Hume is defending here *creatio ex nihilo* but he mistakenly (or cleverly) plays it off against the above maxim, which originally meant to assert the necessity *creatio* ex *nihilo. It is* especially interesting that Hume thus not only grants the first premiss of the *kalam* cosmological argument, but he also concedes the second. For in *Enquiry* xii.*II.125* he speaks of the palpable absurdity entailed in the existence of an infinite past, appealing to (2.2) of the *kalam* argument: 'An infinite number of real parts of time, passing in succession, and exhausted one after another, appears so evident a contradiction, that no man, one should think, whose judgment is not corrupted, instead of being improved, by the sciences, would ever be able to admit of it.' In the attendant footnote, Hume proposes as the 'readiest solution' to these 'absurdities and contradictions' of abstract reason that we regard universals and abstract entities nominalistically, so that '. . . all the ideas of quantity, upon which mathematicians reason, are nothing but particular, and such as are suggested by the senses and imagination, and consequently, cannot be infinitely divisible'. This seems to be a wholly commendable suggestion, one with which I have a good deal of sympathy, but it is clear that it does nothing to resolve the difficulties entailed in the *real* existence of an actually infinite member of past events. Hume therefore in effect concedes the second premiss of the *kalam* argument and therefore, given his belief in the causal principle, should have concluded to a cause of the existence of the universe.

Hume would probably have protested at this point that while his mitigated skepticism would allow the use of the principle in everyday life, its extrapolation beyond common life would be disallowed. For if ' . . we cannot give a satisfactory reason, why we believe, after a thousand experiments, that a stone will fall, or fire burn; can we ever satisfy ourselves concerning any determination, which we may form, with regard to the origin of worlds, and the situation of nature, from, and to eternity?' [12] But this artificial restriction has become clearly untenable in light of the progress made in theoretical physics and other abstract sciences, which are light years away from the reflections necessary for the conduct of everyday life. Indeed, exploration and determination of

precisely those questions which Hume thought unanswerable are commonplace in astronomy and astrophysics. There seems no way to escape the charge of *ad hoc* arbitrariness if one grants the causal principle as plausible and reasonable and yet forbids its application to the origin of the universe. Even Mackie confesses, 'Still, this principle has some plausibility, in that it is constantly confirmed in our experience (and also used, reasonably, in interpreting our experience.)'. [13] So why not accept the truth of (1) as plausible and reasonable, at least more so than its opposite?

Because, Mackie responds, in this context the theism implied in granting the principle is even more unintelligible than the denial of the principle. But is this the case? Certainly the proponent of the *kalam* argument would not hold to Mackie's option (i). Nor would he hold to (ii) if he regarded the philosophical arguments for (2) as cogent, for God without the creation would have to exist changelessly, if one is to avoid an infinite regress of events in God's life. Therefore, he holds quite happily to some version of (iii), most plausibly, I would argue, by maintaining that God without creation exists changelessly and timelessly with an eternal determination for the creation of a temporal world and that with creation God enters into temporal relationships with the universe, time arising concommitantly with the first event. [14] This may be mysterious in the sense of being wonderful or awesome, which indeed it is, but it is not so far as I can see unintelligible, as is something's coming into being uncaused out of nothing. [15]

But is not the notion of God as a self-explanatory being unintelligible and indefensible? Here Mackie has clearly confounded the *kalam* cosmological argument with the Leibnizian cosmological argument. [16] He charges that the Leibnizian argument commits one to the unintelligible notion of God as a being whose non-existence is logically impossible. If one rejoins that by 'necessary existence' one means here metaphysically necessary, in the sense of not dependent upon something else' or 'incapable of non-existence, if it exists', then Mackie retorts that the Leibnizian argument fails of cogency. But, of course, this is entirely irrelevant to the *kalam* cosmological argument. That argument only commits one to the necessity of God as an eternal and uncaused being, properties that characterize what philosophers for the last 20 years have been calling a 'factually necessary' being. Mackie can hardly object to intelligibility of this sort of necessary being, since it is precisely what he as an atheist thinks the universe could be.

Therefore, it seems to me that Professor Mackie has provided no good reason for rejecting the intuitive plausibility of (1). But suppose we do accept, states Mackie, that it is improbable that the universe should have sprung into being uncaused out of nothing. Does not this make it probable that the universe was caused to exist? No, he insists, for now we should doubt that the beginning of the universe established in (2) by empirical evidence was an absolute beginning his assumes, however, that the philosophical arguments in (2.1) and (2.2) are unsound, which Mackie does not seem to have shown. But secondly, even on a scientific level Mackie's hypothesis encounters

difficulties.. For according to the standard model of the universe, the universe originated in an explosion from a point of infinite density some 9-15 billion years ago. The further one regresses in time, the denser the universe becomes until one finally reaches a point at which the universe was contracted down to a single mathematical point, from which the universe began to expand. But a point of infinite density is synonymous with 'nothing'. There can be no object in the real world which possesses infinite density, for if it had any extension whatsoever it could be even more dense. Therefore, what the Big Bang model actually requires, as Hoyle points out, is *creatio ex nihilo*; this is because as one follows the expansion back in time one reaches a time at which the universe was 'shrunk down to nothing at all'. [17] Now if Mackie wants to deny this conclusion, then he is quite simply obligated to come up with another model to supplant the standard model. But of course he has not done so. Some scientists, uncomfortable with the idea of an absolute beginning, have entertained oscillating models of the universe; but while such mathematical models have been drafted, they have also been shown to he physically, thermodynamically, and observationally untenable. Moreover, it would seem that since in such models the universe would have to pass through a singularity with each oscillation, then with every contraction, the universe would have to disappear into non-being and with each expansion emerge *de novo* from nothing. It is difficult to see what has been gained from this.

What is Mackie's counsel? We should infer that the universe must have had *some* physical antecedents, even if the big bang has to be taken as a discontinuity so radical that we cannot explain it, because we can find no laws which we can extrapolate backwards through this discontinuity.' [18] Here I think we see more clearly than ever the quasi-religious character of Mackie's atheism. Either we believe that the universe came to exist uncaused out of nothing or else no matter what the empirical evidence for an absolute beginning, no matter how deep a caesura we have to carve in nature, we should infer that the universe must be eternal. The existence of a creator God is not even an alternative. The theist can hardly be blamed for not impaling himself on the horns of *this* dilemma. On the contrary, in light of the foregoing discussion, of the three options, theism seems the most plausible route to take.

In conclusion, Professor Mackie's objections to the *kalam* argument appear to be unsound. His objection against (2.2), when relevant, only strengthened the argument therein, while his analysis of (2.1) merely drew our attention to the conditions which generate the absurdities in question. He provided no good reason to doubt the truth of (1) *per se,* a truth which is intuitively appealing and which he admits to be confirmed in our experience. His attempts to undermine (1) in this special context failed to show any unintelligibility either in God's relation to the world or in His mode of existence. Hence, neither premise of the argument appears to have been successfully refuted. However else we may judge the rest of Mackie's book, it seems that with regard to the *kalam*

cosmological argument, at least, his parting shot has missed its target.

Footnotes:

[1]

J. L. Mackie, *The Miracle of Theism: Arguments for and against the Existence of God* (Oxford: Clarendon Press, 1982). The title is a clever allusion to Hume's remark in the tenth chapter of his *Enquiry Concerning Human Understanding* that it is a miracle that anyone assents to the Christian faith.

[2]

Mackie, *Theism*, p. 93.

[3]

Ibid.

[4]

Ibid. p. 94.

[5]

G. J. Whitrow, critical notice in *British Journal for the Philosophy of Science* XXXI (1980), 409. See also *idem, The Natural Philosophy of Time*, 2nd ed. (Oxford: Clarendon Press, 1980), pp. 28-32.

[6]

This same rejoinder was used unsuccessfully by Aquinas against Bonaventure (*Scg* 2.38; *St* 1.46.2 *ad* 6). For a discussion see Francis J. Kovach, 'The question of the eternity of the world in St. Bonaventure and St Thomas - A critical analysis', *Southwestern Journal of Philosophy* v (1974), 141-72.

[7]

It may not even be true. Some modern defenders of the *kalam* argument have argued that an infinite past would entail the existence of moments infinitely removed from the present. For an analysis, see William Lane Craig, 'The finitude of the past', *Alethia* II (1981), 235-42.

[8]

Mackie, *Theism*, p.89.

[9]

G. E. M. Anscombe, '" Whatever has a beginning of existence must have a cause": Hume's argument exposed', *Analysis* XXXIV (1974), 150.

[10]

For example, Jonathan Edwards' argument in his *On The Freedom of the Will* 2.3 that something cannot come into existence uncaused because it then becomes inexplicable why just anything and everything does not come into existence uncaused. It cannot then be said that only things of a certain nature come into existence uncaused because prior to their existence they have no nature which could control their coming to be. For a discussion see Arthur N. Prior, 'Limited indeterminism,' in *Papers on Time and Tense* (Oxford: Clarendon Press, 1968), p. 65.

[11]

David Hume to John Stewart, February 1754, in *The Letters of David Hume*, 2 vols., ed. J. T. Grieg (Oxford: Clarendon Press, 1932), 1, 187.

[12]

David Hume, *Enquiry Concerning Human Understanding*, ed. L. A. Selby- Bigge, 3rd ed., ed. P. H. Nidditch (Oxford: Clarendon Press, 1975), xii.III.130.

[13]

Mackie, *Theism*, p. 89.

[14]

William Lane Craig, 'God, time and eternity', *Religious Studies* XIV (1978), 497-503.

[15]

Note that whereas for the theist creation lacks a material cause but has an efficient cause, for Mackie the universe lacks both a material *and* an efficient cause (as well as any other sort of cause, such as final, formal or whatever).

[16]

Mackie, *Theism*, pp. 84, 94.

[17]

Fred Hoyle, *From Stonehenge to Modern Cosmology* (San Francisco: W. H. Freeman & Co., 1972), p. 36; *Idem, Astronomy and Cosmology: A Modern Course* (San Francisco: W. H. Freeman, 1975), p. 658.

[18]

Mackie, *Theism*, pp. 94-5.