Adler's Cosmological Argument for the Existence of God

John Cramer

3537 Peppermint Court
Tucker, GA 30084

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Fifteen years have passed since the book, How to Think about God, by Mortimer J. Adler was published. It is a revised version of the traditional cosmological argument for the existence of God. Since then, many relevant developments in science have occurred and new philosophical critiques of cosmological arguments have appeared. In this article, I review the status of the concept of inertia, current theories of cosmology, and arguments by J.L. Mackie and Adolph Grunbaum that consider their implications for the plausibility of Adler's argument. I conclude that, on balance, these developments enhance its plausibility.

Adler's Cosmological Argument

In 1980, Mortimer J. Adler published an interesting little book titled, *How to Think about God*.[1] He subtitled it "a guide for the 20th-century pagan" and immediately appended a footnote to the subtitle defining a pagan as someone who does not worship the God of Christians, Jews, or Muslims. In the book, Adler critiqued traditional proofs for the existence of God as a springboard for presenting his own variation of the argument from contingency.

The philosophical asides on the French existentialists, the errors of Immanuel Kant, and the fads of theological and philosophical thought alone make the book enjoyable and worthwhile reading. The main argument, however, is of considerable interest in its own right. Moreover, many relevant developments have occurred since the publication of the book that, I believe, strengthen his case. Therefore, it seems appropriate to reconsider and extend his arguments and considerations.

The first move Adler makes is to discount the possibility that the cosmos had an absolute beginning. He does not argue the cosmos has existed forever; he explicitly assumes so. The reason for this move is that if the universe truly had an absolute beginning, it was made from nothing. In Adler's words, it was "exnihilated." But, an exnihilated cosmos

implies "... that God, the exnihilator, exists."[2] Therefore, Adler is compelled to assume an eternal universe to avoid creating a circular argument for the existence of God.

Starting with an eternal cosmos, Adler also rejects attempts to argue for the existence of a first cause of the cosmos, which would, of course, soon turn out to be God. With a universe stretching back into an infinite past, an infinite series of causes without *terminus* is just as possible as the eternal universe he has just assumed.

The basic premises of his argument derive from the traditional argument for the existence of God based on the existence of contingent entities (which Adler calls "the best traditional argument"). He lists these premises as follows:

1. The existence of an effect that requires the operation of a coexistent cause implies the coexistence of that cause.

2. Whatever exists either does or does not need a cause of its existence at every moment of its existence; that is, while it endures, from the moment of its coming to be to the moment of its passing away.

3. A contingent being is one that needs a cause of its continuing existence at every moment of its endurance in existence.

4. No contingent being causes the continuing existence of any other contingent being.

5. Contingent beings exist in this world and endure, or continue in existence, from the moment of their coming to be to the moment of their passing away.[3]

If these premises are true, it then follows that a noncontingent being must exist that continues the existence of those contingent beings we most certainly know exist. That is, a necessary being exists and holds all else in existence. The necessary being can only be the supreme being, God.

However, Adler judges the third premise probably false and the traditional argument for the existence of God from contingency a failure. The judgment is based on the observation that the contingency we observe in the universe is superficial, involving only transformations. Radical contingency, involving exnihilation and annihilation of entities, if it occurred, would call for a different conclusion. Adler also judges the third premise false because it is plausible that contingent beings, once generated, can indeed continue to exist on their own until some cause proves their contingency by causing them to cease to exist. Adler cites the way the inertia of an object continues the motion of the object and suggests an "inertia of being" may exist to continue existence and falsify the third premise.

Taken together, these ideas show that it is reasonable to reject the argument from contingency. That is, the argument does not lead inexorably to the conclusion that God exists. It might be true but one is not compelled to accept it. Rejection is intellectually respectable.

At this point, Adler recasts the argument. While he regards the third premise as implausible concerning particular entities in the universe, it might be true of the universe as a whole. The entire universe might be radically contingent though no part of it is radically contingent. What is true of the whole is not always true of the parts. For example, the set of all counting numbers is infinite but no one counting number is infinite. Adler argues that the cosmos as a whole is radically contingent.

The argument has two steps. He first notes that the present universe is only one of many possible universes. The long standing discussions among cosmologists about the type of universe we live in are ample evidence of the plausibility of this step. If cosmologists have not reached a conclusion, then the question is open and the possibility of other universes is a reasonable consideration. Do not misunderstand here. Adler needs only the *logical possibility* that the universe might have been other than it is. Physical actualization of the possibility is irrelevant to the force of the argument. Indeed, the *existence* of other universes confuses the argument by confusing the meaning of the term *universe*. Granted that the present universe is not the only possible universe, it then follows that the present universe has only *possible* existence; it does not have *necessary* existence.

The second step is to note that whatever might be otherwise might not exist at all. Anything that necessarily exists must be exactly what it is; it cannot be other than what it is. The converse is also true then—whatever can be otherwise does not exist necessarily and must be able to not exist. However, for the cosmos to cease to exist, it must be annihilated and not merely transformed.

Another way of arriving at the same conclusion is to rely on the principle of sufficient reason. Anything that exists does so because there is sufficient reason for it to do so. The cause that is the sufficient reason may reside either in the thing or in something else but the cause must exist. For a merely possible entity, the sufficient reason cannot reside in the entity but must reside in another. If the universe is merely possible, then the sufficient reason for its existence resides not in the universe but elsewhere. But the universe is all of the physical reality so the merely possible existence of the universe points "outside" the universe to the existence of a nonphysical reality.

Adler concludes then that, by the previous premises, there exists a necessary supreme being so that the universe stays in existence. God must be there to sustain the universe even if the universe is eternal. Beginning by rejecting belief in a creating God, Adler finds evidence of a sustaining God. The existence of a sustaining God, however, then becomes grounds for asserting the creating activity also. Thus, the idea of a created universe with a beginning (and, likely too, an end) now becomes more plausible than the idea of an eternal universe.

Adler regards his argument as showing *beyond reasonable doubt* that God exists. He does not claim *certainty* for the argument.

Critiques and Commentary from Physics

Physical science forms a significant background to the argument. At one point, Adler defends theology against the complaint it deals with things beyond or outside the reach of common experience or observation by noting that most of modern physics also deals with theoretical constructs rather than empirical concepts.

A more important use of physical ideas occurs when Adler rejects the premise that for a contingent being to continue to exist requires the continuous action of a sustaining cause. Adler thinks something like "inertia of being" might plausibly be expected to continue the existence of contingent beings just as the inertia of a body keeps the body in motion (or at rest) without the continuous action of any cause. That is, he takes inertia to be inherent in the nature of a body, independent of the existence or action of other bodies. He is encouraged by that to suppose existence might also be inherent in a contingent object; independent of external causes.

Inertia is the only imaginable example of an inherent agent of perpetuation. Lacking this example, there would be no encouragement to think being might be self-continued. In fact, by Ockham's Razor, inventing an "inertia of being" might be an indefensible proliferation of entities. Since Ernst Mach is often said to have thought that the inertia of bodies is caused by distant bodies in the universe, deeper inquiry into the inherentness of inertia seems in order. An inertia caused by distant bodies can hardly be inherent or self-caused. It might be that Adler is mistaken, that the concept of inertia does not, after all, cast doubt on the third premise and the traditional proof from contingency.

It is true enough that classical, Newtonian inertia is inherent in an object. In fact, Newton frequently called it *vis insita*, the innate force. The modern view is not so clear. Leibniz, and then, most forcefully, Ernst Mach, insisted that motion is relative. As a consequence, Mach believed, inertial effects cannot be detected but for the existence of other bodies external to the body whose inertia is to be observed. Einstein attempted to incorporate Mach's ideas into his General Theory of Relativity. Taking Einstein as an authority, the modern physicist may not be so confident that inertia is inherent in an object.

Much as I would like to reconstitute the argument from contingency by seeing inertia as externally caused, I do not understand Mach to be denying the inherence of inertia. What Mach actually said on the subject is carefully, even cautiously, stated. I do not think he would describe distant objects as the *cause* of inertia. I think he would say they are the *measure* of inertia. In 1912 and at the end of his life, in response to his critics he said, for example, "I have remained ... the only one who insists upon referring the law of inertia to the earth, and in the case of motions of great spatial and temporal extent, to the fixed stars."[4] Notice he speaks of *the law of inertia* rather than of *inertia* itself. Notice too his lack of dogmatism about which reference frame is preferred, the earth or the stars. It seems to me his primary concern was always focused on the problem of how motion was to be detected and measured. He categorically rejected absolute space and time but was uncertain exactly what was the best replacement for them.

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Nevertheless, there are good reasons why people have understood Mach to be suggesting distant matter as a cause of inertia. Mach was a monist given to asserting the unity of the All, to arguing that everything affects everything else. Also, at several points in his discussions of Newtonian mechanics, Mach notes that we cannot be certain the inertia of a body is not affected by adjacent and/or distant matter. His remarks are plainly intended to tempt readers into wondering if such a causative interaction is possible. He is, however, always careful to avoid committing himself to the reality of an interaction. Mach was also known to think that it should some day be possible to explain both inertial motion and accelerated motion with the same concepts or same theory. If we think of accelerated motion as caused by external agents, then it seems that inertial motion would be externally caused also.

One usual way of quantifying inertia (inertial mass) is to have a component that is externally determined, the relativistic mass increment. If inertia is not certainly inherent, perhaps the continuing of existence is not inherent either.

Though Einstein's efforts at incorporating Mach's ideas into relativity theory are generally judged to have succeeded only partially, the interest the great man showed in them has kept them alive as subjects of discussion to the present day. Perhaps that is because Einstein anointed them with the title, "The Mach Principle."

In Special Relativity, the increase in inertial mass above the rest mass of an object depends on the speed of the object. Consequently, at least part of the mass of an object is relative. Therefore, at least one part of the inertia of a body is not completely inherent to the object. In General Relativity, inertia acts to continue motion on a geodesic of space/time. Far from massive bodies, that is still a straight line despite the actual measured value of the mass. But the straight line (and this is Mach's main point) is defined with reference to the distant masses. Thus, our ability to see that the motion is continued is relative to those distant masses.

These considerations suggest how difficult it can be to decide whether a quantity is inherent in an object. It is not at all obvious that inertia is inherent in a body. One usual way of quantifying inertia (inertial mass) is to have a component that is externally determined, the relativistic mass increment. If inertia is not certainly inherent, perhaps the continuing of existence is not inherent either. Thus, the plausibility of the traditional argument may be stronger than Adler allowed.

My own view of the matter is that talk of distant matter causing inertia is wide of the mark. If one considers two small, uncharged objects moving in opposite directions near each other, seeing both motions as caused by distant objects quickly leads to trouble. Neglecting the very weak gravitational interaction, we have only distant matter as a cause of their linear motion if, tempted by Mach, we assume inertia is not inherent. But then we are faced with a single cause that produces exactly opposite effects. What sort of cause produces opposite effects simultaneously? Now add a third and a fourth object in arbitrary directions. Add as many as you like. What sort of single cause can produce an enormous and unpredictable range of effects? Is it a cause in any recognized physical sense? It would seem much more parsimonious to retain the Newtonian idea of an inherent inertia, altered, of course, by the relativity of measurements, than to countenance this type of causality.

We must remember that Adler's prime support for supposing that the continuing existence of an object might not require the continuous action of an agent was based on the fact that the motion of an object continues without the continuous action of an agent. To be sure, inertia of motion is logically distinct from inertia of existence. However, when one suggests the existence of until now an unknown property, inertia of existence, the case for the new property is strengthened by the suggestion that it is not wholly unique but is similar to something already known and accepted. That was Adler's purpose in referencing inertia of motion. Also, if it appears that the new property is truly unique, the case for its existence is accordingly weakened. Thus, a review of ideas about inertia weakens Adler's objections to the traditional cosmological argument.

Critiques and Commentary from Cosmology

Astrophysics and cosmology also bear on Adler's argument. Adler believes that "to affirm ... that the world or cosmos had an absolute beginning—that it was exnihilated at an initial instant—would be tantamount to affirming the existence of God, the world's exnihilator."[5] Because he is attempting a secular proof for the existence of God, he feels constrained to posit an eternally existent cosmos. He carefully explains that this position is not inconsistent with the big bang theory of the cosmos.

Adler has obviously read with careful attention the literature of modern cosmology. From this effort he feels safe in concluding that "the big bang theory does not posit an absolute beginning of the cosmos—a coming into being out of nothing—but only an initial event in the development of the cosmos..."[6] That is, the present cosmos is not understood to have come into existence out of nothing. Something preexisted the present cosmos. The big bang theory does not necessarily entail exnihilation of the universe and only exnihilation of the universe implies an exnihilator.

However, Adler overlooked a most interesting development. In 1973, Edward Tryon made a suggestion[7] that seems obvious in retrospect. Noting that the gravitational energy of the universe is necessarily negative, Tryon speculated that the negative gravitational energy might be enough to cancel the positive energies of motion and mass. In short, he suggested the total energy of the universe be zero.

Defending the idea, Tryon did a very short calculation to show the plausibility of the idea and suggested such an event be a variation of the familiar vacuum fluctuations that are "...utterly commonplace."[8] Of course, the familiar vacuum fluctuations are very small scale, creating electrons, positrons, or photons for a very short period. Tryon noted that the duration of a fluctuation is limited by the Heisenberg uncertainty. Then he used that fact as an argument in favor of a universe of *zero* total energy! Tryon explicitly invoked the Anthropic Principle as a defense, saying that the fact that we are here to observe the universe implies there has been such a large scale fluctuation as he supposes.

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These defenses are feeble. The common vacuum fluctuations are not and have not been thought of as events with zero energy. In fact, their energy is large enough to limit the lifetime of the fluctuations to unobservably short durations. By this and by its enormous scale, the zero energy universe differs from a vacuum fluctuation. The zero energy universe shares no feature with vacuum fluctuations save its origin from a vacuum. In short, nothing but a desperate wish for nonuniqueness supports identifying the zero energy universe with a vacuum fluctuation.

Invoking the disputed Anthropic Principle is an even poorer defense. To show the absurdity of the principle, Richard Swinburne has told a fable about a man placed before a firing squad of 12 sharpshooters each of whom fires 12 shots. All 144 shots miss! The man laughs and remarks that it is no surprise they all missed since he is still around to be noticing it![9] Swinburne points out that the remark is fatuous; the 144 misses require further investigation. That we are here to think about it in no way explains the mystery of a zero energy universe.

Adler overlooked a most interesting development. In 1973, Edward Tryon made a suggestion[7] that...the total energy of the universe be zero.

Tryon's idea has received a great deal of attention. Efforts have been made to find a reasonable, physical mechanism for causing this peculiar type of vacuum fluctuation to occur. Versions of the inflationary big bang theory have adapted to a zero energy universe, though multiple universes may arise to complicate the situation. The important point is that a zero energy universe is now considered almost certainly correct.

The zero energy universe affects arguments for the existence of God. One hears arguments like this. If the universe has zero total energy, then, assuming conservation of energy, the universe came from and amounts to nothing. The universe was and continues to be exnihilated. But, since the universe is everything physical and material, it must have been caused to arise by something beyond or outside itself. The universe must have been exnihilated by an exnihilator, by God.

This line of argument is too hasty and runs to a conclusion quite unacceptable to most modern cosmologists who, not surprisingly, go to great lengths to avoid encouraging it. One way to avoid it is to claim that current physics fails near the singularity of the big bang. The point is that the material density and gravitational fields associated with the singularity are so far beyond those for which current physics has been tested that we cannot be sure that current physics applies to the singularity. Furthermore, current theories predict "nonphysical" properties like an infinite density for the singularity. Presumably, the singularity makes sense within another, naturalistic, framework and there is no need to think there might be something supernatural about the singularity and the origin of the universe.

Another possibility arises quite naturally out of the inflationary scenario into which the zero energy universe seems to fit. The universe we see, in this scheme, is not the entire universe; not everything there is. Only a part of everything there is had inflated into the bubble we think of as our universe. And it is only this bubble that has zero energy. As to the rest of everything that is, it is forever beyond reach because the expansion puts the other universes beyond the reach of light signals. This is a wildly speculative idea out on the very edge of what may be considered proper science. If Karl Popper is right that only falsifiable ideas belong to science, a forever unknowable and unobservable universe does not belong in science. The idea also means one must be very careful using the word *universe* because here it is plural and means less than "everything there is."

These responses are not notably satisfactory. The reason they are preferred by cosmologists is obvious. Bad as they are, they are preferable to believing God exists.

A final, major point of contact with cosmology appears in Adler's argument that the continued existence of the cosmos requires the continual action of a preserving agent. The first step in the argument is a conclusion drawn from cosmology; "...the cosmos which now exists is only one of many possible universes that might have existed in the infinite past, and that might still exist in the infinite future."[10] This picture is consistent with his decision to posit an eternal cosmos.

In Adler's argument...the continued existence of the cosmos requires the continual action of a preserving agent.

The next and crucial step is to say that "whatever might have been otherwise in shape or structure is something that also might not exist at all."[11] But "whatever can be otherwise than it is can simply not be at all."[12] Thus, we are led to the primary conclusion of Adler's effort. If the cosmos at every moment has the potential to not be (that is, to annihilate), then at every moment it must be caused to exist. The cause of this continual exnihilation is God, the continual exnihilator, whose existence as an initial exnihilator Adler took such care to avoid positing. Adler then immediately notes that there is no longer any need to avoid believing in an initial exnihilator.

The primary conclusion of Adler's effort [is that] if the cosmos at every moment has the potential to not be (that is, to annihilate), then at every moment it must be caused to exist.

Modern cosmology must be judged to be supportive of Adler's argument to the extent it seriously countenances the possibility of many types of universe. Ironically, the significant degree of enthusiasm in current cosmology for other worlds arises from exactly the opposite intent. Most of the advocates of the existence (or possible existence) of other worlds—other parts of the universe—are very clearly motivated to deny the uniqueness of this part of the universe. They want to avoid explaining that uniqueness and readily perceive that the possibility of other worlds conveniently obscures that uniqueness.

There are many serious versions of many worlds theories. An early one, the Everett many worlds theory, was derived not from cosmology but from an effort to understand quantum theory. A more recent one is J. Richard Gott's inflationary model of our universe as one of many inflated bubbles. Whether any of these is true is not particularly important. What is important is that the variety and present health of these ideas makes plain there is no reason now to suppose the whole universe is *necessarily* what it is. The consensus of cosmologists is that the universe out there has the contingency Adler needs for his argument.

A notable dissenter from the consensus is Stephen Hawking. Much of his recent work has focused on the possibility of a universe without boundaries. His well-known popular book, *A Brief History of Time*, describes this idea and, more importantly, gives us a better sense of his underlying metaphysical opinions than do his more formal writings. The theory grows out of attempts to combine quantum theory with general relativity and is partially motivated by the general desire for simplicity. An unbounded universe is simpler because no boundary conditions are required to explain it. Boundary conditions and the basic physical laws are the main unspecified features of most cosmological theories.

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At first, Hawking is careful to note that the theory is only a proposal that "...cannot be deduced from some other principle. Like any other scientific theory, it may initially be put forward for aesthetic or metaphysical reasons, but the real test is whether it makes predictions that agree with observation."[13] Hawking showed that simplified versions of this idea predict the observed uniformity of the background radiation and an inflationary stage of expansion with enough non-uniformity left over to explain the present degree of structure in the universe.

The significance of the theory for our purposes is that Hawking does not stop there. He goes on to say, "So long as the universe had a beginning, we could suppose it had a creator. But if the universe is really completely self-contained, having no boundary or edge, it would have neither beginning nor end: it would simply be. What place, then, for a creator?"[14]

The force of his question comes from the fact that the universe he envisions is completely determined, it must be as it is. It cannot be otherwise than it is. No gap remains into which God can be fitted. Hence, Hawking's idea attacks both arguments for the existence of God: from the origin and from the contingency of the universe.

We must remember that his original characterization is correct. The theory is just a proposal. It is not the only theory that fits the observations. There is a hint of circularity in his choice here since, like Hoyle before him, he is clearly more comfortable with a universe without beginning or end. His reason is the same as Hoyle's: no beginning, no God.

An important feature of this theory that is easily overlooked is that time, for technical reasons, is treated as a space dimension. That is, real time is not used but is replaced by imaginary time (time multiplied by the square root of -1). Therefore, the lack of a beginning and end occurs in imaginary time. Conversion to real time reintroduces the singularities that imply a beginning and an end. Hawking then suggests "the so-called imaginary time is really the real time."[15] He supports this thought with the remark "...it is meaningless to ask: Which is real, `real' or `imaginary' time? It is simply a matter of which is the more useful description."[16] The usefulness of a description surely is determined by the use one has in mind. If one wants to describe a universe containing no room for God, Hawking's theory may be useful. Hawking has made his choice but no scientific criteria demand we follow him.

Hawking's views are presently not representative of the main stream of cosmological thinking. They do serve to show that there is always the potential for the scientific consensus to swing away from what may have become a comfortable accord with prevailing philosophical or theological ideas.

Critiques and Commentary from Philosophy

Of course, philosophical ideas also impinge on the validity and utility of Adler's argument. J.L. Mackie, an atheist, has examined cosmological arguments generally in the fifth chapter of his book, *The Miracle of Theism* (the name indicates his surprise that theism is still believed by anyone).[17] His critique consists of denials. He denies the certainty of the assertions that: (1) "nothing comes from nothing," (2) a necessary being exists, (3) past time must have been finite, and (4) nothing occurs without a sufficient reason. As one might expect, these denials enable him to survey the remnants of variations of the cosmological argument like the proverbial bull might be imagined surveying the wreckage of the china shop.

Adler assumes an infinite past for the universe, so his form of the cosmological argument is impervious to Mackie's third denial. Denying that "nothing comes from nothing" threatens the idea that the "somethingness" of the universe requires a source in something other than itself. The first denial is thus a form of the fourth, which I will consider shortly. Also, since Adler's argument supports but does not assume the existence of a necessary being, only the denial of sufficient reason has a potential for damaging Adler's argument.

Mackie denies the principle of sufficient reason on two grounds. First, the principle of sufficient reason is empirically derived. We expect to find sufficient reason for any occurrence because we previously could do so for other occurrences. His thinking here is like Hume's idea that the sun need not rise tomorrow; we just expect it to because it always has before. What Mackie does not say, though it is implicit in the very nature of his counter argument, is that the expectation of sufficient reason is very probably correct. After all, if our experience prejudices us to expect everything to happen as it does for sufficient reasons, it must be true that things usually do occur for sufficient reason. Since Adler is constructing a plausible or probable argument rather than a deductive one, it might not be damaged by this denial.

However, it is just at the point where Adler most needs sufficient reason that Mackie is most determined to deny it. His second ground for denying the principle of sufficient reason is that what is true of parts of the universe need not be true of the universe as a whole. "Even if, within the world, everything seemed to have a sufficient reason ... this would give us little ground for expecting the world as a whole, or its basic causal laws themselves, to have a sufficient reason of some different sort."[18] That is, Mackie is also saying the existence of the universe is of a different sort from the existence of things in the universe. Therefore, our experience of things in the universe provides no information about the universe in its entirety. Even if things generally have a sufficient reason for being, we have no right to use that information when we think about the whole universe. Mackie quickly goes on to deny that he is rejecting intelligibility of the world. He had, of course, asserted a restriction to that intelligibility, a point I will return to later.

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While Mackie's concern is only with the sufficient reason of coming into existence of the universe his remarks also apply to the sufficient reason of the continuing in existence of the universe. Presuming to read the mind of the late J.L. Mackie, I think he would agree with Adler that the continuing in existence of the universe is radically different from the continuing in existence of a part of the universe. This radical difference actually strengthens Mackie's case for denying that the principle of sufficient reason is applicable to the continuing in existence of the whole universe. That is, Mackie's point is that the existence of the whole universe may be very different from that of any part of the universe. Adler's argument for a radically contingent universe affirms this point.

Adler denies any form of the principle of sufficient reason that would amount to assuming God does not exist.

What can be said in response to Mackie? Adler denies any form of the principle of sufficient reason that would amount to assuming God does not exist. Since the simple statement of the principle (used by Mackie and others) "everything that exists is caused to exist" runs into the problem that "God's existence, if God exists, is uncaused,"[19] Adler restates the principle: "Everything that exists or happens has a reason for its existing or happening either (a) in itself or (b) in something else."[20] In distinction from all other entities, the sufficient cause of God's existence resides in God alone.

If, for the sake of argument, we expand Mackie's denial to include Adler's form of the principle of sufficient reason, what impact does that have on Adler's conclusions? Since Adler is framing a plausibility argument, which is more plausible: Adler's affirmation or Mackie's denial?

I have problems with Mackie's mode of argument in this area. For example, he rejects the form of the cosmological argument that posits God as the *terminus* of a sequence of causes by raising the possibility that other (unspecified) things might be the *terminus*. Otherwise, he believes we must "simply accept this [that God is the *terminus*] as sheer mystery (which would be to abandon rational theology and take refuge in faith)."[21] But, by denying the universe exists (or continues in existence) by sufficient reason, Mackie himself takes a large step in the direction of "sheer mystery." Denying that the principle of sufficient reason applies to the universe views the universe as a great, and apparently, permanently impenetrable mystery. Is "sheer mystery" acceptable in an atheistic position and not in a theistic one?

Perhaps I am being too hard on him. He clearly denies that *we know* the principle applies to the universe and I think it fair to read him as denying that the principle applies in actuality. For example, at the end of his consideration of the use of the principle in the cosmological argument, he says this sort of argument "fails completely as a demonstrative proof."[22] If he only meant to deny that we know the principle can be applied, it would be more appropriate to say that the argument is incomplete and, if it is to be used, must be supplemented with reasons showing how we can know the principle is relevant. Saying the argument fails "completely" implies considerable confidence in the counterarguments.

I may, of course, be wrong. Perhaps Mackie only intended to deny that *we know* the principle applies to the universe. Then, the state of our knowledge becomes relevant. From the earlier discussion of big bang theories we can see that modern cosmologists have doubts about either form of Mackie's denial; some of them, at any rate, assume the origin of the universe was caused and that we can think about that cause. They even hold out hope that an improved physics will provide a naturalistic explanation of the singularity. Their efforts also imply that we even now have evidence (but certainly not proof) that can be interpreted to mean that the universe exists by sufficient cause. In turn, evidence that the universe had sufficient reason for coming into existence implies it is likely that the continuing in existence of the universe is by sufficient cause.

Mackie denies that his rejection of sufficient reason undermines the scientific enterprise.

Mackie denies that his rejection of sufficient reason undermines the scientific enterprise, saying,

> The sort of intelligibility that is achieved by successful and causal inquiry and scientific explanation is not undermined by its inability to make things intelligible through and through. Any particular explanation starts with premises which state `brute facts,' and although the brutally factual starting-points of one explanation may themselves be further explained by another, the latter in turn will have to start with something that it does not explain, *and so on however far we go*.[23]

I accept this picture of the fabric of explanations, scientific or philosophical, but note that a primary assumption is that unexplained features of an explanation can be investigated at another level. Mackie is positing a level at which explanation must terminate with something still unexplained. What he seems to be saying is that the suggested failure of sufficient reason is not unusual. Indeed, he is trying to persuade us that it would fit a familiar pattern. The irony is that he is simultaneously denying the already familiar pattern in which things happen for sufficient reason.

Adler concludes by affirming that the universe was created for sufficient reason.

Furthermore, Mackie does not appear to appreciate just how necessary motivation is in science. The history of science generally and the history of cosmology in particular can be read as one long lesson in how deeply held beliefs, presuppositions, and prejudices have been a major force behind scientific discovery and invention. Think of Kepler's belief in God, The Supreme Mathematician, and how that belief sustained his thirty years of work toward the three laws. More recent examples of the same thing are Einstein's invention of the cosmological constant to satisfy his prejudice for a static universe and Hoyle's work on steady state theories because big bang theories were too Christian. Now, if one believes the universe came into existence for no reason, what motivation is there to investigate the origin of the universe? Mackie's denial does not undermine the entire scientific enterprise but it surely does undermine cosmogony.

We see that the costs of denying the principle of sufficient reason as it applies to the origin of the universe are significant. The overall consistency of Mackie's position has been jeopardized by it and motivation for scientific effort in cosmogony is undermined.

Granting the *possibility* that the universe came into existence for no reason or without cause, there is yet no reason to grant this idea higher status. While there is no calculus by which we can determine the plausibility level of an idea, all we know of the universe, of science, and even of Mackie's argumentation point to the conclusion that the idea is unlikely. The scientific mind rightly resists it. It seems fair to demand that the burden of proof lie with those who would deny the applicability of sufficient reason to the universe as a whole.

Since Adler concludes by affirming that the universe was created for sufficient reason, I should also briefly comment on an argument by the noted philosopher of science, Adolph Grunbaum.[24] Like Mackie, Grunbaum raises the question of how concepts of ordinary causality can be applied to creation out of nothing. He also denies that ordinary causation can apply to the origin of the universe because causes precede their effects in time. But before the universe existed, there was no time. Therefore, it is incoherent to speak of a cause of the origin of the universe since there was no time in which such a cause could have existed. With no cause of the origin of the universe, no argument can be made from the cause to a creator. Grunbaum apparently does not continue this line of thought to its full conclusion that scientific investigation of the origin of the universe is, therefore, an incoherent enterprise.

Now, causes may precede their effects incidentally but what is critical is that they must *coexist* with their effects. A cause *never* produces an effect except on a body that exists in a place and time where the cause too exists. If I hold a stone in my outstretched hand, it

will fall when I release it only if gravity is available to act on it from the time it is released. Surely the stone would behave in the same manner had a gravity field not existed in that region of space prior to its release but had sprung into existence exactly at the time of release. Grunbaum's argument has no force against *coexistent* causes.

The idea of coexistence of a cause and its effect is likely to seem strange because it is axiomatic that *a cause precedes its effects*. A little reflection should show that the axiom as stated goes beyond the known facts. A more reasonable statement in better accord with the facts is that *a cause never follows its effects*. In this latter form, the axiom does not conflict with the coexistence of a cause and its effects, while the former form obviously denies such a possibility. Thus, a better statement of the axiom takes away the starting point of Grunbaum's argument, leaving it unsupported.

If time began with the beginning of the universe, then it is incoherent to speak of anything existing before the universe existed. Thus, it is incoherent to speak of God "preexisting" the universe.

A response to this change of the axiom might be that a cause coexistent with the beginning of the universe is still a cause that cannot "preexist" the universe. If time began with the beginning of the universe, then it is incoherent to speak of anything existing before the universe existed. Thus, it is incoherent to speak of God "preexisting" the universe.

It may be incoherent to speak of God existing before the universe came into existence. But that may just be a trick of our limitations as creatures enmeshed in time. Even aside from questions of origins, the existence of God outside time has always been subject to this complaint of incoherence (a problem worth worrying about once we are sure of what time is). However, an idea may be incoherent or unintelligible and still true. For example, it is commonly recognized that a materialistic explanation of thought is self-defeating. If ideas are only neural epiphenomena, then the idea that ideas are only neural epiphenomena is itself only an epiphenomenon with no legitimate claim to being true. A truth claim for the idea is incoherent. Nonetheless, *it might be tru*e! "Incoherent" is not equivalent to "false."

Conclusions

Philosophically, we have found it can be doubted that the principle of sufficient reason applies to unique events such as those contemplated in cosmological arguments for the existence of God. Nevertheless, I have urged that it be not unreasonable to use it in such situations. If that is so, Adler's argument remains a plausible argument as he claimed. Recent developments in cosmology appear to converge with and support Adler's argument. Trends in cosmology surely strengthen the plausibility one might claim for the

argument. There is, of course, no way to *quantify* the impact of these developments on the plausibility of Adler's argument. A warranted, *qualitative* judgment is that the argument is no worse for the wear and may, indeed, now be judged somewhat more probable than it was originally.

Notes

[1]How to Think About God, Mortimer J. Adler, New York, Macmillan Publishing Co., Inc., 1980.

[2]Ibid., p. 38.

[3]Ibid., pp. 116-119.

[4]*The Science of Mechanics,* Ernst Mach (trans. Thomas J.McCormack), 6th ed., LaSalle, IL, The Open Court Publishing Co., 1989, pp. 336-337.

[5]Ibid., p. 38.

[6]Ibid., p. 33.

[7]*Is the Universe a Vacuum Fluctuation?,* Edward P. Tryon*, Nature*, Vol. 246, No. 5433, Dec. 14, 1973, pp. 396-397.

[8]Ibid., p. 397.

[9]Argument from the Fine-Tuning of the Universe, Richard Swinburne*, Physical Cosmology and Philosophy*, ed. John Leslie, Macmillan Publishing, New York, 1990, p. 165.

[10]Adler, p. 143.

[11]Ibid., p. 144.

[12]Ibid., p. 144.

[13]A Brief History of Time, Stephen W. Hawking, Bantam Books, 1988, pp. 136-137.

[14]Ibid., pp. 140-141.

[15]Ibid., p. 139.

[16]Ibid., p. 139.

[17]The Miracle of Theism, J.L. Mackie, Clarendon Press, Oxford, 1982.

[18]Ibid., p. 85.

[19]Adler, p. 104.

[20]Ibid., p. 103.

[21]Mackie. p. 92.

[22]Ibid., p. 87.

[23]Ibid., pp. 85-86.

[24]*The Pseudo-Problem of Creation in Physical Cosmology,* Adolf Grunbaum*, Philosophy of Science*, Vol. 56, No. 3, Sept. 1989, pp. 373-394.