

Must the Beginning of the Universe Have a Personal Cause?: A Rejoinder

Dr. William Lane Craig

William Lane Craig is Research Professor of Philosophy at Talbot School of Theology in La Mirada, California. He lives in Atlanta, Georgia, with his wife Jan and their two teenage children Charity and John. At the age of sixteen as a junior in high school, he first heard the message of the Christian gospel and yielded his life to Christ. Dr. Craig pursued his undergraduate studies at Wheaton College (B.A. 1971) and graduate studies at Trinity Evangelical Divinity School (M.A. 1974; M.A. 1975), the University of Birmingham (England) (Ph.D. 1977), and the University of Munich (Germany) (D.Theol. 1984). From 1980-86 he taught Philosophy of Religion at Trinity, during which time he and Jan started their family. In 1987 they moved to Brussels, Belgium, where Dr. Craig pursued research at the University of Louvain until 1994.

Wes Morriston maintains that a negative answer to the question, "Did the First Cause exist in time prior to creation?" forces the defender of the kalam cosmological argument to analyze the concept of 'beginning to exist' in a way that raises serious doubts about the argument's main causal principle and that it also undercuts the main argument for saying that the cause of the universe must be a person.

Morriston in the first part of his critique tries to show that premiss (1) Whatever begins to exist has a cause loses much of its plausibility when it is applied to the beginning of time itself. At the heart of Morriston's denial that we have a metaphysical intuition of the principle's truth lies a dubious distinction between intra- and extratemporal beginnings. Apart from that same distinction Morriston provides no good reason to doubt the plausibility of the causal principle as an empirical generalization. His claim that the absence of a material cause of the universe is as troubling as the absence of an efficient cause backfires because in an uncaused origination of the universe we lack both. Finally, Morriston errs in thinking that a reductive analysis, if adequate, should preserve the same epistemic obviousness involved in the analysandum and in thinking that all intuitively grasped, metaphysically necessary, synthetic truths should exhibit the same self-evidence and perspicuity.

In the second part of his article Morriston, still assuming that God exists atemporally sans the universe, criticizes an argument for the personhood of the First Cause inspired by the Islamic Principle of Determination. Morriston objects that appeal to agent causation is nugatory because God's changeless state of willing the universe is sufficient for the existence of the universe and is an instance of state-state causation. The failing of Morriston's objection is that in speaking of God's willing that the universe exist, he does not differentiate between God's timeless intention to create a temporal world and God's undertaking to create a temporal world. Once we make the distinction, we see that creation ex nihilo is not (given a tensed theory of time) an instance of state-state causation and is therefore not susceptible to Morriston's objection.

In his interesting article "Must the Beginning of the Universe Have a Personal Cause?" Wes Morriston explores several "little discussed aspects" of the ancient *kalam* cosmological argument. {1} The argument may be simply formulated:

1. Everything that begins to exist has a cause of its existence.
2. The universe began to exist.
3. Therefore, the universe has a cause of its existence.

Morriston grants that the philosophical arguments for premiss (2) are sound in order to focus our attention on the problems that arise when we ask, "Did the First Cause exist in time prior to creation?" {2} Since that question must concern anyone who holds to the Judaeo-Christian doctrine of *creatio ex nihilo*, Morriston's critique will be of interest not only to the proponent of the *kalam* cosmological argument but to any orthodox theologian.

I have argued that it is a matter of indifference so far as the argument's cogency is concerned whether the First Cause of the universe is conceived to be temporal or atemporal sans creation. But Morriston claims that such a contention is mistaken. He maintains that a negative answer to the question "Did the First Cause exist in time prior to creation?"—that is to say, to maintain that God exists atemporally sans the universe—is not compatible with all the requirements of the *kalam* cosmological argument; specifically, a negative answer "forces the defender of the *kalam* argument to analyze the concept of 'beginning to exist' in a way that raises serious doubts about its main causal principle, and . . . it also undercuts the main argument for saying that the cause of the universe must be a person." {3} The problem espied by Morriston, then, is not that a negative answer to his question is logically incompatible with the argument's premisses or entailments but that such an answer tends to undercut the warrant for accepting those premisses; in short, the argument becomes in a sense self-defeating (even if sound).

Must the Universe Have a Cause?

Assuming, then, that the First Cause did not exist temporally prior to the beginning of the universe and that, accordingly, time itself was created along with the universe, Morriston in the first part of his critique will "try to show that premiss (1) loses much of its plausibility when it is applied to the beginning of time itself." {4} Now it needs to be said that, *pace* Morriston, this is not a conclusion which automatically spells defeat for the *kalam* cosmological argument. For in order to qualify as a successful piece of natural theology an argument need not consist of premisses which are undeniably true, or clearly true, or even plausibly true, but of premisses which are merely more plausibly true than their contradictories. If, as I believe, the premiss *Everything that begins to exist has a cause* is plausible *in excelsis* for temporally embedded things, then even if Morriston is right that its plausibility is significantly diminished when it comes to time itself, that does not in any way show that premiss (1) is implausible, much less no more plausible than its contradictory. Thus, the argument is not even ostensibly defeated by Morriston's conclusion.

But however that may be, we shall, of course, also want to ask whether Morriston is successful in establishing his conclusion. Why think that premiss (1) loses much of its plausibility when applied to the beginning of time? Morriston acknowledges that "it does seem pretty absurd" to imagine something's popping into existence without a cause: "It may not be *logically* impossible, but it is inconsistent with everything I know of the world in which I live!" {5} So why deny this intuition when it comes to the origin of time and the universe? Morriston's basic answer is that even if we have such an intuition with respect to

temporally embedded entities, we do not have a similar intuition with regard to the beginning of time itself.

Now as a simple sociological claim, Morrision's assertion is demonstrably false. For the absolute beginning of time predicted by the Standard Friedman–Lemaître Big Bang model was the crucial factor in provoking not only the formulation of the Steady State model of continuous creation, but a whole series of subsequent models all aimed at avoiding the origin *ex nihilo* of our universe. Misner, Thorne, and Wheeler declare that “No problem of cosmology digs more deeply into the foundations of physics than the question of what ‘preceded’ the ‘initial state’ of infinite (or near infinite) density, pressure, and temperature.”{6} For example, inflationary theorist Andrei Linde finds motivation for his past–eternal Chaotic Inflationary Model precisely in this feature of the Standard Model: “The most difficult aspect of this problem is not the existence of the singularity itself, but the question of what was *before* the singularity. . . . This problem lies somewhere at the boundary between physics and metaphysics.”{7} Linde’s extrapolation of his model to the infinite past was rooted, not in any empirical inadequacy of the Standard Model, but in the conviction that the absolute beginning predicted by that model was not acceptable as an explanatory stopping point. Although Borde and Vilenkin demonstrated that Linde’s inflationary model was geodesically incomplete in the past and therefore itself involved an initial cosmological singularity, they did not conclude that the question of the origin of the universe was therefore a pseudo–problem; rather they wrote, “The fact that inflationary spacetimes are past incomplete forces one to address the question of what, if anything, came before.”{8} The fact is that a whole series of cosmological models have been proposed over the last half–century specifically to avoid the absolute beginning predicted by the Standard Model. Both philosophers and physicists have been deeply disturbed at the prospect of a beginning of time and an absolute origination of the universe and so have felt constrained to posit the existence of causally prior entities like quantum vacuum states, inflationary domains, imaginary time regimes, and even timelike causal loops. The history of twentieth century astrophysical cosmology belies Morrision's claim that people have no strong intuitions about the need of a causal explanation of the origin of time and the universe.

Perhaps Morrision would say that we *should*, at least, have no strong intuitions concerning the need of a cause of the beginning of time. But why not? What is the relevant difference between something's coming into existence within time and something's coming into existence at the beginning to time? If the universe could not come into existence uncaused at t , where t is preceded by earlier moments of time, why think that if we were to annihilate all moments earlier than t , then the universe could come into existence uncaused at t ? How could the existence of moments earlier than an uncaused event be of any possible relevance to the occurrence of that event?

Indeed, given a dynamic or tensed view of time, every moment of time is a fresh beginning, qualitatively indistinguishable from a first moment of time, for when any moment is present, earlier moments have passed away and do not exist. Thus, if the universe could exist uncaused at a first moment of time, it could exist uncaused at any moment of time. There just does not seem to be any relevant difference. It follows that if the latter is metaphysically impossible, so is the former.

Perhaps Morrision's difficulty is that he thinks of the causal principle as akin to a law of nature, like Boyle's Law or the Second Law of Thermodynamics, which hold only within our universe. But the causal principle is not a physical principle, but a metaphysical principle. Being does not arise from non–being; something cannot come from nothing. These are putative metaphysical claims, unrestricted in their application. Such claims are not contingent upon the properties, causal powers, and dispositions of the natural kinds of substances which happen to exist. Morrision has given no good reason for construing such claims as merely physical rather than as metaphysical claims.

Hence, until Morrision is able to show us the relevant difference between embedded moments of time and a first moment of time, I see no reason to think it more plausible that things can come into being uncaused at a first moment than at a later moment of time.

Morrision presents a second reason for thinking premiss (1) to have diminished plausibility with respect to time's origin: "*creation out of nothing* is at least as counterintuitive as is *beginning to exist without a*

cause." {9} Now there is no doubt that *creatio ex nihilo* is deeply baffling. I well recall thinking, as I began to study the *kalam* cosmological argument, that all of the alternatives with respect to the universe's existence—the infinitude of the past, creation *ex nihilo*, spontaneous origination *ex nihilo*—were so bizarre that the most reasonable option seemed to be that nothing exists! Since our existence is, however, undeniable, we must settle, however uncomfortably, on one of the above three. Since we assume for the sake of argument in the present discussion the finitude of the past, our choices are creation *ex nihilo* or an uncaused origination *ex nihilo*. It seems to me that there is a very simple and yet decisive reason for preferring creation, namely, whereas creation *ex nihilo* is counter-intuitive in denying to the universe a material cause, it at least ascribes to it an efficient cause, whereas the spontaneous origination of the universe *ex nihilo* is doubly counter-intuitive in that it denies of the universe both a material and (especially) an efficient cause. Thus, even if one agrees with Morrision's observation, "When I do the relevant 'thought experiments,' I find the absence of a *material* cause at least as troubling as the absence of an *efficient* cause," {10} one cannot agree with his objection, since an uncaused origin of the universe lacks both sorts of cause and so is doubly implausible.

Morrision also complains that my reductive analysis of "x begins to exist" is so elaborate that premiss (1), so understood, "is not obviously supported by any widely shared metaphysical intuition." {11} But this complaint is inappropriately lodged. I could have simply taken "begins to exist" as an undefined primitive in an intuitively true premiss. The worth of a reductive analysis of a concept is not to be judged by whether the original principle retains its intuitive sheen when the *analysans* is substituted for the *analysandum*, but rather by whether the analysis succeeds in capturing our pre-analytic understanding of the concept. {12} The unanalyzed notion is what we intuitively grasp, and we may struggle to find an adequate analysis of it. The analysis may turn out to be quite complicated, requiring various sorts of qualifications to ward off counter-examples. It is thus far less apt to be as intuitively obvious as the original concept. But its value is not to be measured by its intuitive obviousness, but by its adequacy to the concept and its imperviousness to counter-examples. Thus, for example, the notion "begins to exist" cannot be adequately analyzed by stating

A1. x begins to exist $\equiv x$ exists at t , and there is a time prior to t at which x does not exist.

For if time and the universe originated at the Big Bang, it would follow from (A1) that the universe did not begin to exist, which is counter-intuitive, given the past finitude of its existence. So we might try to adjust (A1) to

A2. x begins to exist $\equiv x$ exists at t , and there is no time prior to t at which x exists.

This might seem to do the trick, for there may or may not be time prior to t , according to (A2). Thus, the definition would apply to things originating both within time and with time. But then someone says, "What about something that ceases to exist for a time and then comes to exist a second time? Doesn't it begin to exist a second time?" That seems right; so we adjust (A2) to

A3. x begins to exist $\equiv x$ exists at t , and there is no time immediately prior to t at which x exists.

(A3) allows that x may have existed earlier than t but insists that in order to begin to exist at t there must be at least a temporal gap between any prior existence of x and x 's existing at t . We now realize, however, that the adequacy of (A3) requires that t does not range over instants of time, since instants have no immediate predecessors. So in order to preserve our temporal gap we must take t to range over non-degenerate, finite intervals of time. If this were not complicated enough, we now ask, "What about God? If He is timeless sans creation but temporal since creation, then (A3) requires that God began to exist." Again, our intuitive understanding of "begins to exist" is violated if we must say that a being which never fails to exist begins to exist. In order to capture our intuitive understanding we need to preclude such a scenario. Thus, I arrived at

A4. x begins to exist $\equiv x$ exists at t ; there is no time immediately prior to t at which x exists; and the actual world contains no state of affairs involving x 's timeless existence.

The adequacy of (A4) as a reductive analysis is not to be judged by whether premiss (1) remains as intuitively obvious if we substitute the *analysans* for the *analysandum*, but by whether there are counter-examples of situations which intuitively do (or do not) involve something's beginning to exist but which are such that (A4) would force us to say that they are not (or are) cases of something's beginning to exist.

Although Morrision does not attempt to show any deficiency in the analysis offered in (A4), I have come to believe on the basis of my work in trying to differentiate creation from conservation that (A4) does not, in fact, adequately capture our intuitive understanding of "begins to exist." {13} It seems to me that at the heart of this notion lies the idea of "coming into being." The gist of premiss (1) is that something cannot come into being without a cause. Now again we could leave this notion as an undefined but well-understood primitive. But I think that we can capture this idea via the following analysis:

A5. x comes into being at $t \equiv x$ exists at t ; t is either the first time at which x exists or is separated from any time $t^* < t$ at which x existed by a non-degenerate, temporal interval; and x 's existing at t is a tensed fact.

The crucial modification here comes with the third clause: x does not merely exist tenselessly at t as part of a static, four-dimensional, "block" universe. Rather x 's existing at t is an event of temporal becoming: x comes into being at t . It is in virtue of the reality of temporal becoming that x 's beginning to exist requires a cause of x . Locutions like x 's "popping into existence" or "springing into existence" were attempts on my part to express in ordinary language the objective reality of temporal becoming. Again, it just seems to me obvious that things do not begin to exist in this sense without a cause.

Morrision, however, contends that we do not know the causal principle in any of its forms to be true by means of an *a priori* metaphysical intuition. {14} Again, this is a conclusion which need little disturb nor long distract the proponent of the *kalam* cosmological argument. As I explained in my exchange with Quentin Smith, it is a matter of indifference whether our intuition of the truth of the causal principle is *a priori* or *a posteriori*. {15} That some synthetic truths are intuited to be metaphysically necessary *a posteriori* is evident from such examples as "Gold has atomic number 79" and "This table could not have been made of ice." It could well be that only logically posterior to our experience of reality do we intuitively grasp the necessary truth of the causal principle.

Even considered on its own merits, however, Morrision's argument is unconvincing because it is predicated upon a flawed methodology. He compares the causal principle to a truth like "The surface of an object cannot be both red all over and partly green at one and the same time" and finds that the causal principle lacks the self-evidence and perspicuity of this truth. We could argue about how successfully the causal principle measures up to these criteria, {16} but I suspect that such a debate would be fruitless. The more important shortcoming of Morrision's argument is its methodological assumption that all intuitively grasped, metaphysically necessary truths are alike in their self-evidence and perspicuity. As we have seen, some metaphysically necessary truths may be grasped only *a posteriori* and be quite debatable. Others may be grasped *a priori* but have varying degrees of self-evidence and perspicuity. For example, the truth "No event precedes itself" is, I think, a synthetic, metaphysically necessary truth which we intuitively grasp, but it does not have the self-evidence or perspicuity of Morrision's red and green example. We can imagine a circular time in which an event precedes (and succeeds) itself, but I see no reason to think that such a representation is metaphysically possible. Or again, the statement "Torturing a child for fun is wrong" seems to me to be a metaphysically necessary truth which I intuit, despite my ability to imagine in my mind's eye a nihilistic world without value. Examples could be given of a whole range of synthetic, metaphysically necessary truths, from the wholly obscure to the overwhelmingly self-evident, and it is no indictment of the causal principle that it does not match the epistemic luminosity of the statement that something cannot be both red and green all over. What Morrision needs to do to undercut the causal premiss of the *kalam* cosmological argument is to show that its contradictory is as intuitively obvious as it is, which he has not even tried to do.

Morrison thinks that anyone who claims that we have a metaphysical intuition of the truth of the causal principle is obliged to explain why other equally well-informed and intelligent people do not share this intuition. {17} This is an odd assertion, since a philosopher seems hardly obliged to give an account of the sociological and psychological factors which lead other philosophers to disagree with him. Perhaps Morrison's point is best interpreted as inductive evidence against the claim that the causal principle is intuitively true. But so construed, the shoe is on the other foot: it is Morrison who is obliged to explain why he and a handful of other philosophers fail to see what the majority of philosophers and the overwhelming majority of mankind do see. The philosophers who deny that everything that begins to exist has a cause are a tiny minority of a tiny minority of mankind. Go ahead: name all the philosophers who believe that something can come into being without a cause or who are even agnostic about the matter. But be careful! Do not include Hume or Mackie. {18} Do not include quantum physicists. {19} The final list will be short, indeed. Morrison protests that he is not denying the truth of the causal principle, but merely that we have an *a priori* intuition of it. {20} But, as I say, it is a matter of indifference to me whether we come to grasp this principle *a priori* or *a posteriori*. I think it unlikely that the principle is for most of us an empirical generalization, for we instinctively apply it in unfamiliar situations, and the idea that something could come out of nothing is more than empirically repugnant. Since Morrison goes on to deny that we do know this principle empirically, he is unlikely to say that the conviction of mankind is based, not on intuition, but on empirical evidence. So it seems to me that the sociological evidence is quite consistent with the claim that the causal principle is intuitively obvious, and if there is any explaining to be done, it falls to Morrison to explain why his little band of skeptics fail to see what the vast majority of people, both philosophers and non-philosophers, do claim to see and to explain how the bulk of mankind, in his view, can be so deceived.

Finally, Morrison disputes our warrant for accepting the causal principle even as an empirical generalization. {21} This I find amazing; how can anyone deny in light of our empirical experience that the causal principle is more plausible than its contradictory? Here Morrison falls back on his distinction between temporally embedded events and events occurring at a first moment of time. Since we have experience only of temporally embedded origination events, Morrison questions whether we have evidence that origination events at a first moment of time require causal explanation. As we have already seen, however, this appears to be a distinction without a difference. Morrison misleads when he labels the one case *intratemporal* coming to be and the other *extratemporal* coming to be, for both are cases of events which are temporally located at some time t . The only difference is that in one case t was preceded by moments of time $t^* < t$ and in the other case it was not. How this could be relevant to the occurrence of an uncaused event at t is wholly mysterious.

Morrison also opposes two other empirical generalizations to the causal principle which he thinks enjoy comparable support but are allegedly incompatible with the *kalam* argument, to wit (i) *Everything that begins to exist has a material cause*, and (ii) *Causes always stand in temporal relations to their effects*. {22} Notice, however, that neither of these principles is incompatible with the causal principle enunciated in premiss (1). Morrison, in truth, offers no defeater at all for the argument's causal premiss, taken as an empirical generalization.

As defeaters of the conclusion (3) of the *kalam* argument, moreover, (i) and (ii) are not compelling. The evidence for (i) is, indeed, impressive. But it is not unequivocal or universal. {23} More importantly, (i) is in my view simply overridden by the arguments for the finitude of the past. For if it is impossible that there be an infinite regress of past events, it is impossible that the First Cause be a material object, since matter/energy is never quiescent. {24} As for (ii), the problem here is that (ii) appears to be an accidental generalization, akin to *Human beings have always lived on the Earth*, which was true until 1968. There does not seem to be anything inherently temporal about a causal relationship. More importantly, however, (ii) is not at all incompatible with the *kalam* argument's conclusion, since its defender may hold that God exists timelessly sans creation and temporally at and subsequent to the moment of creation, so that His act of causing the beginning of the universe is simultaneous with the universe's beginning to exist.

In summary, Morrison's claim that premiss (1) of the *kalam* cosmological argument loses much of its plausibility when applied to the beginning of time is unwarranted. Apart from his question based on the

distinction between intra- and extratemporal beginnings, Morrision provides no reason to doubt the plausibility of the causal principle as an empirical generalization. That same dubious distinction lay at the heart of his denial that we have a metaphysical intuition of the principle's truth. His claim that the absence of a material cause is as troubling as the absence of an efficient cause backfires because in an uncaused origination of the universe we lack both, whereas in *creatio ex nihilo* we have at least an efficient cause. Finally, Morrision errs in thinking that a reductive analysis, if adequate, should have the same epistemic obviousness of the *analysandum* and in thinking that all intuitively grasped, metaphysically necessary, synthetic truths should shine with the same self-evidence and perspicuity. In short, I do not think that in light of Morrision's critique, premiss (1) of the argument is significantly diminished in its plausibility. In any case, it still remains more plausible than its contradictory. Thus, the answer to the first question should be, "Yes, the universe has a cause."

Must the Cause of the Universe Be a Person?

In the second part of his article Morrision, still assuming that God exists atemporally sans the universe, criticizes an argument for the personhood of the First Cause inspired by the Islamic Principle of Determination. In a nutshell, the argument is that, given a tensed theory of time, only personal, free agency can account for the origin of a first temporal effect from a changeless cause. As we have seen, on a tensed theory of time, the universe comes into being at the first moment of its existence. The event of the universe's coming into being cannot be an instance of state-state causation or event-event causation, since the origination of the universe is not a state and the condition of the timeless cause not an event. But neither can it be an instance of state-event causation, for this seems clearly impossible: If the unchanging cause is sufficient for the production of the effect, then the cause should not exist without the effect, that is to say, we should have state-state causation. If the cause is not sufficient for the production of the effect, then some change must take place in the cause to produce the effect, in which we have event-event causation and we must inquire all over again for the cause of the first event. The best way out of this dilemma is agent causation, whereby the agent freely brings about some event in the absence of prior determining conditions.

Morrision raises two objections to this argument: (i) Quantum mechanics allow for causal conditions which are not strictly speaking sufficient for their effects, and (ii) God's changeless state of willing the universe is sufficient for the existence of the universe and is an instance of state-state causation. {25} Since I have elsewhere addressed (i), {26} I shall concentrate here on (ii).

I am inclined simply to deny that God's eternally willing to create the universe, properly understood, is sufficient for the existence of the universe. As J. P. Moreland explains, in the case of personal causal explanations, the salient factors are the existence of an agent with his relevant properties and powers, the agent's intention to bring about some result, an exercise of the agent's causal powers, and in some cases a description of the relevant action plan. So "a personal explanation (divine or otherwise) of some basic result R brought about intentionally by person P where this bringing about of R is a basic action A will cite the intention I of P that R occur and the basic power B that P exercised to bring about R." {27} Notice that it is insufficient for P to have merely the intention and power to bring about R. There must also be a basic action on the part of P, an undertaking or endeavoring or exercise of P's causal powers. Thus, it is insufficient to account for the origin of the universe by citing simply God, His timeless intention to create a world with a beginning, and His power to produce such a result. There must be an exercise of His causal power in order for the universe to be created. That entails, of course, an intrinsic change on God's part which brings Him into time at the moment of creation. For that reason He must be temporal since creation even if He is timeless sans creation. {28} Such an account of the origin of the universe will work only for agent causation, for only a libertarian agent could interrupt the static reign of being of the First Cause sans the universe. It is for that reason that we should conceive of the First Cause as personal. Hence, the failing of Morrision's objection is that in speaking of God's willing that the universe exist, he does not differentiate between God's timeless intention to create a temporal world and God's undertaking to create a temporal world. Once we make the distinction, we see that *creation ex nihilo* is not an instance of state-state causation and is therefore not susceptible to Morrision's objection.

Conclusion

I conclude that Morrision has not defeated the conclusion that if time and the universe had a First Cause, that Cause is plausibly personal. Moreover, he has not shown that the plausibility of the causal premiss is greatly diminished by the various considerations he raises. Finally, even if the plausibility of that premiss were greatly reduced, nothing has been said to show that it is still not more plausible than its contradictory. If the *kalam* argument is unsound or unpersuasive, it is unlikely that the fault lies in its first premiss. {29}

NOTES

Endnotes

{1} Wes Morrision, "Must the Beginning of the Universe Have a Personal Cause? A Critical Examination of the *Kalam* Cosmological Argument," *Faith and Philosophy* 17 (2000): 149.

{2} Ibid., p. 150.

{3} Ibid., p. 149.

{4} Ibid., p. 150.

{5} Ibid., p. 155.

{6} Charles Misner, Kip Thorne, and John A. Wheeler, *Gravitation* (San Francisco: W. H. Freeman, 1973), p. 769. Sir Arthur Eddington went so far as to conclude, "The beginning seems to present insuperable difficulties unless we agree to look on it as frankly supernatural" (Arthur Eddington, *The Expanding Universe* [New York: Macmillan, 1933], p. 178).

{7} A. D. Linde, "The Inflationary Universe," *Reports on Progress in Physics* 47 (1984): 9760. Cosmologists often misleadingly press the difficulty posed by an absolute beginning in terms of the question, "What was before the singularity?" In order to be acceptable this question must be construed in terms of causal, not temporal, priority.

{8} A. Borde and A. Vilenkin, "Eternal Inflation and the Initial Singularity," *Physical Review Letters* 72 (1994): 3308.

{9} Morrision, "Beginning of the Universe," p. 155.

{10} Ibid.

{11} Ibid.

{12} Perhaps I contributed to the confusion by framing my analysis in terms of a *definition* of "x begins to exist."

{13} See William Lane Craig, "Creation and Conservation Once More," *Religious Studies* 34 (1998): 177–88.

{14} Morrision, "Beginning of the Universe," p. 156.

{15} William Lane Craig, "A Criticism of the Cosmological Argument for God's Non-Existence," in *Theism, Atheism, and Big Bang Cosmology*, by Wm. L. Craig and Q. Smith (Oxford: Clarendon Press, 1993), pp. 273–5.

{16} The causal principle is not as evidently true as the statement that "An object can be both red and green all over" in the sense that I can imagine things popping into existence uncaused out of nothing, whereas I cannot imagine a wholly red and green object. But appeals to imagination have little philosophical significance, for some things are possible which are unimaginable (*e.g.*, a four-dimensional hyper-cube), and we can form mental pictures of states of affairs which are metaphysically impossible (*e.g.*, Fermat's Last Theorem's being proved false). Moreover, the more I reflect on the causal principle the more obviously true it seems to me. Not only does it seem impossible that pure potentiality should actualize itself, but in the case of the universe there was not even the prior potentiality of its existence, since there was no "prior." If the causal principle were false, then it seems inexplicable why anything and everything does not pop into being uncaused. I freely concede that my reductive analysis of "begins to exist" is not intuitively obvious; but, as I explain in the text, that is no flaw in the analysis.

{17} Morrision, "Beginning of the Universe," p. 159.

{18} Hume indignantly declared, "But allow me to tell you that I never asserted so absurd a Proposition as *that anything might arise without a cause*" (David Hume to John Stewart, Feb. 1754, in *The Letters of David Hume*, ed. J. Y. T. Greig, 2 vols. (Oxford: Clarendon Press, 1932), 1: 187. Similarly, Mackie: "I myself find it hard to accept the notion of self-creation *from nothing*, even *given* unrestricted chance. And how *can* this be given, if there really is nothing?" (J. L. Mackie, *Times Literary Supplement* [5 February, 1982], p. 126).

{19} As Kanitscheider explains,

"The violent microstructure of the vacuum has been used in attempts to explain the origin of the universe as a long-lived vacuum fluctuation. But some authors have connected with this legitimate speculations [*sic*] far-reaching metaphysical claims, or at most they couched their mathematics in a highly misleading language, when they maintained 'the creation of the universe out of nothing'

From the philosophical point of view it is essential to note that the foregoing is far from being a spontaneous generation of everything from naught, but the origin of that embryonic bubble is really a causal process leading from a primordial substratum with a rich physical structure to a materialized substratum of the vacuum. Admittedly this process is not deterministic, it includes that weak kind of causal dependence peculiar to every quantum mechanical process" (Bernulf Kanitscheider, "Does Physical Cosmology Transcend the Limits of Naturalistic Reasoning?" in *Studies on Mario Bunge's "Treatise,"* ed. P. Weingartner and G. J. W. Dorn [Amsterdam: Rodopi, 1990], pp. 346–7).

{20} Morrision, "Beginning of the Universe," p. 169.

{21} *Ibid.*, p. 162.

{22} *Ibid.*

{23} Morrision himself takes our own power to control our actions to be the paradigm of causality. But, as J. P. Moreland argues, such control plausibly requires some sort of dualism (J. P. Moreland, "Searle's Biological Naturalism and the Argument from Consciousness," *Faith and Philosophy* 15 [1998]: 68–91), in which case we have a clear counter-example to the claim that every effect has a material cause. Not only do I cause effects in my physical body, but my mental states are causally connected. Moreover, some scientists have taken vacuum fluctuations to be a counter-example in the physical realm to the notion that

everything that begins to exist has a material cause, even if there exist efficient (indeterminate) causal conditions of such variations. See my "Design and the Cosmological Argument," in *Mere Creation*, ed. William A. Dembski (Downer's Grove, Ill: Inter-Varsity Press, 1998), pp. 332–59.

{24} See my "The *Kalam* Cosmological Argument and the Hypothesis of a Quiescent Universe," *Faith and Philosophy* 8 (1991): 104–108.

{25} Morrison, "Beginning of the Universe," p. 165.

{26} See Craig, "Design and the Cosmological Argument."

{27} Moreland, "Searle's Biological Naturalism," p. 75. See further idem, "Libertarian Agency and the Craig/Grünbaum Debate about Theistic Explanation of the Initial Singularity," *American Catholic Philosophical Quarterly* 71 (1998): 539–54.

{28} In arguing elsewhere for this view of divine eternity, I have refrained from speaking of the necessity of an exercise of God's causal power, since if it could be shown that a merely extrinsic change of God at the moment of creation suffices for His temporal existence at that moment, then *a fortiori* so will an intrinsic change. See, e.g., my "The Tensed vs. Tenseless Theory of Time: A Watershed for the Conception of Divine Eternity," in *Questions of Time and Tense*, ed. R. Le Poidevin (Oxford: Clarendon Press, 1998), p. 222.

{29} I thank Editor William Hasker for his astute comments on the first draft of this paper.