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Although Stewart Goetz is correct that the *kalam* cosmological argument does not rule out the possibility that the finite temporal series of past events was initiated by a distinct personal agent in an eternal, quiescent universe, this does not appreciably mitigate the force of the argument for theism. For the atheist will hardly be inclined to admit the existence of an eternal, changeless, personal Prime Mover rather than the fact that the universe began to exist. Moreover, since the existence of a quiescent universe is physically impossible, it could have existed only by means of a miracle so stupendous that it involved the suspension of all the laws of nature. The Prime Mover would thus have to be Lord over all the universe, a conclusion which even a successful *kalam* argument for the beginning of the universe does not attain.

Stewart Goetz's recent, brief critique[1] of the *kalam* cosmological argument disputes the second premiss of that argument—that the universe began to exist—by denying, not that an infinite temporal regress of events is impossible, but that the finitude of the series of past events implies that the universe had a beginning. He contends that in my defense of the *kalam* argument[2] I have failed to refute the hypothesis of a perfectly quiescent universe into which change was introduced a finite time ago by a personal agent.

Although there is, I believe, a substantive objection to the *kalam* argument contained in Goetz's critique, it is unfortunately obscured by his misconstruction of my argument. Indeed, many of the points which Goetz makes are an essential part of my own argument that the temporal first cause of the universe is a personal Creator. A re-examination of the original context will reveal that most of his objections were anticipated in *The Kalam Cosmological Argument*.[3]

The argument takes as given the existence of the material universe and asks whether the universe had or had not a beginning. After determining that the universe did begin to exist, it asks whether or not that beginning was caused. Concluding that the beginning of the universe was caused, the argument proceeds to show that that cause was personal rather than impersonal.

In showing that the universe began to exist, the argument relies upon various proofs that an infinite temporal regress of events is impossible. This would serve to convince most people that the universe began to exist (as Kant

assumes in the thesis of his First Antinomy concerning time), but "for the sake of completeness" I introduced at this point the hypothesis of the medieval Islamic theologian al-'Allaf that the temporal series of events was preceded by an eternal, quiescent universe. Against this hypothesis I then presented the following disjunctive syllogism:

1. Either the universe began to exist or the finite temporal regress of events was preceded by an eternal, absolutely quiescent universe.
2. The finite temporal regress of events was not preceded by an eternal, absolutely quiescent universe.
3. Therefore the universe began to exist.

Goetz apparently agrees with (1), since he does not dispute the impossibility of an infinite temporal regress of events. But he denies that (2) has been proven because it is possible that a personal agent distinct from the universe initiated the temporal series of events by causing a first event in the quiescent universe. He then exposits my defense of (2), "in response to this objection."[4]

But it should be evident that my defense of (2) is not at all in response to this objection. On the contrary, I should agree that what Goetz envisions is possible. In fact, I entertained and rejected this hypothesis in the context of a process theological view of the universe as the body of God: "To retreat to the position that God and the world lay dormant from eternity and began a process of mutual development a finite number of years ago completely removes any rationale for process theology, since according to this school, process and development are essential to God's very nature, and he cannot exist without development."[5]

Rather my arguments in support of (2) are aimed at an atheistic, materialist view of the universe. Hence, all of what Goetz says on p. 101 of his article is completely misdirected. On the contrary, the notion of agent causation plays an essential role in my later argument that the temporal First Cause of the universe must be a personal Creator:

> ...while it is true that no mechanical cause existing from eternity could create the universe in time, such a production of a temporal effect from an eternal cause is possible if and only if the cause is a personal agent who wills from eternity to create a temporally finite effect. For while a mechanically operating set of necessary and sufficient conditions would either produce the effect from eternity or not at all, a personal being may freely choose to create at any time wholly apart from any distinguishing conditions of one moment from another.[6]

Of course, one could say that the first effect caused by this personal being is not the creation of the universe, but some initial movement in the quiescent universe. *Creatio ex nihilo* would not then be proved, but as I employ it the *kalam* cosmological argument's primary aim is to support theism, not *creatio*

ex nihilo. The price of the quiescent universe hypothesis is admitting the existence of an eternal, changeless, uncaused, timeless, immaterial, spaceless, personal Prime Mover[7]—a hypothesis very suggestive of theism and hardly one which the atheist will at this point be prepared to accept! Hence, while Goetz is correct that my philosophical argument in behalf of (2) does not exclude the possibility that there exists a personal being who initiates the temporal series of events into a quiescent universe, that still leaves the atheist with a very uncomfortable dilemma:

> 4. Either the universe began to exist or the temporal series of events was initiated in an eternal, quiescent universe by a transcendent, personal being.

Confronted with such a dilemma, the non-theist may well prefer to accept the first horn of the dilemma in the hope that he can stave off the conclusions that this beginning was caused or that the cause of the beginning was personal.

That dilemma can be made even more uncomfortable by considering my second line of defense for (2), which Goetz unfortunately omits altogether, namely, that an eternal, quiescent universe is simply physically impossible. In *The Kalam Cosmological Argument* I briefly explain three empirical reasons why such a scenario is physically untenable: (i) Such a universe would have to exist at a temperature of absolute zero, which is physically impossible, (ii) Matter in the early stages of the universe was anything but cold, being collapsed into a volatile fireball with temperatures in excess of billions of degrees Kelvin, and (iii) In a lump of matter frozen (*per impossible*) at absolute zero, no first event could occur.[8] To these may be added the quantum physical consideration that the quantum mechanical vacuum, which is conceived to underlie all physical reality, far from being quiescent, is a sea of continually forming and dissolving particle-antiparticle pairs. Even if we do not interpret this picture realistically, it is clear that the quantum mechanical vacuum is the scene of intense activity, which has observable consequences for atomic structure and concerning which detailed predictions are confirmed by experiment to one part in a billion.[9] This implies that the physical, spacetime universe is fundamentally and inherently in flux, as Milton K. Munitz explains:

> From the point of view of a typical quantum field theory, even the most perfect vacuum, as a physical reality, is the scene of intense activity. Accordingly, the term 'vacuum,' in these contexts, has a specially, radically different meaning from the one it has in popular usage or in traditional physics. A vacuum state is not an absolute void; it is not to be identified with wholly empty space. Any quantum field with which a vacuum state is associated may be thought of as made up of separate centers of oscillation and excitation.... Even in the absence of real particles...quantum theory allows for the possi-

> bility of the existence of a field and its fluctuations. The quantum mechanical vacuum is not quiescent.[10]

But what the above implies is that the existence of an eternal, quiescent universe is naturally impossible; that is to say, the existence of such a universe would be quite literally *a miracle*, indeed, when one reflects on what would be involved in such a thing, a miracle of the most stupendous proportions conceivable, since it would involve suspension of all the laws of nature. Thus, this alternative to the beginning of the universe involves much more than the postulate of a transcendent, personal Prime Mover: it implies the existence of a being who is also the sovereign Lord over all the universe and its every most minute operation, a startling conclusion to which even the *kalam* cosmological argument does not lead us. The dilemma posed, therefore, by the demonstration that the temporal regress of events is not infinite is

> 5. Either the universe began to exist or the temporal series of events was initiated by a transcendent, personal being who miraculously preserved the universe from eternity in a quiescent state.

One might proceed to argue against the latter horn of the dilemma, for example, by emphasizing the utterly pointless nature of such an exercise; but we may let that pass. For the salient point is that the latter horn of the dilemma is as suggestive of theism as the former.

Goetz's objection, while perhaps precluding a strict demonstration of *creatio ex nihilo*, therefore does little to diminish the force of the *kalam* cosmological argument in support of theism.

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NOTES

1. Stewart C. Goetz, "Craig's Kalam Cosmological Argument," *Faith and Philosophy* 6 (1989): 99-102.

2. William Lane Craig, *The Kalam Cosmological Argument*, Library of Philosophy and Religion (London: Macmillan, 1979).

3. A further issue raised by the quiescent universe hypothesis, but not discussed by Goetz, is whether a spatial object must not also be a temporal object. In *The Kalam Cosmological Argument* I inclined toward a relational theory of time which would permit the possibility that an entity might be spatial without being temporal. But Sidney Shoemaker provides a persuasive argument that even if the universe were frozen into immobility, temporal passage would still continue according to an apparently intrinsic metric, as Newton believed (Sidney Shoemaker, "Time without Change," *Journal of Philosophy* 66 [1969]: 363-81; cf. W. H. Newton-Smith, *The Structure of Time*, International Library of Philosophy [London: Routledge & Kegan Paul, 1980], chaps. 4, 10). Would this

argument imply that an eternal, quiescent universe into which change is initiated was also a spatio-temporal reality? Since the reasoning of *kalam* can be applied to metric time as well as to events, an affirmative answer would require that time itself began to exist and that, therefore, the quiescent universe, since it is a spatio-temporal reality, must have begun to exist, which goes to prove *creatio ex nihilo*. In such a case, God creates time as well as the universe.

4. Goetz, "Cosmological Argument," p. 99.

5. Craig, *Kalam Cosmological Argument*, p. 170.

6. *Ibid.*, p. 151; cf. pp. 149-53. Notice, too, that I was not trying to give an analysis of causality in terms of necessary and sufficient conditions alone; my emphasis is on mechanical *vs.* personal causation.

7. On these various attributes, see Craig, *Kalam Cosmological Argument*, pp. 149-53; a little reflection shows that they are entailed by Goetz's hypothesis.

8. *Ibid.*, pp. 101-02.

9. John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle* (Oxford: Clarendon Press, 1986), p. 440.

10. Milton K. Munitz, *Cosmic Understanding* (Princeton: Princeton University Press, 1986), p. 132. Cf. Wheeler's remark:

> "The term 'quantum fluctuations'...stands for a movement that can never be frozen out, however low the temperature. Such fluctuations are universal.... In the frozen vacuum of quantum electrodynamics the electric and magnetic fields both fluctuate.... Thus all space at the quantum scale of distances is...everywhere the scene of the most violent smallscale fluctuations in the electromagnetic field"

(John Archibald Wheeler, "Superspace and the Nature of Quantum Geometrodynamics," in *Quantum Cosmology*, ed. Li Zhi Fang and Pemo Ruffini, Advanced Studies in Astrophysics and Cosmology 3 [Singapore: World Scientific, 1987], p. 40).