

Eternalism as a Response to the Kalam Cosmological Argument

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In his article, “In Search of a Creator: Infinity and Existence in the Kalam Cosmological Argument,” Leonardo Salvatore defends a refutation of atheism championed by contemporary theologian William Lane Craig. While Salvatore’s defense of the Kalam Cosmological Argument (hereafter “the argument”) constitutes a detailed analysis with references to both historic and modern commentators, it neglects a crucial objection that jeopardizes the argument’s integrity, specifically, the rejection of common intuitions about the structure of time. Before I describe the objection, however, let us examine the argument as Salvatore presents it:

- (1) Whatever begins to exist has a cause of its existence.
- (2) The universe began to exist.
 - (2.1) Argument based on the impossibility of an actual infinite.
 - (2.11) An actual infinite cannot exist.

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- (2.12) An infinite temporal regress of events is an actual infinite.
- (2.13) Therefore, an infinite temporal regress of events cannot exist.
- (2.2) Argument based on the impossibility of the formation of an actual infinite by successive addition.
- (2.21) A collection formed by successive addition cannot be actually infinite.
- (2.22) The temporal series of past events is a collection formed by successive addition.
- (2.23) Therefore, the temporal series of past events cannot be actually infinite.
- (3) Therefore, the universe has a cause of its existence (i.e., a Creator Deity).¹

In his discussion of the second premise, Salvatore correctly distinguishes between potential infinity (when an entity like a numerical function increases towards infinity but never reaches it, e.g., along an asymptote) and actual infinity (a complete set of elements that together have infinite value, such as the set of all natural numbers, i.e., $\{0,1,2,3 \dots\}$), and he rightly characterizes actual infinity as logically and mathematically sound (Salvatore 33). The argument, however, does not hinge on the notion that actual infinity cannot exist *mathematically* but rather that it cannot exist in *reality* (i.e., in the physical universe).

To illustrate this claim, Salvatore references a famous thought experiment known as Hilbert's Hotel, which posits a hotel with infinite rooms and a guest in every room (Salvatore 34). When n new guests check into the hotel, all of the current guests transfer to the room with a number equal to that of their previous room plus n . If there are infinite guests at the hotel, and 12 new guests arrive, then the number of guests remains infinite, which makes sense mathematically (adding a finite set of numbers to an infinite set of numbers does not change the cardinality (size) of the

¹Although Salvatore takes issue with premise (3) and ultimately proposes an alternative formulation, the objection raised in this essay relates to premise (2), and thus the precise wording of the final premise does not matter.

infinite set), but it does not make sense physically. It would be difficult to imagine how adding 12 more people would not change the number of physical bodies in the hotel, and, in any case, an infinite physical set of (approximately equally sized) bodies would require the universe to contain an infinite amount of matter, which it does not.

However, Craig (and Salvatore) then mistakenly extend this impossibility of the actual infinite to time. According to Salvatore, Craig argues that an infinite temporal regress is impossible, since such a regress would entail an actual infinite series of past events prior to the present moment. In other words, nothing (no event) could ever begin because the moment at which it begins would never actually arrive (Salvatore 34). Thus, the universe must have a beginning (Salvatore 34). However, this argument implies an ontology of time that remains highly controversial from both a philosophical and physical point of view. In particular, Craig assumes that time is directional (i.e., time consists of a discrete series of moments proceeding linearly from the present to the future), and that time exists in the first place. Philosophers of time have proposed multiple, mutually exclusive theories about the structure of time, some of which align with the view Craig seems to hold, and others that clearly do not. I will focus on a view from the latter category: eternalism.

Eternalism posits that both the past and the future exist simultaneously (as a space-time continuum) and that there is nothing metaphysically privileged about the present moment (Emery et al. 2020). Hence, the supposed “flow” or “passage” of time represents a mere illusion. Importantly, this view does not preclude the possibility that the universe never began. In a sense, moments of time would represent an actual infinite set. Just as one could specify particular integers (e.g., -1, 5, 3, etc.) from a set of integers with no upper or lower bound, so too could one specify particular moments of time (e.g., the present moment, two days ago at 5:57 pm, etc.) from the infinite chronology of the universe. But the argument that nothing could begin if the universe has always existed simply dissolves: the entire (potentially infinite) history of the universe exists simultaneously and always has.

One may, of course, object that eternalism sounds intuitively less plausible than Craig’s implied ontology, but modern physics has provided increasing support for eternalism. For instance, Albert Einstein posited that time constitutes an illusion of our perceptual systems rather than a fundamental feature of physical reality (Holt). As a consequence of general relativity, time is not absolute. Thus, individuals age more slowly at lower altitudes and when traveling at faster speeds. Moreover, questions about what is happening on a distant planet “right now,” simply do not make sense when posed by humans on Earth, since time does not pass in a uniform

manner throughout the universe. In fact, the earlier model I referenced (in which integers represent slices of time) may only apply at a very local (not a universe-wide) level, because time flows differently at distinct spatial points in the universe. Although he does not espouse eternalism himself, renowned physicist Carlo Rovelli and others have drawn the conclusion that time does not “pass” in the conventional sense (i.e., there is no true “past” or “future”), and that our intuitions about time’s supposed directionality stem from our perceptions of increasing entropy in physical systems (Rovelli 8). A full description of these technicalities extends beyond the scope of this paper—my intention is merely to demonstrate that neither physicists nor philosophers unanimously embrace Craig’s ontology of time.

To clarify, the arguments I have presented by no means refute theism. There is no *a priori* reason to suppose a creator deity may have chosen one temporal ontology over another. Moreover, I do not intend to suggest the argument has no place in future philosophical discourse—quite the opposite, in fact. My hope is to inspire more thorough examinations of the argument’s premises in light of historical and contemporary work in the philosophy of time.

Works Cited

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