A Short Logical Review of the Kalām Cosmological Argument

Una breve revisión lógica del argumento cosmológico Kalām

J.-Martín Castro-Manzano[1]
UPAEP Universidad, Puebla, México
josemartin.castro@upaep.mx

Abstract

In this short contribution we discuss the logical validity of the Kalām cosmological argument as presented by W. L. Craig. This discussion suggests the argument fails at being logically valid if we admit a distinction between first and second order variables.

Keywords: Classical logic, Kalām, cosmological argument, first order logic, second order logic.

Resumen

En esta breve contribución discutimos la validez lógica del argumento cosmológico Kalām como ha sido presentado por W. L. Craig. Esta discusión sugiere que el argumento no es lógicamente correcto si admitimos una distinción entre variables de primer y segundo orden.

Palabras clave: Lógica clásica, Kalām, argumento cosmológico, lógica de primer orden, lógica de segundo orden.

Introduction

In 1979 W. L. Craig published a book—*The Kalām Cosmological Argument*—in which he offered a contemporary and highly influential defense of the Kalām cosmological argument. Although such defense is complex and would require a proper and longer review, here we focus, for reasons of sim-

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[1] ORCID: https://orcid.org/0000-0003-2227-921X

plicity (and, overall, popularity), on the basic core of the argument, which runs as follows:

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

The reason why we pay attention to this particular piece of argumentation is its undisputed logical structure. Indeed, when presented in this fashion, the argument seems to be logically correct or formally flawless. And such a claim, in turn, seems to get confirmed every time the usual critiques question all but the structural validity of the argument: the typical assessments presume, at least tacitly, that the argument is valid when they accept premise 1 as uncontroversial, attack premise 2 on the grounds of some interesting distinctions (Kaiser, 1944; Kenny, 1969; Fogelin, 1990; McQueen, 1994; Sobel, 2004), but bypass any examination of the logic behind the argument.

However, even if these criticisms are interesting in themselves, they disregard a logical aspect that, by our lights, should not be diminished. Hence, given this situation, in this short contribution we discuss the logical validity of the Kalām cosmological argument as presented by Craig. Our discussion suggests the argument fails at being logically valid if we admit a distinction between first and second order variables.

1. An alternative interpretation

So, *prima facie*, the argument appears to be some sort of *Barbara* syllogism, and hence, a valid argument that would look, more or less, as follows:

1. *All* Begin-to-exist *is* Caused-for-its-existence.
2. *All* Universe *is* Begin-to-exist.
C. Therefore, *All* Universe *is* Caused-for-its-existence.

However, on a second reading, we can observe a subtle but crucial distinction that is missing when we assume this syllogistic parsing: while premise 1 appears to quantify and predicate over individuals, premise 2 and the conclusion appear to predicate and quantify over domains. If this distinction is not clear, consider the next representation of the original argument that allows us to see the situation in a more transparent setting. Let *Ex* stand for *x begins to exist* and *Cyx* for *y causes the existence of x*. Then the argument would have the next structure:

1. $\forall x \exists y (Ex \Rightarrow Cyx)$
2. EU
$\therefore \exists y CyU$

But then, notice, there is an important issue that is often overlooked, namely, the difference between first and second order variables, for it seems the universe is the *locus* in which things exist, that is to say, it is a domain, but not *another* thing. We can try to explain this distinction by exemplifying a couple of questions. Consider the query

"Where is the computer?"

Assuming "the computer" refers to the laptop in our desk, next to the glass of water, the question makes perfect sense; but the question

"Where is the universe?"

does not seem to be equally meaningful, because the universe, unlike the computer, does not appear to be another thing among things. The universe, unlike the computer, is not anywhere.

To bring this point home consider the next *gedankenexperiment*. Imagine Alan has been born and raised in a small apartment. Its walls are painted titanium white and, as usual, it is divided into a kitchen, a living room, a bedroom, an office, and a bathroom. It is almost a regular one, but there is a catch: it lacks windows or doors to the outside, and so Alan, like once happened to Mary (Jackson, 1982), has no notice of the world outside the apartment.

Inside the office there is a desk with some books on it, and next to the books there is a personal computer, a laptop. Clearly, the laptop, as well as the books and the desk, exist in so far as they are there, inside the apartment. And thus Alan can say, with perfect utility, that the laptop is here and now, right there or over there, that it was not here before and, of course, that it will not be here eventually. Nevertheless, it also seems clear that Alan cannot do the same for the apartment, that is, he cannot finger to the apartment in the same way he can pinpoint the computer, for that would imply the apartment is, like the laptop and the books, another item within the apartment, which sounds absurd.

This experiment has to pay its dues, though. First, as Strawson (1948) has pointed out, facts are not to be found *in* the world; but if, as Sommers (1980) and Englebretsen (2006, 2012) have argued, facts are not in the world, then they have to be properties *of* the world. Hence, domains, like the universe, have to be defined *by* their constituents, but a domain is not a constituent of itself. Using an example by Englebretsen: the soup I had this morning was salty, but it was not "soupy," likewise, following these examples, we

can say the universe is laptop-ish (in so far as laptops are constituents of the universe), but it is not universe-ish (since the universe is nowhere to be found within the universe).

Consequently, premise 2 should be specified, as we did above, with a higher order variable, say *U*, for *the universe* (hence the expression *EU* in premise 2). However, if this is the case, then the conclusion of the Kalām cosmological argument does not follow from 1 and 2 since we cannot unify *x* (in premise 1) and *U* (in premise 2), given that they are variables of different order (first and second, respectively). Doing otherwise would result in a fallacy of composition or a category mistake (by unlawfully transferring properties of individuals to domains).

To further illustrate this issue, consider the next counterexample:

1. Everything that begins to exist has a place within the universe.
2. The universe began to exist.
C. Therefore, the universe has a place within the universe.

Clearly, even if we grant the truth of the premises, the conclusion does not seem to be quite right, for the universe does not have a place, let alone inside itself.

At this point, however, the skeptical reader may think that such a basic analysis cannot possibly defeat or even undercut the original argument. So, let us consider some possible objections a skeptic may entertain so far.

Objection 1. Back to basics. Before moving to the previous logical analysis, retort to analogy, for the concept of "thing" is analogical, it can encompass both individuals and domains. After all, we can rightfully talk about individuals and domains as things. And so, there is no use for the distinction between first and second order variables. The argument applies to both, individuals and domains. Thus, the original argument stands as is.

Answer 1. Fine, let the concept of "thing" be analogical. However, notice that when we recognize that a concept is analogical we do it not just to show similarities, but to enhance differences. But this objection fails to recognize there is a fundamental difference between being an individual-thing (say, a thing$_1$) and a domain-thing (say, a thing$_2$): the former may belong to the latter but not the other way around. And therefore, claiming that "thing" is an analogical concept just backfires: it pretends to keep the argument safe from differences, but that is precisely what we get, a difference, if we appeal to analogy.

Objection 2. Fill in the blanks. Well then, simply introduce what is missing. Just add the lost distinction, that is to say, make explicit what is implicit, for example, as follows:

1. $\forall x \forall X \exists y ((Ex \vee EX) \Rightarrow (Cyx \vee CyX))$
2. *EU*
∴ $\exists y CyU$

Answer 2. The problem with this second objection, however, is that given such a set of premises (or a similar one) the conclusion should be something like $\exists y(Cyb \vee CyU)$—where *b* stands for an arbitrary individual—, which is fair enough, but is not felicitous because such a conclusion is far from being the original one. The original one is categorical, whereas this second conclusion is rather "gettierian", that is to say, it is a lucky disjunction that may be true, not for relevant reasons, but by coincidence; nevertheless, that is not what the original argument aims at.

Objection 3. Kill the messenger. But why should we use this kind of logical analysis anyway? Why should we accept this logical analysis as the right one? After all, there are several ways in which we could analyze an argument and, perhaps, by following the principle of charity, we should concede this argument is just a plain, valid syllogism, a *Barbara* syllogism as it were, and so we are using an unnecessary complex logical analysis that does not make justice to the original argument.

Answer 3. Granted. It may be the case that we are overanalyzing the argument, but there are, at least, two problems with this objection: *i)* suppose the argument is just a plain syllogism. A plain syllogism cannot cope with binary relations, but the argument requires the binary relation of causation, thus the argument is not just a syllogism; nevertheless, suppose we overlook this lightweight issue and accept the argument is a plain syllogism— say, given an adequate parsing of the original argument, as above. Still, *ii)* if we neglect the difference between individuals and domains that this kind of logical analysis sanctions, then we are at odds if we try to avoid fallacies of composition or category mistakes. Thus, rejecting this sort of analysis amounts to rejecting the difference between individuals and domains, which would leaves us ill-prepared to counter said ill-formed arguments.

Objection 4. Be in the here and now. Fine, but the universe is a thing we can finger to. Surely, we can pinpoint the universe. We are *here*, here in the universe, and nowhere else. But then our use of "here" when we say "we are here" is pointing to the universe here (and now). In which case the logical analysis fails, for the universe could be just represented by a first order variable, say *u*, instead of *U*. This is consistent with how we usually talk about the universe and its beginning, as if both were things, thus, the claim that the universe is something that requires a higher order representation only seems far fetched.

Answer 4. This fourth objection may sound reasonable in principle, but is a no starter. The fact that we can use "here" to talk about the universe does not imply we are ostensibly denoting it. As Sommers (1980), van Fraassen (1995), Simons (2003), Bunge (2006), and Englebretsen (2006, 2012) have independently argued, when we talk of universes as domains they are (more likely) totalities of things$_1$, not maximal things$_1$. Thus, using *u* would not be ontologically fair neither for individuals nor for the universe. And so, although it is true that we sometimes talk about the universe and its beginning as if they were things$_1$, that does not imply they are things$_1$. Englebretsen (2012) has said it better: talk is cheap.

Objection 5. A second wind. Fair enough, but maybe the proper analysis for this argument should be mereological rather than logical in the classical sense. Perhaps the universe is the mereological sum of its parts, and if so, then the universe is not a domain or thing$_2$, but indeed a single maximal thing$_1$, in which case, the argument would make sense.

Answer 5. Remarkably, this last objection does hold some water; however, as Simons (2003) has argued, it seems that "universe" is not a singular but a plural term for a plural collection, in which case the original argument is still in trouble, for the original argument does not seem to be accepting a mereological parsing. Hence, maybe something in the lines of (Koons, 1997) would be more feasible than the Kalām argument, but so far, the original argument is not successful because, even if we grant such a mereological reading, the conclusion would still not follow: premise 1 would be talking about properties of non-maximal things$_1$, while premise 2 would be talking about properties of the maximal thing$_1$, but such properties are not necessarily coextensive.

Conclusion

And so, to wrap this up, in this short contribution we have discussed the so-called validity of the Kalām cosmological argument as presented by Craig. On the face of its undisputed logical structure, our discussion suggests the argument fails at being logically valid if we perform a distinction between first and second order variables. Of course, although such distinction is clearly open to discussion and we do not claim this interpretation is *knock-out*, we think this short logical review is interesting in so far as it provides an alternative treatment of a popular argument whose fragility might stem from a logical issue, say, and not necessarily from an over the top cosmological problem.

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