

Craig's Kalām Cosmology

Let 'reality' refer to the largest whole every eligible part of which is connected to our eligible part of reality under a privileged external relation (think: 'a is causally related to b'). We suppose that this privileged external relation has an analogue that is *directed*, so that some eligible parts of reality are anterior to other eligible parts of reality under the analogue of the privileged relation (think: 'a is causally anterior to b'). We do not suppose that this analogue relation is *total*: we allow that there are non-overlapping eligible parts of reality such that neither is anterior to the other under the analogue relation. However, as noted, we do suppose that any two non-overlapping eligible parts of reality are *connected* by a *chain* of non-overlapping eligible parts of reality under the relation itself. Moreover, we suppose that each *eligible* part of reality is such that none of its parts is anterior to any other of its parts under the analogue relation, and also such that there are no other eligible parts of reality to which it fails to be connected under the relation itself.

To illustrate this rather abstract account of reality—and to exhibit a justification for its complexity—we consider a concrete example. Pretend that reality is exhausted by an instance of a standard general relativistic universe that originates in an initial singularity. Eligible parts of reality will be maximal sub-parts all of whose parts have *only* space-like connections to each other. These eligible parts will stand in causal—light-like and time-like—relations to one another. If, for example, the initial singularity is a singular surface, it may be that there are non-overlapping eligible parts of reality that are causally related to one another only in virtue of the fact that they trace back to non-overlapping regions of that initial singular surface. (Among the reasons why we can only *pretend* that reality is exhausted by an instance of a standard general relativistic universe that originates in an initial singularity, perhaps the most important is that we should not immediately rule out the possibility that reality has parts 'on the other side of the initial singularity' from which our observable universe has arisen. We suppose only that, if reality does have parts 'on the other side of the initial singularity' from which our observable universe has arisen, then there are least analogues of causation and space-like relation that determine the extent of reality.)

There are many hypotheses that one can frame about the overall 'shape' taken by reality under our privileged external relation. We begin by distinguishing the following two very general competing hypotheses:

Infinite Regress: Under the external relation, each eligible part of reality which is posterior to some non-overlapping eligible part of reality belongs to a chain of non-overlapping eligible parts of reality which satisfies the following condition: for each member of the chain, there is an anterior (and not posterior) member of the chain that does not overlap with any other members of the chain.

Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any eligible part of reality.

In the subsequent discussion, we simply—though perhaps improperly—*ignore* all of the many competing hypotheses that one might frame about the general shape of reality under the privileged external relation.

The Initial Boundary hypothesis divides into two competing sub-hypotheses, depending upon the *modal* status of the initial boundary:

Contingent Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality exists contingently.

Necessary Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality exists of necessity.

The Initial Boundary hypothesis also divides into two competing sub-hypotheses depending upon the *ontological* status of the initial boundary:

Immanent Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality is continuous in nature with the rest of reality

Transcendent Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality is radically different in nature from the rest of reality.

And the Initial Boundary hypothesis divides into two competing sub-hypotheses depending upon the *psychological* status of the initial boundary:

Impersonal Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality has no personal—mental, psychological—properties

Personal Initial Boundary: Under the external relation, there is a smallest eligible part of reality that is anterior to every other non-overlapping eligible part of reality and not posterior to any non-overlapping eligible part of reality, and that smallest eligible part of reality has personal—mental, psychological—properties.

Given only the distinctions that we have drawn to this point, we now have eight competing versions of the Initial Boundary hypothesis, and we also have the competing Infinite Regress hypothesis. Are there reasons to prefer one of these nine hypotheses above all of the others?

Theists suppose that the answer to this question is affirmative: we should prefer Necessary Transcendent Personal Initial Boundary above the other eight hypotheses. On the other hand, it is not at all clear that *naturalists* suppose that the answer to the

question is affirmative: it may well be that naturalists suppose that we have no reasons for preferring any one of Infinite Regress, Necessary Immanent Impersonal Initial Boundary, and Contingent Immanent Impersonal Initial Boundary to the other two hypotheses in this group. However, naturalists will hold that at least one of Infinite Regress, Necessary Immanent Impersonal Initial Boundary, and Contingent Immanent Impersonal Initial Boundary is preferable to all of the six remaining alternatives; and if naturalists are undecided between two or more of the hypotheses that are congenial to naturalism, then they will hold that all of the hypotheses between which they are undecided are preferable to the remaining six alternatives.

In the ensuing discussion, we shall restrict our attention to the dispute between theists and naturalists about the standing of the four hypotheses singled out in the preceding paragraph. As before, we simply—though perhaps improperly—*ignore* all other disputes concerning the relative standing of the nine hypotheses that we have identified, and concerning the many hypotheses that we have not even attempted to frame. (It is, for example, an interesting question what *pantheists* should say about the relative standing of our nine hypotheses. But that is not a question properly taken up in the present context.)

One way of reading William Lane Craig's voluminous writings on the *kalām* cosmological argument is as the construction of a case for the superiority of Necessary Initial Boundary to both Infinite Regress and Contingent Initial Boundary. While Craig's writings focussed solely on the *kalām* cosmological argument offer no means of deciding between Necessary Immanent Impersonal Initial Boundary and Necessary Transcendent Personal Initial Boundary, the success of the case developed in those writings would remove Infinite Regress and Contingent Immanent Impersonal Initial Boundary from the contest, or, at any rate, would provide some non-negligible but defeasible reason to prefer Necessary Transcendent Personal Initial Boundary to Infinite Regress and Contingent Immanent Impersonal Initial Boundary. Consequently, naturalists have good reason to think carefully about the case that Craig develops: if his case is compelling, then naturalists are obliged to adopt Necessary Immanent Impersonal Initial Boundary. We shall start with the case that Craig develops against Infinite Regress.

1

Craig provides two quite different kinds of objections to Infinite Regress. On the one hand, he objects on philosophical grounds: in his view, Infinite Regress is metaphysically impossible. On the other hand, Craig objects on empirical grounds: in his view, Infinite Regress is ruled out—or, at any rate, rendered implausible—by contemporary scientific cosmology. In the present section, we shall consider philosophical objections to Infinite Regress; in the next section, we shall turn to empirical objections.

Craig typically divides the philosophical considerations that he advances against Infinite Regress into two parts. On the one hand, he advances philosophical considerations against the suggestion that reality has—or, indeed, could have—infininitely many non-overlapping parts; and, on the other hand, he advances philosophical considerations against the view that, allowing that reality has infinitely many non-overlapping parts, reality is—or, indeed, could be—so arranged that it has

infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation. (Note that Infinite Regress *entails* that reality has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation; indeed, Infinite Regress entails that *every* part of reality that is posterior to some part of reality belongs to a beginningless chain under the privileged external relation.)

Craig's First Philosophical Argument: Craig discussion of the suggestion that reality could have infinitely many non-overlapping parts has two major components. First, Craig considers the acceptability of the standard, classical conception of infinity, as enshrined, for example, in Zermelo-Frankel set theory. Second, Craig considers the possibility that this standard classical conception of infinity is instantiated in reality, as implied by Infinite Regress. It should be noted that Craig also gives very extensive discussion of the ontological commitments of standard, classical mathematics, because he thinks that Platonists hold that mathematical entities are 'part of the real world'. However, I take it that this is a mistake: while Platonists may suppose that mathematical entities 'exist in Platonic Heaven', they do not think that the privileged external relation makes any connections between Platonic Heaven and reality. Hence, even if Platonism should be preferred to nominalism, conceptualism, formalism, fictionalism, and so forth, that does nothing to advance the cause of Infinite Regress.

On the question of the acceptability of the standard, classical conception of infinity, Craig makes much of the fact that there have been brilliant proponents of constructivism, intuitionism, and finitism: Kronecker, Brouwer, Nelson, Feferman, and the like. However, it is worth noting that constructivism, intuitionism and finitism are all very much minority positions; the overwhelming majority of working mathematicians accept standard, classical mathematics. Moreover, this is not just a matter of fashion: there are good reasons for preferring standard, classical mathematics to the alternatives. In particular, it should be observed that, in order to adopt one of the alternative views, one needs to give up parts of classical logic—and, if one does give up parts of classical logic, then this has consequences for the arguments that one can make elsewhere. (To give one example: the standard proofs of the Hawking-Penrose theorems that establish that, under plausible assumptions, singularities are generic in general relativistic space-times, are non-constructive. Until constructive proofs of these theorems are provided, those who renounce classical mathematics are not entitled to rely upon these theorems.) While Craig himself may have a distinct reason for rejecting alternatives to classical mathematics—namely, that only classical mathematics could do justice to God's mathematical knowledge—it seems pretty clear that acceptance of classical mathematics is very well justified on naturalistically acceptable grounds.

On the question of the possibility that the standard, classical conception of infinity is instantiated in reality, Craig objects that the assumption, that it is possible for the standard, classical conception of infinity to be instantiated in reality, has absurd consequences. In particular, Craig argues that, if it is possible for the standard, classical conception of infinity to be instantiated in reality, then, for example, it is possible for there to be a hotel with infinitely many rooms, for all of the rooms to be occupied, and yet for the proprietor to accommodate a new guest by moving each guest into an adjacent room. There are at least two kinds of critical responses that might be made to arguments of this kind. On the one hand, it might be denied that it is

absurd to suppose that a new guest could be accommodated in a hotel in which every room is occupied by the expedient of moving each guest into an adjoining room. Of course, we know that this can't be done in a hotel with only *finitely* many rooms—but how can that be a reason for thinking that there could not be a hotel with infinitely many rooms? On the other hand, it might be argued that there could not be a hotel with infinitely many rooms, and yet denied that this somehow casts doubt on Infinite Regress.

Which kind of response should be preferred? Well, that depends upon the assumptions that we make about the kind of possibility that is at issue. If we suppose that what is at issue is something like clear and consistent conceivability—can we make a model of, or imagine, the scenario in question—then we can happily make the former response. However, if we suppose that what is at issue is some kind of metaphysical possibility whose nature might be cognitively opaque to us, then we might well prefer to opt for the latter response. Suppose, for example, that we think that all metaphysically possible universes are governed by the same laws and boundary conditions as our universe: there is a finite limit on the speed at which signals can be transmitted in *vacuo*, there is a finite limit beyond which any mass collapses under the force of gravitational attraction, there is a fixed lower bound to the size of a hotel room, and so forth. In that case, clearly, there cannot be a hotel that satisfies the demands of Craig's story. And, moreover, this is not just a feature of the chosen example: the same can be said about each aspect of each of the stories that Craig takes to show that the assumption that it is possible for the standard, classical conception of infinity to be instantiated in reality, has absurd consequences. But, of course, the considerations that here rule it impossible for there to be entities that satisfy the demands of Craig's stories plainly do not rule out Infinite Regress.

The upshot of this discussion is that Craig's 'first philosophical argument' provides no good reason for ruling out the claim that reality has infinitely many non-overlapping parts. Of course, that's not to say that we have here given good reason for thinking that it is possible that reality does have infinitely many non-overlapping parts. However, it is worth noting that, Craig's animadversions to the contrary notwithstanding, it has been the case throughout recorded history that there are many people—philosophers, natural scientists, and so forth—who suppose that it is possible that reality does have infinitely many non-overlapping parts. Indeed, it has been the case throughout recorded history that there are many people who suppose that it is possible that our *local* part of reality has infinitely many non-overlapping parts: infinitely many non-overlapping spatial regions, infinitely many stars, an infinite succession of past stages, and so on. Moreover, it seems to me that an unprejudiced view of the historical record plainly demonstrates that the reasons that people have given for thinking that it is possible that our *local* part of reality has infinitely many non-overlapping parts are collectively no worse than the reasons that people have given for thinking that it is impossible that our *local* part of reality has infinitely many non-overlapping parts. So, at the very least, there is good reason to be less than overwhelmed by Craig's 'first philosophical argument'.

Craig's Second Philosophical Argument: Craig's discussion of the suggestion, that, allowing that reality has infinitely many non-overlapping parts, reality could be so arranged that it has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation, turns centrally on his claim

that this suggestion has absurd consequences that can be brought out through the discussion of cases that plainly would be possible if it were possible for reality to be so arranged that it has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation. Consider Tristram Shandy, who takes a year to plan one day of his life. If the past is infinite, and if Tristram Shandy has existed at all times in the past, then it should be possible for Tristram Shandy to put down his pen at a particular time, with no part of his life to that point remaining unplanned. But it is absurd to suppose that it is possible for Tristram Shandy to put down his pen at a particular time, with no part of his life to that point remaining unplanned, given that he has existed at all times in an infinite past.

As before, there are at least two different kinds of critical responses that might be made to arguments of this kind. On the one hand, it might be denied that it is absurd to suppose that it is possible for Tristram Shandy to put down his pen at a particular time, with no part of his life to that point remaining unplanned, given that he has existed at all times in an infinite past. On the other hand, it might be argued that it is, indeed, impossible for there to be a person who has existed at all times in an infinite past, and who puts down his pen at a particular time, with no part of his life to that point remaining unplanned, but denied that this somehow casts doubt on Infinite Regress.

Which kind of response should be preferred? Well, again, that depends upon the assumptions that we make about the kind of possibility that is at issue. If we suppose that what is at issue is something like clear and consistent conceivability—can we make a model of, or imagine, the scenario in question—then we can happily make the former response. It is hard to see that there is any barrier to the clear and consistent conception—or imagination—of a case in which, at all times, it is true that Tristram Shandy is going to put down his pen at a particular time, with no part of his life to that point unplanned. (In this case, Tristram Shandy will spend his last year planning his last day, his second last year planning his second last day, and so on. As we consider years that are more distant in the past, there is a greater gap between the year and the day that is planned during that year. Nonetheless, for each day prior to the point at which he puts down his pen, there is a year in which he plans that day.) However, if we suppose that what is at issue is some kind of metaphysical possibility whose nature might be cognitively opaque to us, then we might well prefer to opt for the latter response. Suppose, for example, that we think that all metaphysically possible universes are governed by the same laws and boundary conditions as our universe: all fundamental particles have a finite half life, there is a finite limit beyond which any mass collapses under the force of gravitational attraction, there is a fixed upper bound to the storage capacity of a human brain, there is a fixed lower bound to the amount of matter needed to construct a record of planning for a future day, and so forth. In that case, clearly, there cannot be a person who conforms to the demands of Craig's story. And, moreover, this is not just a feature of the chosen example: the same can be said about each aspect of each of the stories that Craig takes to show that the assumption, that, allowing that reality has infinitely many non-overlapping parts, reality could be so arranged that it has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation, has absurd consequences. But, of course, the considerations that here rule it impossible for there to be entities that satisfy the demands of Craig's stories plainly do not rule out Infinite Regress.

The upshot of this discussion is that Craig's 'second philosophical argument' provides no good reason for ruling out the claim that, if reality has infinitely many non-overlapping parts, then reality could be so arranged that it has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation. Of course, that's not to say that we have here given good reason for thinking that it is possible that, if reality has infinitely many non-overlapping parts, then reality could be so arranged that it has infinitely many non-overlapping parts that belong to a single beginningless chain under the privileged external relation. However, as we have already noted, it has been the case throughout most of recorded history that there are many people who suppose that it is possible that our *local* part of reality has infinitely many past stages. Indeed, no less an authority than Aquinas held that the claim that it is possible that our *local* part of reality has infinitely many past stages could only be ruled out on the basis of divine revelation: if God had not given us a biblical revelation concerning the finite history of our universe, then we would have no way of ruling out the claim that it is possible that our *local* part of reality has infinitely many past stages. (Of course, recent scientific developments effectively rule out the claim that it is possible that our local part of reality has infinitely many past stages: our local part of reality has a roughly thirteen billion year history beginning with the Big Bang. But that consideration takes us beyond Craig's 'philosophical arguments' and on to Craig's 'empirical argument'.) As before, it seems entirely fair to conclude that there is good reason to be less than overwhelmed by Craig's 'second philosophical argument'.

2

Craig's empirical argument against Infinite Regress is based on a particular interpretation of Big Bang cosmology. In its early incarnations, this empirical argument goes as follows.

There are three possible theories of the origin of the universe: the steady state model, the oscillating model, and the Big Bang model. The steady state model is ruled out by various features of observational cosmology—measurement of the cosmic microwave background radiation, etc. The oscillating model is ruled out by evidence from observational cosmology that strongly supports the claim that the universe is open, and, indeed, strongly supports the claim that the universe is expanding in a run-away fashion. But:

The Big Bang model, in which the universe originates in an explosion from a state of infinite density, that is, from nothing, provides a simple, consistent and empirically sound construction of how the universe began. (*The Kalām Cosmological Argument*, 1979, 117)

The most obvious problem that confronts this argument is that it is simply not true that a model in which 'the universe originates in an explosion from a state of infinite density' is a 'consistent and empirically sound construction of how the universe began'. In particular, on the one hand, we note that this model takes no account of quantum theory, even though, on this model, the very earliest part of the universe necessarily falls within the domain of quantum theory; and, on the other hand, we note that quantum theory has at least as much empirical support as *any* scientific theory that we accept. Assuming that general relativity is not overthrown by a

successor theory in the classical domain, the very least that is needed before we can start drawing evidence-based conclusions about the origins of the universe is an empirically adequate quantum-gravitational model. But, as of the time of writing, that is something that we do not have.

Given that we do not have an empirically adequate model of the earliest origins of the universe—i.e. of the origins of the universe during the time period in which quantum influences would have been important for the global features of the universe—we are in no position to provide an evidence-based perspective on questions about the nature of reality prior to that time period. Even if we were in a position to suppose that ‘the Big Bang model ... provides a consistent and empirically sound construction of how the universe began’, it is not obvious that we would be well-placed to argue that our universe has an absolute beginning in the Big Bang: that would depend upon the view that we take about the controversial question of the extendibility of the metric through the initial singularity. But, once it is admitted both that the Big Bang model is not ‘a consistent and empirically sound construction of how the universe began’ and that we do not have any replacement theory that is both consistent and empirically sound, we lose any evidence-based grounds that we might have had for making judgments about what, if anything, is prior to the time period in which quantum influences would have been important for the global features of the universe.

Although this discussion has been very brief, its import is clear: Craig’s empirical argument against Infinite Regress is very weak. While it can hardly be said that considerations about the Big Bang provide us with strong reasons to accept Infinite Regress, it is no less clear that considerations about the Big Bang do not currently provide us with good reasons to deny Infinite Regress. If reality has parts ‘on the other side of the Big Bang’, then that might be reasonably strong reason for thinking that Infinite Regress is true: if our universe is separated from another universe by a Big Bang, then why shouldn’t that universe, in turn, be separated from yet another universe by a Big Bang, and so on? But, as we have already noted, we currently have no good empirical grounds for making a determination one way or the other on the question whether reality does have parts ‘on the other side of the Big Bang’.

Given that Craig’s empirical argument establishes neither that Infinite Regress is ruled out by empirical considerations nor that Infinite Regress is rendered improbable by empirical considerations, and given that Craig’s philosophical arguments establish neither that Infinite Regress is ruled out by philosophical considerations nor that Infinite Regress is rendered improbable by philosophical considerations, we should conclude that, for all that Craig argues, Infinite Regress remains an undefeated hypothesis about the overall shape of reality. When we come to compare standing hypotheses about the overall shape of reality, Infinite Regress should be invited to the contest.

3

Craig has provided much less extensive discussion of Contingent Initial Boundary than he has of Infinite Regress. From his earliest writings, Craig has insisted that it is just obvious that Contingent Initial Boundary is false.

[The claim that Contingent Initial Boundary is false] is so obvious ... that probably no one in his right mind really believes it to be false. ... The idea that anything ... could pop into existence uncaused is so repugnant that most thinkers intuitively recognise that it is ... incapable of sincere affirmation. ... [Contingent Initial Boundary] is too incredible to be believed. ... To attack Maimonides and Aquinas on this point seems to colour one's intellectual integrity. ... A sincere denial of this axiom is well-nigh impossible. ... [Contingent Initial Boundary] seems intuitively to be really, if not logically, absurd. (*The Kalām Cosmological Argument*, 1979, 141-5)

Given the vehemence of Craig's rhetoric, one might well suspect that he is not in possession of good arguments against Contingent Initial Boundary. This suspicion is borne out by an examination of his writings on the topic. In this section, I shall briefly examine four types of arguments that Craig has advanced against Contingent Initial Boundary; and, of course, I shall argue that none of them is in the least bit persuasive.

1. *Generalisation from experience*: The first type of argument that Craig advocates appeals to the universality of causation. Given that, in our experience, everything that comes into existence has a cause of its coming into existence, we have overwhelming reason to think that every contingently existing thing has a cause of its existence—whence it surely follows that Contingent Initial Boundary is false.

Setting aside any quibbles that one might make about the suggestion that it is simply given in our experience that everything that we meet in experience has a cause of its coming into existence, the obvious response to this argument is that it clearly involves an inappropriate over-generalisation. On the basis of experience, the *most* that we are entitled to infer is that all of the kinds of things that we meet in experience have causes of their coming into existence. But it would be a huge and unjustified inductive leap to suppose that our experience supports the inference that even kinds of things that we could not possibly encounter in experience have causes of their coming into existence. Since the Initial Boundary of reality—if, indeed, reality does have an initial boundary—is plainly a kind of thing that we could not possibly encounter in experience, our experience tells us nothing at all about whether or not it has a cause.

2. *Against Humean Conceivability*: The second type of argument that Craig advocates is really an attempt to undermine the theoretical view that it is *possible* for reality to have a contingently existing initial boundary. If we suppose that the kind of possibility that is at issue is something like clear and consistent conceivability, then it seems plausible to claim that it is possible that reality has a contingently existing initial boundary. However, against this claim, Craig says that, at most, clear and consistent conceivability establishes that Contingent Initial Boundary is not ruled out on analytic or logical grounds. But, on Craig's view, the fact that we can imagine that the universe has a contingently existing initial boundary does not establish that this is a 'real' or 'genuine' possibility. Moreover, on Craig's view, even though Contingent Initial Boundary is not ruled out on analytic or logical grounds, it is still in order to insist that this hypothesis is 'absurd': 'for the universe to spring into existence uncaused out of nothing seems intuitively to be really, if not logically, absurd' (*The Kalam Cosmological Argument*, 1979, 145)

As we have already had cause to mention, many philosophers are prepared to accept the suggestion that there is a kind of metaphysical possibility whose nature is cognitively opaque to us. However, in supposing that there is a kind of metaphysical possibility whose nature is cognitively opaque to us, we are supposing, precisely, that this kind of possibility is not adequately measured by conceivability, or imagination, or intuition, or the like. So, talk about this kind of metaphysical possibility is just not properly paired with talk about ‘absurdity’, ‘unintuitiveness’, and the like. We may have good theoretical grounds—based on overall judgments about simplicity, explanatory scope, fit with data, and so forth—for accepting certain claims about metaphysical possibilities and metaphysical impossibilities: but those grounds are not adequately captured in talk about ‘what seems intuitively to be really absurd’ and the like. Once again, there is nothing in Craig’s animadversions against Humean conceivability that rules out the invitation of Contingent Initial Boundary to a contest between serious theories about the overall shape of reality.

3. *Categorical Epistemology*: The third type of argument that Craig advocates is based on a neo-Kantian conception of the operation of an *a priori* category of causality. If we suppose that our ability to make causal judgments draws upon an innate mental capacity that reflects the structure of reality, then—on Craig’s view—we have good reason to conclude that reality does not have a contingently existing initial boundary.

Even if we accept the controversial neo-Kantian assumptions that form the basis for this argument, it is clear that we have been given no good reason to suppose that reality does not have a contingently existing initial boundary. Since the initial boundary of reality is not something that could be given to us in experience, there is no reason to suppose that our *a priori* categories yield accurate judgments about *it*, even if we do suppose that our *a priori* categories yield accurate judgments about the part of reality that we inhabit. While this point could be buttressed by considerations about the evolutionary origins of our ‘*a priori* categories’, no further investigation is needed to underline the point that the argument that Craig advances here is entirely unconvincing.

4. *The ‘Edwards-Prior’ Argument*: The final argument that Craig advocates draws on the writings of Jonathan Edwards and Arthur Prior: ‘If something can come into being uncaused out of nothing, then it is inexplicable why anything and everything cannot or does not do so. Hence it is impossible for anything to come into existence without a cause’ (‘Graham Oppy on the *Kalām* Cosmological Argument’, 1993, 7).

Here is one way of seeing why this argument is entirely unpersuasive. Among possible existents, we can identify at least the following two kinds: those that can exist only if there is no part of reality that is prior to them under the privileged relation, and those that can exist only if there is a part of reality that is prior to them under the privileged relation. If we suppose that all possible existents fall into one or other of these two kinds, then we have what Craig claims it is impossible to have: an explanation of how it is that the initial boundary of reality is the only eligible part of reality that is not preceded by some other eligible part of reality under the privileged external relation, even though all parts of reality exist contingently.

Perhaps this argument can be clarified by applying it to a particular case. Suppose that we think that reality is exhausted by an instance of a standard general relativistic universe that originates in an initial singularity. Then, for all that Craig has argued to the contrary, we are free to suppose that, apart from the initial singularity, every part of reality is brought into existence by a prior part of reality; and we are also free to suppose that it is impossible for there to be some part of reality other than the initial singularity that is not brought into existence by some prior part of reality. There is nothing in considerations about the impossibility of objects popping into existence within reality, where no such objects had previously existed within reality, that rules out the possibility that there is no cause of reality's coming into existence. (I provide a much expanded version of the argument developed in this section in 'Uncaused Existence', forthcoming in *Faith and Philosophy*.)

Given the weakness of Craig's arguments against the hypothesis that the initial boundary of reality is a contingent existent—and given the absence of any more compelling arguments in favour of this claim—we have more than sufficient reason to insist that Contingent Initial Boundary should be invited to any contest between serious theories about the overall shape of reality.

4

If our argument to this point is good, then we have established that Craig has failed to show that Infinite Regress and Contingent Initial Boundary are defeated theories about the overall shape of reality. The various arguments that Craig produces do not establish that it is unnecessary to include these theories in serious discussion about the overall shape of reality. However, if this is right, then, as I shall now go on to argue, we actually have to hand the outline of a serious argument *against* theism, at least insofar as we consider only the data that is appealed to in cosmological arguments.

Suppose we agree that the three most plausible contenders as accounts of the overall shape of reality are Infinite Regress, Contingent Initial Boundary, and Necessary Initial Boundary.

If Infinite Regress is correct, then it seems that we have reason to prefer naturalism to theism, since it would be odd—if not impossible—to identify any eligible part of Infinite Regress with the God of theism. Perhaps we might try identifying some initial segment of reality—i.e. some segment with infinitely many eligible parts connected by the privileged external relation—with God. But, given that we are already supposing that reality has the structure of Infinite Regress, it seems that this identification brings with it a train of expensive ideological commitments that buy no additional explanatory power (at least insofar as we are only focussing on the mere existence of reality).

Similarly, if Contingent Initial Boundary is correct, then it seems that we have reason to prefer naturalism to theism, since there is no explanatory advantage—in connection with the mere existence of reality—that is obtained by supposing that the contingently existing initial boundary is a person. Once again, the identification of the contingently existing initial boundary with God brings with it a train of expensive ideological commitments that buy no additional explanatory power (at least insofar as we are only focussing on the mere existence of reality). Of course, this is the basis of

the traditional ‘Who made God’ objection to cosmological arguments, a question which makes eminent sense under the supposition that the initial boundary of reality is a contingent existent.

The remaining case is Necessary Initial Boundary. Here, again, it seems that we have reason to prefer naturalism to theism, since there is no explanatory advantage—in connection with the mere existence of reality—that is obtained by supposing that the necessarily existing initial boundary is a person. In this case, too, the identification of the necessarily existing initial boundary with God brings with it a train of expensive ideological commitments that buy no additional explanatory power (at least insofar as we are only focussing on the mere existence of reality). Perhaps, in this case, theists might be tempted to object that a necessarily existing person is intuitively more plausible than a necessarily existing non-person. But it seems clear to me that, insofar as we focus only on the considerations that are appealed to in cosmological arguments—e.g., insofar as we focus only on the mere existence of reality—this is manifestly untrue.

I conclude that, insofar as we focus only on the considerations appealed to in cosmological arguments—e.g. insofar as we focus only on the mere existence of reality—we have good reason to prefer naturalism to theism.

Naturally, I don’t say that we have here a compelling argument in favour of naturalism over theism. For all that has been argued here, it may be that, when we take *other* data into account—e.g. the data concerning the fine-tuning of the observable universe for life, or the data of religious experience, or the data of putative revelation, or the like—we will find that we have reason to prefer theism to naturalism.

On the other hand, of course, I *do* actually believe that, when naturalists take all of the other data into account, they still have reason to prefer naturalism to theism: but, as I have just insisted, there is nothing in the considerations that I have advanced here that supports this further claim. What I claim to have shown here—*contra* Craig—is just that, viewed in isolation, considerations about the overall shape of reality plausibly favour naturalism over theism.

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