Does The Universe Have A Cause?

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1. **Causal Reality**

Consider *causal reality*: the sum of everything that enters into causal relations. If something is a *cause*—i.e. something that is involved in the bringing about of effects—then it is part of causal reality. If something is an *effect*—i.e. something that is involved in what is brought about by causes—then it is part of causal reality. If the tip of the cue strikes the cue ball, and sends it flying down the table, the impact of the cue is one of the *causes* of the subsequent motion of the cue ball; but, if the tip of the cue strikes the cue ball, the motion of the cue is one of the *effects* of the motion of the arm of the person wielding the cue. The motion of the tip of the cue is part of causal reality as both cause and effect.

Does causal reality have a cause? No, obviously not. Causal reality is the entire network of causal items under the causal relation. A cause of causal reality would be an item that is not part of causal reality, and yet which is a cause of some items in causal reality. But causal reality is the sum of *everything* that enters into causal relations.

Could it be that there is some part of causal reality that causes itself and then is the ultimate cause of everything else in causal reality? No, obviously not. Nothing can be a cause of itself. Causes are causally prior to their effects. If I ask you 'What causes A?' and you answer 'A', either you are not being serious, or else you do not understand what it is to give a proper causal explanation. 'A because A' is always an explanatory solecism.

Could it be that there are circles of causes in causal reality? That is, could it be that one thing is one of the causes of a second thing, and that second thing is one of the causes of that third thing, and that third thing is one of the causes of the first thing? No, obviously not. It is a fundamental causal principle that, if one thing is a cause of a second thing, and that second thing is a cause of a third thing, then the first thing is a cause of the third thing. However, if there could be a circle of causes of the kind described just above, then it could be that there are things that are causes of themselves. But we have already seen that nothing can be a cause of itself.

Given that we are thinking about causal reality as a network of causes and effects, we can ask: how many uncaused causes are there in causal reality? At least in principle, there are three answers that might be given to this question: *zero*, *one*, and *more than one*.

If there are no uncaused causes in causal reality, then causal reality involves an *infinite regress* of causes and effects: for each cause in causal reality, there is a causally prior cause in causal reality. If there is one uncaused cause in causal reality, then causal reality has a *unique initial cause*: there is just one cause in causal reality that is a cause of other causes in causal reality, but that is not an effect of other causes in causal reality. And if there is more

than one uncaused cause in causal reality, then there is *popping into existence* in causal reality: causal interactions with causal inputs from *distinct* uncaused causes.

Could causal reality be an infinite regress of causes and effects? Perhaps. Certainly, there is nothing that we have so far assumed about causation that entails that causal reality is not an infinite regress of causes and effects. Some philosophers think that the hypothesis that causal reality involves an infinite regress of causes and effects can be ruled out *a priori*, i.e. independently of any input from science and experience. One very popular strategy is to argue that, if it were possible that causal reality is an infinite regress, then other scenarios which are demonstrably impossible would also be possible: e.g. hotels with infinitely many rooms, or diarists who have been planning their futures throughout an infinite past, or infinite assemblies of assassins who kill their victims without any of them firing a shot. I think that pursuit of this strategy is doomed to failure: even if it *is* impossible for there to be hotels with infinitely many rooms, or diarists who have been planning their futures throughout an infinite past, or infinite assemblies of assassins who kill their victims without any of them firing a shot, that simply does not decide the question whether it is impossible that causal reality involves an infinite regress of causes and effects.

Could there be hotels with infinitely many rooms, or diarists who have been planning their futures throughout an infinite past, or infinite assemblies of assassins who kill their victims without any of them firing a shot? I am inclined to think not. Here is why. I think that every possible world shares laws and initial history with the actual world, and differs from the actual world only as a result of the outplaying of objective chance. Perhaps unsurprisingly, I think that there *are* no hotels with infinitely many rooms, or diarists who have been planning their futures throughout an infinite past, or infinite assemblies of assassins. Moreover, I think that no matter how the objective chances play out, there is no way that the laws and some actual initial history generate hotels with infinitely many rooms, or diarists who have been planning their futures throughout an infinite past, or infinite assemblies of assassins. So these things are all outright impossible. Nonetheless, I take it to be an entirely open question whether causal reality is an infinite regress of causes and effects.

Could there be popping into existence? Perhaps; but I am inclined to think not. Given my austere view about what is possible, it should be easy to see why I say this. First up, it is not the case that things pop into existence: everything that we meet with in experience—and everything that is postulated in science—has a common causal ancestry. Moreover, no difference in the historical outplaying of objective chances could make a difference to common causal ancestry. We simply have no reason to suppose that there is more than one uncaused cause.

Could there be a unique initial cause? Perhaps. Given my views about modality, and given that I take it to be an open question whether causal reality is an infinite regress of causes and effects, it should not be surprising that I take it to be an open question whether causal reality contains a single uncaused cause that is a cause of everything else.

In sum: It is an open question whether causal reality contains uncaused causes. If causal reality does not contain uncaused causes, then causal reality consists of causes and effects in infinite regress. However, if causal reality includes uncaused causes, then it is an open question how many uncaused causes it contains. I think that the most plausible hypothesis is

that, if causal reality contains uncaused causes, then it contains exactly one uncaused cause; however, I would not bet my house on the truth of this hypothesis.

2. **Natural Reality**

The conclusions that were reached at the end of the preceding section paid no attention at all to the composition of causal reality. There are many and varied views about what *kinds* of causes are to be found in causal reality. In keeping with my austere views about what is possible, I hold an austere view about the kinds of causes to be found in causal reality: there are none but *natural* causes. Said differently: natural reality exhausts causal reality.

Here are two examples that illustrate the view. (1) Suppose that causal reality is exhausted by our universe, and that our universe is a standard big bang universe. In this case, the single uncaused cause is an initial part of our universe, or something that is associated with an initial part of our universe: 'the initial singularity'. (2) Suppose that causal reality is exhausted by an infinite ensemble of universes in a background de Sitter space, and that there is an infinite causal regress in that background state. In this case, there is no uncaused cause, and, in particular, our universe has causes of its coming into existence in that background de Sitter space.

What might competing view—views that deny that natural reality exhausts causal reality—look like? Here are two examples: (1) Natural reality is exhausted by our universe, which is a standard big bang universe, but God is the uncaused cause of the existence of our universe. (2) Natural reality is exhausted by an infinite ensemble of universes in a background de Sitter space in which there is an infinite causal regress, but God is the uncaused caused of the existence of that background de Sitter space. On the second view, while God is a cause of the existence of our universe, God is not the sole cause of the existence of our universe: there are causes of the existence of our universe in the background de Sitter space. However, on the second view, God is the sole cause of the existence of the background de Sitter space. And, on the first view, God is the sole cause of the existence of our universe.

There is currently no widespread consensus among expert cosmologists about whether we live in something like a standard big bang universe or whether our universe is part of an infinite ensemble of universes in a background de Sitter space in which there is an infinite causal regress. Consequently, there is no widespread consensus among expert cosmologists about whether the existence of our universe has *natural* causes. If our universe is part of an infinite ensemble of universes in a background de Sitter space in which there is an infinite causal regress, then the existence of our universe has natural causes, whether or not that background de Sitter space has *non-natural* causes.

When people ask whether our universe has a cause, typically they are not interested in the question whether *our universe* has natural causes. Rather, when people ask whether our universe has a cause, typically what they are really interested in is whether *natural reality* has a cause. From this point forward, I shall take it that the question under consideration is whether natural reality has a cause. Given that our focus is whether natural reality has a

cause, we need not worry about the lack of widespread consensus among expert cosmologists about the *extent* of natural reality.

3. **Two Hypotheses Compared**

There are two views that we might take about natural reality: either natural reality exhausts causal reality, or there is more to causal reality than natural reality.

If natural reality exhausts causal reality, then either (a) there is an infinite regress of natural causes; or (b) there is a single uncaused natural cause; or (c) there are multiple uncaused natural causes.

If there is more to causal reality than natural reality, then either (d) there is an infinite regress of non-natural causes that is causally prior to natural reality; or (e) there is a single uncaused non-natural cause that is causally prior to natural reality; or (f) there are multiple uncaused non-natural causes that are causally prior to natural reality.

If there is more to causal reality than natural reality, then either (g) there is an infinite regress of natural causes; or (h) there is a single initial natural cause; or (i) there are multiple initial natural causes. (An *initial* natural cause is a natural cause that has causes but that does not have any natural causes.)

Is there reason to prefer one of the two views about natural reality to the other? Should we think that natural reality exhausts causal reality, or should we rather think that there is more to causal reality than natural reality? These are big questions. I do not propose to try to answers these questions here. Instead, I shall try to answer a more modest question. If we ignore all other considerations, do general considerations about causation favour the view that natural reality exhausts causal reality, or do they rather favour the view that there is more to causal reality than natural reality? That is: if the only thing that we had to go on was general considerations about causation, which of the two views should we prefer: that natural reality exhausts causal reality, or that there is more to causal reality than natural reality?

I shall argue that, if we ignore all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality. After I have given my argument for this conclusion, I shall explain its significance.

My argument for the conclusion that, ignoring all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality is an argument from cases. There is a limited number of live hypotheses about causal reality: the number of uncaused causes in causal reality is none, one, or more than one. On each of these hypotheses, ignoring all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality. So, no matter what is true about causal reality, ignoring all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality.

My argument for the conclusion that, ignoring all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality is an argument from comparative theoretical virtue. When we adjudicate between competing hypotheses, we

prefer more theoretically virtuous hypotheses to less theoretically virtuous hypotheses. In particular, when we adjudicate between competing hypotheses in cases where the relevant theoretical virtues are minimisation of theoretical commitments and maximisation of explanatory breadth and depth, we prefer those hypotheses that make the best trade-offs between minimisation of theoretical commitments and maximisation of explanatory breadth and depth. While there is no generally agreed algorithm for determining when one hypothesis makes a better trade-off than another between minimisation of theoretical commitments and maximisation of explanatory breadth and depth, there are clear cases: in particular, if two hypotheses have the same explanatory breadth and depth, but one hypothesis involves fewer theoretical commitments than a second, then the first hypothesis is better than the second. When it comes to the question whether, ignoring all other considerations, general considerations about causation favour the view that natural reality exhausts causal reality, the only relevant theoretical virtues are minimisation of theoretical commitments and maximisation of explanatory breadth and depth. I shall argue that, when we compare the hypothesis that natural reality exhausts causal reality with the hypothesis that there is more to causal reality than natural reality, taking only general considerations about causation into account, we find (a) that the hypothesis that natural reality exhausts causal reality has fewer theoretical commitments than the hypothesis that there is more to causal reality than natural reality, and (b) that there is no difference in the explanatory breadth and depth of these two hypotheses.

4. **Fewer Commitments**

The argument for the claim, that the hypothesis that natural reality exhausts causal reality has fewer theoretical commitments than the hypothesis that there is more to causal reality than natural reality, is straightforward. No matter which hypothesis we adopt about the number of uncaused causes in causal reality, the hypothesis that natural reality exhausts causal reality has fewer theoretical commitments than the hypothesis that there is more to causal reality than natural reality.

If there are no uncaused causes in causal reality, then, (i) on the hypothesis that natural reality exhausts causal reality, there are no uncaused natural causes; and (ii) on the hypothesis that there is more to causal reality than natural reality, either (1) there are no uncaused natural causes *and* there are non-natural causes, or (2) there are no uncaused non-natural causes *and* there are initial natural causes. However, it is obvious that the hypothesis that there are no uncaused natural causes *and* there are non-natural causes commits you to more than the hypothesis that there are no uncaused natural causes. And it is no less obvious that the hypothesis that there are no uncaused non-natural causes *and* there are initial natural causes commits you to more than the hypothesis that there are no uncaused natural causes. (In the second case, there is commitment to two different kinds of causes—natural and non-natural--and to two different kinds of natural causes—initial and non-initial; in the first case, there is commitment to only one kind of cause—natural.) So, if there are no uncaused causes in causal reality, it is less theoretically committing to suppose that natural reality exhausts causal reality than it is to suppose that there is more to causal reality than natural reality.

If there is exactly one uncaused cause in causal reality, then, (i) on the hypothesis that natural reality exhausts causal reality, there is exactly one uncaused natural cause; and (ii) on the hypothesis that there is more to causal reality than natural reality, there is exactly one uncaused non-natural cause. The hypothesis that there is exactly one uncaused non-natural cause incurs commitment to two different kinds of causes—natural and non-natural—whereas the hypothesis that there is exactly one uncaused natural cause incurs commitment to just one kind of cause—natural. Since both hypotheses are committed to exactly one uncaused cause, and since there are no other relevant differences between them, it is obvious that the hypothesis that there is exactly one uncaused non-natural cause involves more theoretical commitments than the hypothesis that there is exactly one uncaused natural cause. So, if there is exactly one uncaused cause in causal reality, it is less theoretically committing to suppose that natural reality exhausts causal reality than it is to suppose that there is more to causal reality than to natural reality.

If there is more than one uncaused cause in causal reality, then (i) on the hypothesis that natural reality exhausts causal reality, there is more than one uncaused natural cause; and (ii) on the hypothesis that there is more to causal reality than natural reality, either (1) there is more than one uncaused non-natural cause and there are no uncaused natural causes; or (2) there is more than one uncaused non-natural cause and there is exactly one uncaused natural cause; or (3) there is more than one uncaused non-natural cause and there is more than one uncaused natural cause; or (4) there is exactly one uncaused non-natural cause and there is more than one uncaused natural cause; or (5) there are no uncaused non-natural causes and there is more than one uncaused natural cause. Sparing the reader the detailed argument by cases, it is obvious that, if there is more than one uncaused cause in causal reality, it is less theoretically committing to suppose that natural reality exhausts causal reality than it is to suppose that there is more to causal reality than to natural reality.

So, putting everything together: no matter how many uncaused causes there are in causal reality—zero, one, or more than one—it is less theoretically committing to suppose that natural reality exhausts causal reality than it is to suppose that there is more to causal reality than natural reality. But, of course, it must be that either there is zero, or one, or more than one uncaused cause in causal reality. So we can conclude outright that it is less theoretically committing to suppose that natural reality exhausts causal reality than it is to suppose that there is more to causal reality than natural reality.

5. **Equal Explanatory Breadth and Depth**

The argument for the claim that, given that we restrict our attention to general causal considerations and ignore all other relevant considerations, there is no difference in explanatory breadth and depth between the hypothesis that natural reality exhausts causal reality and the hypothesis that there is more to causal reality than natural reality, is also relatively straightforward.

In assessing the explanatory breadth and depth of these hypotheses for general causal considerations, setting all other considerations aside, we need to look at the answers that they provide to general causal questions: Why is there anything at all? Why is there something

rather than nothing? Etc. I shall argue that, no matter which hypothesis we adopt about the number of uncaused causes in causal reality, the hypothesis that natural reality exhausts causal reality provides answers to these questions that are just as good as the answers that we get on the hypothesis that there is more to causal reality than natural reality.

If there are no uncaused causes in causal reality, then (i) on the hypothesis that natural reality exhausts causal reality, the explanation for there being something rather than nothing lies in an infinite regress of natural causes; and (ii) on the hypothesis that there is more to causal reality than natural reality, either (a) the explanation for there being something rather than nothing lies is an infinite regress of non-natural causes, or (b) the explanation for there being something rather than nothing lies in an infinite regress of natural and non-natural causes. Given that there are no uncaused causes in causal reality, to whatever extent an infinite regress of causes can explain why there is something rather than nothing, we get an equally good explanation if we suppose that there is an infinite regress of natural causes as we do if we either suppose that there is an infinite regress of non-natural causes or else suppose that there is an infinite regress of natural and non-natural causes.

If there is exactly one uncaused cause in causal reality, then (i) on the hypothesis that natural reality exhausts causal reality, the explanation for there being something rather than nothing lies in the uncaused natural cause; and (ii) on the hypothesis that there is more to causal reality than natural reality, the explanation for there being something rather than nothing lies in the uncaused non-natural cause. Given that there is exactly one uncaused cause in causal reality, to whatever extent there being exactly one uncaused cause explains why there is something rather than nothing, we get an equally good explanation if we suppose that there is exactly one uncaused natural cause as we do if we suppose that there is exactly one uncaused non-natural cause.

If there is more than one uncaused cause in causal reality, then (i) on the hypothesis that natural reality exhausts causal reality, the explanation for there being something rather than nothing lies in the several uncaused natural causes; and (ii) on the hypothesis that there is more to causal reality than natural reality, the explanation for there being something rather than nothing lies in the several uncaused causes, at least some of which are uncaused non-natural causes. Given that there is more than one uncaused cause in casual reality, to whatever extent there being more than one uncaused cause in causal reality explains why there is something rather than nothing, we get an equally good explanation if we suppose that there are several uncaused natural causes as we do if we suppose that that are several uncaused causes at least some of which are uncaused non-natural causes.

Putting it all together: no matter how many uncaused causes there are in causal reality—zero, one, or many—we get equally good explanations of why there is something rather than nothing if we suppose that natural reality exhausts causal reality as we do if we suppose that there is more to causal reality than natural reality. Moreover, the argument that we have given in connection with explanation of why there is something rather than nothing extends in an obvious way to other general causal considerations: no matter how many uncaused causes there are in causal reality—zero, one, or more than one—we get equally good explanations of any general causal considerations if we suppose that natural reality exhausts causal reality as we do if we suppose that there is more to causal reality than natural reality.

6. **Modal Considerations**

I anticipate that some may question the conclusion that we get equally good explanations of any general causal considerations if we suppose that natural reality exhausts causal reality as we do if we suppose that there is more to causal reality than natural reality. For example, some may say that, if there is exactly one uncaused cause in causal reality, then that uncaused cause is a necessarily existing God; and they may add that a necessarily existing God provides a better explanation of why there is something rather than nothing than is provided by a natural 'initial singularity'.

Return to consideration of causal reality. There are two views that one might take about the modal status of causal reality. One might think that causal reality is everywhere contingent; or one might think that causal reality is not everywhere contingent.

If we think that causal reality is everywhere contingent, then it is obvious that there is no further explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality. So we can set this case to one side.

Suppose that causal reality is not everywhere entirely contingent. If causal reality is not everywhere entirely contingent, it must be somewhere contingent. Why? Because if causal reality is everywhere necessary, then nothing in causal reality depends upon anything else. Why? Because whatever is necessary obtains no matter what. But whatever obtains no matter what obtains independently of everything else. Since effects depend upon their causes, nothing that enters into causal relations as effects is necessary. So, if everything is necessary, then there is no causation.

Suppose, then, that causal reality is somewhere contingent, but not everywhere contingent. We argue by cases that, even so, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality. As before, the number of uncaused causes in casual reality is none, or one, or more than one.

If there are no uncaused causes in causal reality, and if causal reality is not everywhere contingent, then, although there is an infinite regress of causes, every merely possible world shares some history with the actual world, and has its history diverge from the history of the actual world only because chances play out differently. In this case, what is necessary is that any pair of possible worlds share some history. On the hypothesis that natural reality exhausts causal reality, a reason why there is something rather than nothing is that it had to be that there is some part of the history of the actual world. And, on the hypothesis that there is more to causal reality than natural reality, a reason why there is something rather than nothing is that it had to be that there is some part of the history of the actual world. It is obvious to inspection that, on the hypothesis that there are no uncaused causes in causal reality and causal reality is not everywhere contingent, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more

to causal reality than natural reality, when it comes to the explanation of why there is something rather than nothing.

If there is exactly one uncaused cause in causal reality, and if causal reality is not everywhere contingent, then the uncaused cause is not entirely contingent: either it is necessary, or there is some part or aspect of it that is necessary. On the hypothesis that natural reality exhausts causal reality, either the initial state of causal reality is necessary, or there is some part or aspect of the initial causal state—'the initial singularity'—that is necessary. Either way, on the hypothesis that natural reality exhausts causal reality, a reason why there is something rather than nothing is either that it had to be that there is an initial causal state, or that it had to be that there is this particular initial causal state, or that it had to be that there is this particular part or aspect of the initial causal state. And, on the hypothesis that there is more to causal reality than natural reality, either the initial state of causal reality is necessary, or there is some part or aspect of the initial causal state—'God'—that is necessary. Either way, on the hypothesis that there is more to causal reality than natural reality, a reason why there is something rather than nothing is either that it had to be that there is an initial causal state, or that it had to be that there is this particular initial causal state, or that it had to be that there is this particular part or aspect of the initial causal state. Again, it is obvious to inspection that, on the hypothesis that there is exactly one uncaused cause in causal reality and causal reality is not everywhere contingent, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality, when it comes to the explanation of why there is something rather than nothing.

If there is more than one uncaused cause in causal reality, and if causal reality is not everywhere contingent, then at least one of those uncaused causes is not entirely contingent: at least one of those uncaused causes is either necessary, or has some part or aspect that is necessary. By the same line of reasoning as in the previous case, we quickly reach the conclusion that, on the hypothesis that there is more than one uncaused cause in causal reality and causal reality is not everywhere contingent, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality, when it comes to the explanation of why there is something rather than nothing.

Putting it all together: no matter how many uncaused causes there are in causal reality—zero, one, or more than one—and no matter whether causal reality is everywhere contingent or only somewhere contingent, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality, when it comes to the explanation of why there is something rather than nothing. Moreover, the argument that we have given in connection with explanation of why there is something rather than nothing extends in an obvious way to other general causal considerations: no matter how many uncaused causes there are in causal reality—zero, one, or more than one—and no matter whether causal reality is everywhere contingent or only somewhere contingent, there is no explanatory advantage that accrues either to the view that natural reality exhausts causal reality or to the view that there is more to causal reality than natural reality, so long as we restrict our attention to general causal considerations.

7. **Necessary Beings**

I anticipate that some may question the conclusion that we get equally good explanations of general causal and modal considerations if we suppose that natural reality exhausts causal reality as we do if we suppose that there is more to causal reality than natural reality, at least so long as we restrict our attention to general causal considerations. In particular, I expect that some will say that there is less theoretical cost in the postulation of a necessarily existent God than there is in the postulation of a necessarily existent 'initial singularity'.

According to me, postulation of ontological necessities is theoretical rock bottom: ontological necessities are always theoretical primitives. If that is right, then it is very hard to see how there *could* be a greater cost involved in postulating a necessarily existent 'initial singularity' than there is in postulating a necessarily existent god, given that we are restricting our attention to general causal considerations. When we reckon the costs, the property of existing necessarily is attributed to an item on each balance sheet. What could possibly justify the claim that it comes more cheaply in one case than in the other?

Some may object that, while there is a tradition that supposes that God is necessarily existent, there is no tradition that supposes that the 'initial singularity' is necessarily existent. But this is irrelevant. We are interested in weighing the virtues of competing theories. The alleged novelty of the claim that the 'initial singularity' is necessarily existent cuts no ice at all in the assessment of its virtues. If we restrict our attention to general causal considerations, the hypothesis that there is a necessarily existent 'initial singularity' trumps the hypothesis that there is a necessarily existent creator God.