

THE DEPENDENCE RESPONSE AND EXPLANATORY LOOPS

Forthcoming in Faith and Philosophy

Andrew Law

Abstract: There is an old and powerful argument for the claim that divine foreknowledge is incompatible with the freedom to do otherwise. A recent response to this argument, sometimes called the “dependence response,” centers around the claim that God’s relevant past beliefs depend on the relevant agent’s current or future behavior in a certain way. This paper offers a new argument for the dependence response, one that revolves around different cases of time travel. Somewhat serendipitously, the argument also paves the way for a new reply to a compelling objection to the dependence response, the challenge from prepunishment. But perhaps not so serendipitously, the argument also renders the dependence response incompatible with certain views of providence.

Suppose 1,000 years ago, God believed that you would read this paper today. Being essentially omniscient, God’s past belief entails that you read this paper today. So, if you could have done otherwise, then you could have performed an action that would have required the past to be different, namely, one of God’s past beliefs. But no agent

can perform an action that would have required the past to be different – the past is “fixed.” Hence, if 1,000 years ago, God believed that you would read this paper today, then you couldn’t have done otherwise: divine foreknowledge and freedom are incompatible.¹

There’s a relatively new response to this venerable argument, one we might call the “dependence response.” The central idea is that God’s past belief that you would read this paper today “depends” (in a certain way) on your reading this paper today – that God had that past belief *because* you are reading this paper today – and, thus, God’s past belief is no threat to your freedom. More precisely, I’ll understand the dependence response as being made up of two claims.² First, consider the premise in the argument above that no agent can perform an action that would have required the past to be different – that the past is “fixed.” This premise is often called the principle of the Fixity of the Past (FP henceforth). The first claim of the dependence response is that FP ought to be rejected in favor of, or at least seen as derivative of, an alternative principle, what I will be calling the Principle of the Fixity of the Independent (FI henceforth). FI, as I’ll understand it, claims that it is not the past *per se* that is fixed for the agent, but rather any part of the world that is *in no way explained* by the agent’s present choice(s).

Somewhat more formally, I’ll understand FI as follows:

FI: Agent *S* can perform action *X* at time *t* (in world *w*) only if there is a world, *w'*, such that all of the facts in *w* that are distinct from and in no

way explained by *S*'s choice(s) at *t* hold in *w'* and yet *S* performs *X* at *t* in *w'*.³

A couple of notes on FI as formulated. First, there is some debate over what kind of explanation FI should focus on,⁴ but for our purposes it will be most convenient to use a very broad notion, one that includes causal/nomic, metaphysical, conceptual, and perhaps even mathematical/logical notions of explanation.⁵ And while we'll primarily be concerned with *causal* explanation in what follows, I do not mean to restrict FI to solely this kind of explanation. (Indeed, this would be a mistake in my view.) Second, when considering an agent's choice(s) at *t*, we need not suppose the agent *freely* makes the choice(s) in question – that is, we need not suppose that the agent was free to *choose otherwise*. We can agree that you “chose” to read this paper, in some sense, regardless of whether God foreknew you would; the question is whether you could have chosen otherwise if God foreknew you would. And whereas FP claims that, in evaluating whether you could have chosen otherwise, we need to hold fixed all of those facts that obtain prior to your actual choice, FI instead claims that we need only hold fixed those facts that are in no way explained by your actual choice.

Now sure enough, the vast majority of the past is in no way explained by any agent's present choice(s), and so FI implies that FP is at least *approximately* correct. But if there is some exception – if there is some part of the past that is explained by the agent's present choice(s) – then the dependence response claims, *contra* FP, that the relevant

part of the past is not necessarily fixed for the agent. And this is where the second claim of the dependence response comes in, namely, that God's relevant past beliefs are such an exception: your choosing to read this paper today *explains* the fact that, 1,000 years ago, God believed you would read this paper today. If so, then God's relevant past beliefs are not necessarily fixed for you and divine foreknowledge is not necessarily a threat to your freedom.

In this paper, I offer a new argument for the first claim of the dependence response, that FP ought to be rejected in favor of, or at least seen as derivative of, FI. The argument centers around certain cases of *time travel* and an augmentation of FI. Moreover, the argument, particularly the augmentation of FI, has two significant upshots. First, it makes way for a new reply to one of the most important challenges to the dependence response, the challenge from prepunishment.⁶ Second, it seems to render the dependence response inconsistent with certain views of providence, views that defenders of the dependence response might otherwise be sympathetic toward. I start with the argument for, and augmentation of, FI.

Time Travel and FI

While I am not the first to use time travel cases to argue for FI, it will be helpful to see how my argument differs from those before me. For instance, Philip Swenson has given such an argument, writing:

Imagine that you have come to believe that you are sitting in a working time machine... You believe that the machine is programmed so that, if you push the button in front of you, then you will travel to the year 1492. Furthermore, you believe that the past and the laws entail that you will travel to 1492 if and only if you push the button.⁷

Suppose you push the button and travel to 1492. Swenson claims that, intuitively, at the moment of your decision, you can both push and refrain from pushing the button. But it's hard to see how FP could accommodate this intuition given that your appearance in 1492 is past and, hence, fixed according to FP. By comparison, FI can accommodate this intuition because your appearance in 1492 is partly explained by your pushing the button and, hence, not (necessarily) fixed. That seems like a point in favor of FI.

I find Swenson's argument unconvincing, though, because there seems to be an adequate error theory regarding our intuitions here. The way Swenson describes the case, you do not know whether you appear in 1492 at the time of your decision and, thus, it is a genuine epistemic possibility that you refrain from pushing the button. Given that we often conflate epistemic possibilities with metaphysical ones, you might be tempted to think that you can refrain. But epistemic possibilities are not always metaphysical possibilities. In fact, if we redescribe the case in such a way that it is *not* an epistemic possibility for you to refrain from pushing the button, it is no longer clear that you are free to refrain. For instance, suppose that before the moment of your decision,

you come across an old journal from 1492 detailing the arrival of a mysterious figure who claimed to be from the future, one who is described as having your name and exact appearance. The figure even made many correct and striking predictions about the future, some particular to your life. (e.g. The names of your parents, your birth place, your best friend's name from the third grade, etc.) You become convinced that this mysterious figure was you.

Once you become convinced of this, is it still so obvious that you are free to refrain from pushing the button? The intuition seems to evaporate, or so the advocate of FP can claim. If so, then it would seem that Swenson's case is only compelling because we mistakenly conflate an epistemic possibility with a metaphysical one. Once the epistemic possibility is taken away, it is unclear whether the metaphysical possibility was there to begin with.

The argument from time travel I wish to advance is importantly different. Here is the argument in a nutshell. We can distinguish between two types of (backwards) time travel cases: cases where the time traveler is caught in an explanatory loop and cases where the time traveler isn't. Our intuitions about what the time traveler can and can't do varies across these different cases, or so I claim. And while FI, or something like it, can explain this difference in intuition, FP cannot. Moreover, and in contrast to Swenson's argument, there is no obvious error theory to explain away the difference.

Let's start with a case of a time traveler caught in an explanatory loop. Suppose Bill stumbles upon some plans for a time machine in his family's attic and uses them to build a time machine in 2020. He then travels back to 1900, gives his great-great grandfather the plans, but then dies unexpectedly shortly thereafter. His great-great grandfather puts the plans in the attic, where he eventually forgets about them. Years later, in 2020, (young) Bill stumbles upon the plans, uses them to build his time machine, travels back to 1900, and so on and so forth.

Now ask yourself: just before he pushes the button on his time machine in 2020, is Bill free to refrain from doing so? For many, especially those sympathetic to FP, it is quite intuitive that he is not.⁸ After all, if he were to refrain, the past would be significantly different, maybe even contradictory. (Where would he have gotten the plans from? How would he have had access to a time machine?) And while FP seems to get the right result here, it looks as if FI doesn't. The fact that Bill appeared in 1900 is partly explained by his pushing the button in 2020 which, according to FI, means his appearance in 1900 is not (necessarily) fixed for him in 2020. FI therefore gives us no reason to think he cannot refrain from pushing the button.

Fortunately, there is a fairly straightforward way of amending FI to accommodate this intuition. FI claims that if a fact, F , is not explained by the agent's present choice(s), then F is fixed for the agent. But consider a related claim: if a fact, F , partly explains the agent's present choice(s), then F is fixed for the agent.⁹ This claim,

although importantly distinct from FI, also seems to enjoy a good amount of intuitive appeal. For example, if part of the explanation for why you remained seated was because you were strapped to the chair, it would seem illicit to not hold that fact fixed in determining whether you could have stood up.

It's worth elaborating on this point. Consider again the claim above but restricted to causal explanation: if a fact, *F*, partly *causally explains* the agent's present choice(s), then *F* is fixed for the agent. There is good reason to think that those sympathetic to FP ought to accept this principle as well. Michael Rea, advancing something quite similar to this principle, offers the following:

It is notoriously difficult to say what exactly it is for an event to be part of the fixed past; but there seems to be general agreement that, at any given time, the fixed past includes every event whose effects lie in the past or present. If an event has left its mark on the world, it is part of the fixed past.¹⁰

If Rea is right, then those events (or facts) which "leave their mark" on an agent's present choice(s) are part of the fixed past – those who accept FP ought to insist that such events (or facts) are fixed. Not only, then, is it somewhat intuitive that those facts which causally explain the agent's present choice(s) are fixed for the agent, but those sympathetic to FP ought to be willing to grant as much as well, even in time travel cases

where the temporal relation between such facts and the agent's choice(s) gets complicated. And while Rea's comments are about causation in particular, it is tempting to generalize them to more kinds of explanation: that at any given time, the fixed past includes every (past) fact whose "effects" – whether they be *causal* effects in particular or not – lie in the past or present. (I will proceed as if we can generalize Rea's comments to non-causal explanatory relations, but we strictly speaking don't need to in what follows.)

So instead of merely holding fixed those facts which *aren't* explained by the agent's choice(s), we might also want to hold fixed those facts which *explain* the agent's choice(s), especially if we are sympathetic to FP to begin with. With this additional principle, FI can be augmented as follows:

FI+: Agent *S* can perform action *X* at time *t* (in world *w*) only if there is a world, *w'*, such that (i) all of the facts in *w* that are distinct from and in no way explained by *S*'s choice(s) at *t* hold in *w'*, (ii) all of the facts in *w* that at least partly explain *S*'s choice(s) at *t* also hold in *w'*, and yet (iii) *S* performs *X* at *t* in *w'*.¹¹

The only difference between FI and FI+ is the addition of clause (ii), which says that those facts which explain the agent's behavior are also fixed. But by adding clause (ii), FI+ seems to imply that time travelers caught in explanatory loops, like Bill, are not free.

Bill's appearance in 1900 explains why his great-great grandfather received the plans, which explains why they were put in the attic, which explains why Bill stumbled upon them, built a time machine, and pushed the button. That is, plausibly, Bill's appearance in 1900 partly explains (at least ancestrally) his pushing the button on the time machine in 2020. So clause (ii) insists that his appearance in 1900 is fixed for him at the time of his pressing the button. Given that his appearance entails his pressing the button, FI+ seems to imply that Bill is not free to refrain from pressing the button.¹²

Now I've already suggested that clause (ii) is both intuitively plausible and consonant with a general sympathy toward FP. But it's also important to notice that FI+ is just barely stronger than FI. In the vast majority of cases, the facts picked out by clause (i) include those picked out by clause (ii). That is, in the vast majority of cases, if fact *F* explains agent *S*'s choice(s) at time *t*, then *S*'s choice(s) at time *t* does not explain fact *F*. So, FI+ is not only a plausible extension of FI, but a minimal one as well – it is only bizarre cases where clause (ii) does any additional work. That's a further reason for the dependence theorist to feel comfortable accepting FI+.

So it may be fairly intuitive that time travelers caught in explanatory loops are not free, at least for those drawn to FP. Fortunately, FI+ can accommodate this intuition. But now consider a case of a time traveler not caught in an explanatory loop.¹³ Suppose Ted stumbles upon some plans for a time machine in his family's attic as well, but these plans came about in a more ordinary way: his great-great grandfather developed the

plans on his own, put them in the attic, but eventually forgot about them. Ted uses the plans to build a time machine in 2020 and then travels not just to a distant time, but a distant place as well: he travels to the year 1900 but on a barren planet, galaxies away. Upon arrival, he and the time machine are immediately annihilated, leaving no trace of his (not-so-excellent) adventure.

In this case, can Ted refrain from pushing the button on his time machine? I see no obvious reason to think not. If he hadn't pushed the button, he still would have had access to his great-great grandfather's plans, he still would have had the same personal past up until that moment, the history of the world (until 2020) would not have been significantly different, and no obvious contradiction would rear its head. His brief presence in 1900 may ensure that he *will* press the button. But, at the very least, it is not so obvious that he *must* press the button.

FI+ is compatible with the intuition that Ted is free in this case. His pushing the button plainly explains his brief appearance in the past, so clause (i) of FI+ does not insist that his appearance is fixed. And in contrast to Bill's case, his appearance in 1900 does not seem to explain (even ancestrally) his pushing the button in 2020. So, clause (ii) does not insist that his appearance is fixed either. Thus, FI+ does not imply that his appearance in 1900 is fixed and, hence, is compatible with him being free to refrain from pressing the button in 2020.

More generally, there seems to be an asymmetry here. In cases where the time traveler is caught in an explanatory loop, it may be fairly intuitive that the time traveler isn't free; in cases where the time traveler is not caught in an explanatory loop, it isn't so intuitive – if anything, it's intuitive that the time traveler *is* free. What explains this asymmetry? It's hard to see how FP could explain this, or if it is even compatible with it. In both kinds of cases, the time traveler's appearance is part of the past. What principled reason, within the spirit of FP, could there be for treating the two cases differently?¹⁴ Moreover, there is no obvious error theory for our intuitions here. For instance, the error theory I gave for Swenson's case, about conflating an epistemic possibility with a metaphysical possibility, certainly won't do since Bill's and Ted's epistemic possibilities seem to be exactly the same. So, absent some forthcoming error theory, FP seems deficient here.

However, FI+ seems perfectly suited to explain the difference between these two kinds of cases. Given that the difference between the two types of cases is precisely a difference in *explanatory* structure, it is unsurprising that a principle like FI+, which focuses on explanatory relations rather than temporal ones, could capture the asymmetry. FI+ has the advantage.

To be clear, I do not think this argument gives us anything like a conclusive reason to prefer FI+ over FP. For one, the argument seems to require taking cases of backward time travel seriously – for some, that alone will be too much. For another, I

haven't established that there is *no* error theory for our intuitions here. I confess that I would be surprised if some adequate error theory were presented, but I cannot rule out the possibility completely. Thus, I only claim that this argument gives us *some* reason to prefer FI+ over FP. However, there are at least two more features of the argument, particularly FI+, that will be of interest to those sympathetic to the dependence response. First, as a boon, FI+ opens up a new reply to a powerful objection to the dependence response. Second, and perhaps as a drawback, FI+ seems to rule out certain views of providence. We'll start with the former and conclude with the latter.

The Challenge of Prepunishment

Both Patrick Todd as well as John M. Fischer and Patrick Todd provide a compelling challenge to the dependence response, one centered around *divine prepunishment*.¹⁵ I'll focus on Todd's presentation, as the challenge is a bit more developed there, but what I have to say applies just as well to Fischer's and Todd's presentation. Todd writes:

Suppose that ten days ago God prepunished Jones for sitting at *t*. And suppose Jones's punishment took the following form: spending ten hours in his local jail. So ten days ago Jones spent ten hours in his local jail. And he was punished by God in this way because he will sit at *t*.¹⁶

At time *t*, is Jones free to refrain from sitting? Todd says it is fairly clear that Jones is not. But the dependence response doesn't deliver this result. After all, Jones's being in

jail ten days ago seems to be partly explained by his sitting at t and, hence, his being in jail is not necessarily fixed for him at t according to the dependence response. And if it is not necessarily fixed, then there is no reason to think that Jones must sit at t . By comparison, Jones's being in jail ten days ago is plainly part of the past relative to t and, thus, fixed for him according to FP. So, given that his being in jail entails his sitting at t , FP seems to get the right result that Jones is not free.

Todd puts the point more generally like this:

In whatever sense it might be true that whether Jones spent ten hours in jail ten days ago 'depends on' whether he sits at t , this sense is *obviously irrelevant* to the question of what is within Jones's control at t .¹⁷

If Todd is right, then the dependence response is just about doomed. After all, the sense in which Jones's jailtime depends on his sitting at t seems to be the same sense in which God's past belief that you would read this paper today depends on your reading this paper today. If this sense of dependence is irrelevant to freedom in the case of prepunishment, then it would seem irrelevant in the case of divine foreknowledge as well. This would mean that the central idea of the dependence response – that God's relevant past beliefs depend on our current or future choices and, thus, are no threat to our freedom – is simply confused.

So is the dependence response doomed? Others have tried to meet Todd's challenge, but the shift from FI to FI+ opens up a new and powerful reply on behalf of the dependence response.¹⁸ Most basically, Todd's challenge faces a dilemma: either prepunishment cases involve explanatory loops or they don't. If they do, FI+ can accommodate the intuition that the relevant individual isn't free. If they don't, then it is not so clear that the individual's freedom is undermined to begin with. Either way, the shift to FI+ allows the dependence response to go unscathed.

Let's start with a couple of warmup cases before returning to Todd's original case. Consider the following: ten days ago, knowing that Jones will sit at t , God was a bit angry and needed to blow off some steam. So, ten days ago, God decided to cause a small explosion on a barren planet, galaxies away, but then immediately removed all traces of the explosion, ensuring that the explosion won't affect Jones at t whatsoever. In this case, is it obvious that Jones *must* sit at t ? No. Indeed, given the obvious parallels between this case and Ted's not-so-excellent adventure, it would seem that we should treat them the same. Since Ted's freedom isn't obviously undermined, so neither is Jones's.

Now a warmup case a little closer to home: ten days ago, knowing that Jones will sit at t , God wanted to "prepunish" *someone*, just not Jones. So, ten days ago, God decided to put Smith in jail for a very brief moment, but then immediately removed all traces of her jailtime, ensuring that it won't affect Jones at t whatsoever. (Perhaps God

put Smith in a jail on a distant and barren planet and then covered it up.) If Jones's freedom isn't obviously undermined by God causing a small explosion on a distant planet, why would Jones's freedom be undermined in this case? There would seem to be no principled difference between this warmup case and the previous one.

And finally, back to our original example: ten days ago, knowing that Jones will sit at t , God prepunished Jones by putting him in jail. Must Jones sit at t ? Well let's suppose that there is no explanatory loop here – suppose God immediately removed all traces of Jones's jailtime, ensuring that it won't affect Jones at t whatsoever. (This might be a bit more difficult to imagine, a point to which we will return momentarily.) If Jones's freedom isn't obviously undermined in our warmup cases, it's again hard to see why it would be here. In all three cases, God brings about some event in response to foreknowing that Jones will sit at t , and then immediately removes all traces of that event, ensuring that the event in no way affects Jones at t . Why should it matter whether the event in question be an explosion, putting someone else in jail, or putting Jones himself in jail? We need a principled reason for treating these cases differently. If we stipulate that there is no explanatory loop involved, it is quite difficult to see what this principled reason might be.

But what if we instead suppose that there is an explanatory loop? That Jones's jailtime does partly explain (even if only ancestrally) his sitting at t ? For what it's worth, I suspect this supposition is forced on us, given the details of Todd's original case. The

idea is this: when God causes a small explosion or puts Smith in jail, these events need not affect the shape of Jones's past (relative to t), and so need not affect Jones's future, including his sitting at time t . But, plainly, when God puts Jones in jail, that affects Jones's past (relative to t), and so *must* affect Jones's future, including his sitting at t , however minute or indirect the effect may be. Or to use the language of four-dimensionalism, consider Jones's "time-slice" in jail ten days ago and his "time-slice" that is sitting at t . Jones's time-slice ten days ago comes *earlier* than his time-slice at t ,¹⁹ and it is commonly held that an agent's time-slice, s_1 , comes earlier than another one of her time-slices, s_2 , only if s_1 causes (either directly or ancestrally) s_2 in the right way. Hence, it follows that Jones's time-slice ten days ago partly causes (at least ancestrally) Jones's time-slice at t . By comparison, there isn't much reason to think that God's causing an explosion on a distant planet or punishing someone else *necessarily* affects Jones's time-slice at t .

Whether this is compelling or not is somewhat beside the point though. If we suppose that Jones's sitting at t is partly caused (at least ancestrally), and hence explained, by his being in jail ten days ago, FI+ delivers the result that Jones isn't free at t . Recall that FI+ differs from FI only by adding clause (ii) which states, roughly, that if a fact, F , explains an agent's choice(s), then F is fixed for the agent. That's what allows FI+ to claim that time travelers in explanatory loops, like Bill, are not free: since Bill's appearance in 1900 partly explains (at least ancestrally) why Bill is in a position to press

the button on his time machine, clause (ii) says that his appearance in 1900 is fixed for him at the time of his pressing the button. Something similar can now be said about Jones: since Jones's jailtime partly explains (at least ancestrally) his sitting at t , it is fixed for him at the time of his sitting.²⁰ Given that his jailtime entails his sitting, Jones's freedom is undermined according to FI+.

To be clear, we need not suppose that Jones's jailtime ten days ago is explanatorily *salient* with regards to Jones's sitting. In a typical context, the most natural explanation for Jones's sitting at t will not cite his being in jail ten days ago. Rather, it will cite things like Jones's needing a rest, or being asked to sit, or what have you. We need only suppose that Jones's jailtime *partly* explains (at least ancestrally) his sitting at t : that his being in jail ten days ago explains why he was wearing an orange jumpsuit and staring at a brick wall, which in turn explains why he started to grow bored, which in turn explains why he... which in turn explains why he decided to sit at t . So long as we construe the notion of explanation in a broad way, we can make sense of Jones's jailtime explaining (at least ancestrally) his sitting at t , regardless of whether his jailtime is explanatorily *salient* or not.

The dilemma for prepunishment cases is now clear: either Jones's jailtime partly explains (at least ancestrally) his sitting at t or it doesn't. If it does, then FI+ delivers the right result; if it doesn't, then it isn't clear that Jones's freedom is undermined to begin

with. Either way, the dependence theorist can utilize FI+ to offer a new reply to Todd's and Todd's and Fischer's challenge.

FI+ and Providence

By reflecting on explanatory loops, the dependence theorist can motivate a new argument for the first claim of the dependence response as well as offer a new reply to the challenge of prepunishment, or so I have argued. But this all comes with a potential cost: it seems to render the dependence response inconsistent with views of providence that make use of such explanatory circles.

As a particular example, let's focus on a version of *Molinism* that invokes explanatory circles. Molinist accounts of providence hold, roughly, that in creating the world, God made use of so-called "counterfactuals of creaturely freedom," claims of the form: if agent *S* were placed in circumstance *C*, *S* would (freely) perform action *X*. According to Molinism, these counterfactuals, although contingently true, are not determined by God's decrees or activities, thereby (putatively) allowing for a libertarian sense of freedom. For instance, according to Molinism, God knew that, if you were placed in the relevant circumstance you currently find yourself in, you would (freely) read this paper today. God, desiring that you (freely) read this paper, decided to place you in the circumstance you currently find yourself in, thereby bringing about your (freely) reading this paper but in a way that allows for your (freely) doing otherwise.

In recent years, the most common challenge for Molinist accounts of providence revolves around the truth of these so-called “counterfactuals of creaturely freedom.” If we accept a libertarian view of freedom, what could possibly make it true that, if *S* were placed in circumstance *C*, *S* would (freely) perform *X*? How is it that God, prior to creation, knew that, given the situation you are currently in, you would (freely) read this paper? What “grounds” this truth? There are a myriad of responses out there, but one suggested by Trenton Merricks (and perhaps others) involves what *actually* happens: the fact that you *are* (freely) reading this paper in your given circumstance explains the truth of the conditional that, if you were in your given circumstance, you would (freely) read this paper.²¹ Granted, this response doesn’t straightforwardly account for counterfactuals of creaturely freedom involving non-actual circumstances, agents, or actions. But at least it would seem to account for the relevant conditionals involving the circumstances, agents, and actions that God actually brings about.

What’s of particular importance for the dependence response, though, is that these versions of Molinism seem to create an explanatory loop: your reading this paper in the relevant circumstance explains the truth of the conditional that, if you were placed in the relevant circumstance, you would (freely) read this paper. The truth of this conditional then explains why God knew this conditional which, in turn, explains why he decided to place you in the relevant circumstance. But your being placed in the relevant circumstance then at least partly explains why you (freely) read this paper.

More generally, the loop goes like this (using the arrow to denote the “explains” relation):

$$(S \text{ (freely) performs } X \text{ in } C) \rightarrow (\text{If } S \text{ were placed in } C, S \text{ would (freely) perform } X) \rightarrow (\text{God knew that: if } S \text{ were placed in } C, S \text{ would (freely) perform } X) \rightarrow (\text{God placed } S \text{ in } C) \rightarrow (S \text{ (freely) performs } X \text{ in } C)$$

Whatever else we might make of this version of Molinism, notice that the shift from FI to FI+ would render such loops incoherent. Under FI, each fact in the loop is explained (at least ancestrally) by *S*'s performing *X* in *C* and, thus, *S*'s freedom is not necessarily threatened by the loop. But it's a much different story under FI+: according to clause (ii), any fact which explains agent *S*'s performing action *X* ought to be held fixed in evaluating whether *S* was free to do otherwise than perform action *X*. This additional clause is what allows FI+ to deliver the result that individuals caught in explanatory loops – like time-traveling Bill or prepunished Jones – are not free. But it would seem as if this additional clause also implies that individuals caught in *providential* explanatory loops are not free. The providential loop given above implies that *S*'s performing *X* in *C* explains (at least ancestrally) *S*'s performing *X* in *C*. Obviously, there is no world where *S* performs *X* in *C* but does not perform *X* in *C*. Hence, clause (ii) of FI+ rules out this version of Molinism.

How should those sympathetic to both the dependence response and this version of Molinism respond? One approach might be to restrict the kinds of explanation featured in FI+. Notice that the cases of time travel and prepunishment considered above seem to involve *causal* loops in particular. In contrast, while the version of Molinism sketched above certainly involves some kind of explanatory loop, it is not so clear it is exclusively of the *causal* variety. Consider the claim that agent *S*'s (freely) performing *X* in *C* explains the truth of the conditional that, if *S* were in *C*, *S* would (freely) perform *X*. This doesn't seem to be a *causal* sense of explanation, but rather a *metaphysical* one, meaning we don't get a straightforward causal loop. Perhaps the dependence theorist could restrict FI+ in such a way that respects this difference.

I don't want to simply dismiss this strategy, but I'm quite skeptical it will work. First, it seems a bit *ad hoc*: it's hard to find a reason to restrict FI+ in such a way apart from a desire to reconcile FI+ with this version of Molinism. Second, it's not clear how to restrict FI+ to achieve the desired result. Suppose we amend clause (ii) of FI+ as follows: if fact *F* *causally explains* the agent's choice(s), then *F* is fixed for the agent in evaluating whether she could have done otherwise. Since *S*'s (freely) performing *X* in *C* doesn't *causally explain* the truth of the conditional that, if *S* were in *C*, *S* would (freely) perform *X*, this amendment wouldn't require that we hold fixed the fact that *S* (freely) performs *X* in *C*. So far, so good. But look just a little further down the loop: God's knowing (and hence believing) that, if *S* were in *C*, *S* would (freely) perform *X* does

seem to causally explain God's putting *S* in *C*, which then seems to causally explain *S*'s (freely) performing *X*. According to clause (ii) then, God's belief that, if *S* were in *C*, *S* would (freely) perform *X*, as well as God's putting *S* in *C*, are both fixed. Presumably there is no world where God has that belief, puts *S* in *C*, and yet *S* does not perform *X*. So even if we restrict FI+ in a way that doesn't require holding the *entire* loop fixed, enough of the loop still remains fixed to undermine the relevant agent's freedom.

The challenge, then, is to modify FI+ in a relatively precise and independently motivated way that respects the difference between causal loops and the "mixed" explanatory loop involved in the version of Molinism given above. Perhaps this can be done, but I'm not hopeful. Rather, it seems to me that those who endorse the dependence response (or at least FI+) should concede that their view limits the number of viable models of providence. And while we have been concerned with a particular version of Molinism, the point is more general: it would seem as if *any* model of providence which puts the agent in an explanatory loop undermines the agent's freedom.

Perhaps this implication will serve as a *reductio* for some authors, showing instead that the dependence theorist ought not to embrace FI+. But at least in my own case, the allure of FI+ is too great – the argument from time travel in conjunction with the new response to the challenge of prepunishment makes FI+ too attractive to give up, even if it should render certain views of providence problematic.

Concluding Remarks

I have presented an argument for the first claim of the dependence response, that FP ought to be abandoned, or at least seen as derivative of, FI (or FI+). The argument claims that the difference in intuitions about certain cases of time travel can be accounted for by the dependence response, particularly FI+, but not FP. I then also claimed that an important challenge to the dependence response given by Todd (as well as Fischer and Todd) can be met by FI+. So long as one isn't too attached to certain views of providence which make use of explanatory loops, this means those who accept the dependence response have good reason to embrace the (slightly) stronger principle of FI+ over FI.²²

University of California, Riverside

References

Adams, Robert. 1991. "An Anti-Molinist Argument." *Philosophical Perspectives* 5: 343-353. doi: <https://www.jstor.org/stable/2214100>

Fischer, John Martin and Patrick Todd. 2013. "The Truth About Foreknowledge." *Faith and Philosophy* 30: 286-301. doi: <https://doi.org/10.5840/faithphil201330329>

Flint, Thomas. 1998. *Divine Providence: The Molinist Account* (Cornell University Press).

Lewis, David. 1976. "The Paradoxes of Time Travel." *American Philosophical Quarterly* 13: 145-152. doi: <https://www.jstor.org/stable/20009616>

McCall, Storrs. 2011. "The Supervenience of Truth: Free Will and Omniscience." *Analysis* 71: 501-506. doi: <https://doi.org/10.1093/analys/anr051>

Merricks, Trenton. 2009. "Truth and Freedom." *Philosophical Review* 118: 29-57. doi: <https://www.jstor.org/stable/41441861>

Merricks, Trenton. 2011a. "Foreknowledge and Freedom," *Philosophical Review* 120: 567-586. doi: <https://www.jstor.org/stable/41684417>

Merricks, Trenton. 2011b. "Truth and Molinism." In *Molinism: The Contemporary Debate*, edited by Ken Perszyk (Oxford University Press), 50-72.

Monton, Bradley. 2009. "Time Travel Without Causal Loops." *The Philosophical Quarterly* 59: 54-67. doi: <https://www.jstor.org/stable/40208578>

Pike, Nelson. 1965. "Divine Omniscience and Voluntary Action." *Philosophical Review* 74: 27-46. doi: <https://www.jstor.org/stable/2183529>

Rea, Michael. 2015. "Time Travelers Are Not Free." *Journal of Philosophy* 112: 266-279. doi: <https://doi.org/10.5840/jphil2015112516>

Swenson, Philip. 2016. "Ability, Foreknowledge, and Explanatory Dependence."

Australasian Journal of Philosophy 94: 658-671. doi:

<https://doi.org/10.1080/00048402.2015.1130731>

Todd, Patrick. 2013. "Prepunishment and Explanatory Dependence: A New Argument for Incompatibilism About Foreknowledge and Freedom." *Philosophical Review*

122: 619-39. doi: <https://doi.org/10.1215/00318108-2315315>

Wasserman, Ryan. 2018. *Paradoxes of Time Travel* (Oxford University Press).

Wasserman, Ryan. Forthcoming. "Freedom, Foreknowledge, and Dependence." *Noûs*.

doi: <https://doi.org/10.1111/nous.12317>

Westphal, Jonathan. 2011. "The Compatibility of Divine Foreknowledge and Free Will."

Analysis 71: 246-252. doi: <https://doi.org/10.1093/analys/anr023>

NOTES

¹ See Pike, "Divine Omniscience and Voluntary Action," for the classic formulation of this argument.

² For defenses of the dependence response, see Merricks, "Truth and Freedom"; Merricks, "Freedom and Foreknowledge"; McCall, "The Supervenience of Truth"; Westphal, "The Compatibility of Divine Foreknowledge and Free Will"; and Swenson, "Ability, Foreknowledge, and Explanatory Dependence."

³ This formulation follows Swenson, "Ability, Foreknowledge, and Explanatory Dependence," most closely, although Swenson restricts the principle to *past* facts which are in no way explained by the agent's choices.

⁴ See Wasserman, "Freedom, Foreknowledge, and Dependence," for details.

⁵ Here I again follow Swenson, "Ability, Foreknowledge, and Explanatory Dependence."

⁶ Todd, "Prepunishment and Explanatory Dependence"; Fischer and Todd, "The Truth About Foreknowledge."

⁷ Swenson, "Ability, Foreknowledge, and Explanatory Dependence," 664.

⁸ A fair amount of ink has been spilled about freedom and time travel. The classic discussion is Lewis, "The Paradoxes of Time Travel." For a more recent overview and discussion, see Wasserman, *Paradoxes of Time Travel*, chapters 3 and 4.

⁹ For ease of exposition, I will assume that explanation is a transitive notion. But even if it is not, what follows could be amended in such a way using the "ancestral explanatory" relation.

¹⁰ Rea, "Time Travelers Are Not Free," 272.

¹¹ A referee has suggested that FI+ might be too strong. Suppose that just prior to t , agent S chooses to perform action X , thereby causing her to perform X at t . FI+ implies that, in evaluating whether S could have done otherwise than X at t , we ought to hold fixed her choosing to do X . And if we do, it seems as if FI+ delivers the result that S *must* do X at t , which may sound implausible in certain contexts. However, notice that FP and FI also suffer a similar problem: S 's choosing to do X is temporally prior to, and explanatorily independent of, S 's performing X at t , and so fixed according to FP and FI. Regardless of which of these principles is accepted, I think the most plausible way to address this worry is to employ a "tracing" account of freedom for actions other than choices (or at least actions causally downstream from choices). Roughly: if S could have done otherwise than X at t , it is (partly) in virtue of the fact that S 's performing X at t was caused by S 's choice to perform X , and S could have chosen to do otherwise.

¹² Again, I am assuming that explanation is a transitive notion. Even if it is not, clause (ii) of FI+ could easily be amended in such a way that any fact which stands in the "ancestral explanatory" relation is fixed. That would deliver the same result.

¹³ There is some controversy over whether it is possible for backwards time travel to occur without creating a causal (and, hence, explanatory) loop. See Monton, "Time Travel Without Causal Loops."

¹⁴ Perhaps the advocate of FP could invoke Rea's comments above and suggest that Ted's appearance in 1900, leaving no trace or mark on the world, is not part of the fixed past. But under this suggestion, FP no longer seems substantively different than FI (or perhaps FI+). This version of FP says that it's not *temporal* features that generate fixity, but *causal* features, which is a short step away from explanatory features.

¹⁵ Todd, "Prepunishment and Explanatory Dependence"; Fischer and Todd, "The Truth About Foreknowledge."

¹⁶ Todd, "Prepunishment and Explanatory Dependence," 624.

¹⁷ Todd, "Prepunishment and Explanatory Dependence," 629. Emphasis in the text.

¹⁸ See Swenson, "Ability, Foreknowledge, and Explanatory Dependence," for responses, though.

¹⁹ It is earlier according to Jones's "personal time," rather than "external time," not that the distinction matters in this case.

²⁰ Again, I am assuming that explanation is a transitive notion. See notes 9 and 12.

²¹ Merricks, "Truth and Molinism." Flint, *Divine Providence*, might also endorse this view, although it is far less clear.

²² Thank you to Taylor Cyr, John Fischer, Jonah Nagashima, Philip Swenson, Patrick Todd, Neal Tognazzini, and Ryan Wasserman for helpful comments. In addition, thank you to three anonymous referees at *Faith and Philosophy* as well as Mark C. Murphy for very insightful remarks and suggestions on previous drafts.