

## *Ex Nihilo Nihil Fit: Arguments New and Old for the Principle of Sufficient Reason*

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### 1. Introduction

“Ex nihilo nihil fit,” goes the classic adage: nothing comes from nothing. Parmenides used the Principle of Sufficient Reason to argue that there was no such thing as change: If there was change, why did it happen when it happened rather than earlier or later? “Nothing happens in vain, but everything for a reason and under necessitation,” claimed Leucippus. Saint Thomas insisted in the *De Ente et Essentia*: “Everything, then, which is such that its act of existing is other than its nature must needs have its act of existing from something else.” Leibniz wrote:

Our reasonings are founded on *two great principles, that of Contradiction . . . . And that of Sufficient Reason*, in virtue of which we consider that no fact can be real or actual, and no proposition true, without there being a sufficient reason for its being so and not otherwise, although most often these reasons cannot at all be known by us.

These claims are all closely related and have great intuitive appeal—the ordinary person accepts the claims. Each claim insists that an existent or occurrent thing has an explanation. Some of the claims, like the *ex nihilo nihil fit* adage, limit themselves to saying that certain kinds of things, such as those that come into existence, have explanations or at least cannot come from nowhere. Others, like the claims of Leucippus and Leibniz are fully general and state the Principle of Sufficient Reason (PSR) that every true proposition has an explanation for why it is true.

All of the particular claims are special cases of the PSR. It is difficult to see what reason could be given for believing any one of the particular claims without believing the full PSR. There is little reason to think, for instance, that a contingent being has any less need for an explanation of its existence if it has existed longer, indeed if it has always existed, than if it has existed for a finite time. Good reasons to think that a being that has come into existence must have an explanation of its existence will tend to be good reasons to think that any contingent being must have an explanation of its existence—the existence for a finite amount of time just underscores the contingency of the being, the fact that it might not have existed. Thus, I will take it that support lent to any of the versions of the PSR transfers at least to some degree to other versions.

I will, however, for convenience distinguish two versions. First, there is the Causal Principle which says that a contingent being or event has a cause. Second, there is what I will simply refer to as the Principle of Sufficient Reason, which I will henceforth take to be the claim that every *contingent* true proposition has an explanation. I will not be concerned with explanations of necessary true propositions, because we just do not know enough yet about how the concept of explanation applies in fields like mathematics that deal with necessary propositions. If pressed, I will simply deem necessary propositions to be self-explanatory: their explanation is found in their own necessity.

Note that the PSR and the Causal Principle present themselves as conceptual truths. They present themselves as claims not merely contingently true, but as necessarily true.

As I said, there is much intuitive appeal to the PSR. Nicholas Rescher offers the case of an airplane crash. The investigation concludes that the crash had no cause. Surely we would not think that the investigators mean what they say: Rather than suppose them to believe the absurdity that a plane crashed without cause, we charitably assume that what they mean is that they *found* no cause. For the idea of an airplane crash without cause is absurd.

The First Vatican Council, basing itself on the first chapter of Romans, dogmatically defined that the existence of God can be “known with certainty from the things that have been made, by the light of natural reason”. But it is quite questionable whether without something like the Causal Principle one could know with *certainty* from creation that there is a creator. After all, if the Causal Principle is false, then for aught

that we know, creation has no creator. The Oath Against Modernism develops the teaching of Vatican I in a way that makes the use of the Causal Principle explicit: “I profess that God, beginning and end of all things, can be certainly known, and therefore also proved, as the cause through its effects, by the natural light of reason through the things that have been made, that is, through the visible works of creation.” Admittedly, the Oath is not infallible like the Council. But it is hard to see how in the absence of *some* version of the Causal Principle the teaching of the Council can be upheld—that is not to say it cannot be done, but the question is a hard one. And John Paul II, in *Fides et Ratio*, lists the Causal Principle as part of the “core of philosophical insight within the history of thought as a whole.”

At the same time, there is a developing consensus in contemporary analytic philosophy of religion that once one grants the PSR, the Cosmological Argument for the existence of God is sound: there must be an explanation of our contingent cosmos, and this explanation needs to be in terms of the causal efficacy of a necessary being. At the same time, the PSR is widely denied in analytic philosophy circles. One reason for the denial is simply this developing consensus together with the wide-spread denial of the existence of God: “The PSR can be used to prove the existence of God,” the argument goes, “but there is no God, and hence the PSR is false.” That is not to say that this is the only argument against the PSR. There is also an argument based on quantum mechanics—which depends specifically on the interpretations being indeterministic, an assumption that can be questioned, and there are other problems with the argument that I can talk about during the discussion period—and a certain argument against the PSR most clearly formulated by van Inwagen.

Most people who accept the PSR or its variants accept it because they take it to be *self-evident*. In this paper I will argue neither for nor against this self-evidence claim, except to say that a claim of self-evidence is not going to convince the sceptic who claims subjectively not to find the principle self-evident. What I will do is argue that the defender of the PSR need not limit herself to claims of self-evidence. There actually are good arguments for the PSR and the Causal Principle. I will talk about three arguments: the argument from predictability of things in the world, a technical modal argument based on the nature of causality, and an argument based on the nature of modality. The arguments will be sketched very briefly. In the discussion we can talk about some of the details.

## 2. The van Inwagen objection

Henceforth, I will take necessary propositions to be all self-explanatory. Take the Big Contingent Conjunctive Fact (BCCF) which is the conjunction of all contingent true propositions. This is itself a contingent proposition. By the PSR, it must have an explanation. This explanation is a true proposition. It is then either contingent or necessary. If it is contingent, then this explanation will itself be a part of the BCCF—remember that the BCCF contains *all* contingent true propositions, and hence it also contains the explanation of the BCCF. But if this explanation both explains the BCCF and is contained in the BCCF, then *inter alia* it explains itself. But no contingent proposition can explain itself! Thus, the explanation of the BCCF must be necessary. But an explanation has to entail that which it explains: the *explanandum* must follow logically from the *explanans*. Otherwise, how does the explanation do any explaining? Thus, the explanation of the BCCF entails the BCCF. But anything that logically follows from a necessary proposition is itself a necessary proposition. Thus, if the explanation of the BCCF is a necessary proposition, so is the BCCF. But the BCCF is contingent. To put it differently, if the explanation of the BCCF were a necessary proposition, then it would be equally logically compatible with the BCCF’s holding as with the BCCF’s not holding. Hence absurdity ensues on this horn of the dilemma, too.

This I will call the “van Inwagen objection”, though it was in effect also made by James Ross and William Rowe. As I formulated it, it has two controversial premises. No contingent proposition can explain itself, a claim that appears akin to the fact that nothing can cause itself, and no necessary proposition can explain a contingent proposition.

The challenge, then, is: How do we explain the BCCF? The defender of the PSR can either explain it

through a necessary proposition or a contingent one.

I think either horn of the dilemma can be embraced by the defender of the PSR. First, the necessity horn. The argument against this relies on the claim that if  $p$  explains  $q$  then  $p$  entails  $q$ . But we know this is not always so. Consider an explanation that cites a law of nature that merely holds all other things being equal, *ceteris paribus*. Many, and perhaps all, laws of nature are like that. Thus, the law of gravity says that two massive objects accelerate towards each other—but only *ceteris paribus*, since there might be electric repulsion between them, too. The existence of such a law does not entail a specific outcome. For instance, take the explanation of why the planets move in elliptical orbits in terms of the law of gravitation and the initial positions and velocities of the planets. The law of gravitation and the initial positions and velocities do not *entail* that the planets move in elliptical orbits. Why not? Well, the law and initial conditions are logically compatible with there being some other force operative that makes the planets not take elliptical orbits. Thus, we have here a case where the explanation does not entail the explained proposition. But it is a fine explanation. One might, of course, argue that it is insufficient as an explanation, but in that case it might well be that *all* the scientific explanations we have ever given are insufficient, and one thus has severed the concept of explanation from its roots in human practice.

Here is an *ad hominem* argument against the claim that if  $p$  explains  $q$  then  $p$  entails  $q$ . Here is an explanation of why a dog did not bark: None of the possible causes of the dog's barking occurred. This is a perfectly good explanation. But unless a Causal Principle is necessarily true, and the opponent of the PSR is apt to deny this, that none of the possible causes of barking have occurred does not entail that the dog did not bark—it might have barked causelessly, after all.

What kind of an explanation of the BCCF could be given on the necessity horn? It might be something like this: It is necessarily true that there is a God and that God freely decided what to create and that God appreciated such-and-such values. (Which values? The ones that the world in fact exhibits. E.g., our world exhibits the value of gradual development, rather than of initial completeness.) Admittedly, this does not entail that God created this world rather than another. But perhaps it *explains* it.

Here is one reason to think it explains it. When one has cited the *cause* of an event and said what there is to be said about this cause's state prior to its exercise of causal power, one has explained the event. Finding the cause of something is a paradigmatic way of explaining it. Leaving aside some issues about human free will, God is the cause of the BCCF's being true. Hence once we have stated the necessary facts about God, the ones prior to his free choice what to create, including the fact that, necessarily, he freely chooses what to create—it not being necessary, of course, that he chooses to create *this* cosmos—one has explained things.

Admittedly, the explanation does not give a *sufficient condition* for the explanandum to hold. That God freely chose to create, etc., is not a sufficient condition for the BCCF, since it does not entail the BCCF. But we need not read the words "Sufficient Reason" in "the Principle of Sufficient Reason" as implying a *sufficient condition*. We can read it, rather, as a principle of *sufficient explanation*. And once one has cited a cause, one has given a sufficient explanation.

What about the contingency horn? Here is a contingent self-explanatory proposition that might well explain why the BCCF is true. A necessarily existent God freely brought it about that the BCCF is true. Or perhaps we expand this to: A necessarily existent God freely brought it about, for the sake of reason  $R$ , that the BCCF is true. This proposition is a sufficient explanation of itself: there ought be no more puzzlement about why someone freely chose something for a reason  $R$  once one understands that this person freely chose it for  $R$ . We accept this as an explanation-ender in ordinary discourse.

But we can do better than the above sketches of responses to the two horns. Here is a positive argument that someone who accepts the possibility of libertarian free will *must* reject the van Inwagen argument. Since van Inwagen is a libertarian, he too must reject his own argument, though admittedly this is only *ad hominem*, and to complete the argument, I would need to argue for libertarian free will, for which, of

course, there is no time here.

Libertarian free will is non-deterministic. From the condition of the mind of the chooser prior to the choice one cannot deduce what choice will be made. This has given rise to the *randomness* objection to libertarianism. Libertarian-free choices are not really caused by the person, but are merely *random* blips, like some people think quantum events are. We would not account a person free if acts of will occurred *randomly* in a person's mind or brain.

The libertarian is committed to a denial of the randomness objection. I am not concerned here in how exactly the libertarian argues against the randomness objection. But what is clear is that she must reject the claim that libertarian-free actions are random. Now suppose that a libertarian allows that in the case of a libertarian-free choice between options *A* and *B*, where in fact *A* was chosen, there is no sufficient explanation of why *A* was chosen. I think such a libertarian has succumbed to the randomness objection. If there is no explanation for why option *A* was chosen, then that *A* was chosen is a brute, unexplained, uncaused fact—a *random* fact. Thus, the libertarian cannot allow that there is no explanation of why *A* was chosen.

We can look at this from another direction. Suppose we have a person who is externally determined to choose *A* instead of *B*, so that the explanation for why *A* was chosen was that some external puppet master has caused the agent to choose *A* rather than *B*. In that case, there would indeed be an explanation for why *A* was chosen rather than *B*—the explanation be in terms of the causal efficacy of the puppet master. But, of course, the libertarian will insist that in that case, there is no free will. Now take this situation and *subtract* the puppet master, without adding anything. We then get a situation where there is no cause for the choice of *A* rather than of *B*. We get a genuine case of randomness. We've replaced the external puppet master by nothing at all. And this mere removal of the puppet master does nothing to give freedom to the agent. Libertarian freedom is not, after all, something purely negative, the lack of a puppet master. Rather, it is something positive. To go from the determined choice under the sway of the puppet master to a genuine libertarian free choice, we cannot merely delete the explanation of the action in terms of the puppet master: we must *add* something to the situation. It is plausible that what needs to be done is to substitute the free agent and/or her free will for the puppet master: the action must be explained in terms of something in the agent now, instead of in terms of something external. The basic intuition of a libertarian is that determinism places the ultimate point of decision outside the agent, in the environment that has formed the agent. This external determinism, to produce freedom, must not only be negated, but must be replaced by something within the agent.

Thus, the libertarian *must* hold that there is an explanation for why one rather than another choice was freely made. Otherwise, the randomness objection to libertarianism succeeds. But I think it is clear that this either forces the libertarian to say that a description of a mind in a state that is equally compatible with either of two actions, *A* or *B*, can be used to explain why *A* was freely chosen—a denial of the thesis that the explanation entails what it explains—or that the claim that action *A* was freely chosen, or perhaps freely chosen for reason *R*, is “almost” a self-explanatory claim, despite its contingency. By “almost”, I mean that the claim that *A* was freely chosen explains all there is to be explained other than the existence and freedom of the agent. If the agent is God, then the claim that God freely chose to do *A* will be fully self-explanatory, because God's existence and freedom are necessary truths, and hence I am deeming them self-explanatory.

Any libertarian account of how the free choice of a finite agent can be explained can be turned into an account of how a necessarily existent God's choice to bring about the BCCF can be explained.

Observe that the van Inwagen objection may be quite insoluble if the explanation of the BCCF does not involve the free choice of a necessarily existent agent. If this is correct, then the van Inwagen objection can be turned around into the cosmological argument for the existence of God.

### 3. Predictability

This is an old argument, going back to the ancient Greeks. The Causal Principle is plainly true in the

case of ordinary medium sized objects. If I leave a brick somewhere, then that brick will remain there, barring a cause to the contrary. It will not pop out of existence for no reason at all. Leaving aside the question of the tiny—quantum stuff—and enormous—the origins of the universe—the Causal Principle is true on an everyday level.

But why is it true? I would like to suggest that the best explanation for the truth of the Causal Principle on an everyday level is just that the Causal Principle is a necessary conceptual truth.

Suppose the Causal Principle does is not a necessary conceptual truth. Why then do we not see violations of it all around us? One might say that violations of it are *unlikely*. But does it make any sense to talk of the likelihood of a causeless unexplainable event? Presumably such events would not be happening under the sway of the laws of nature. But one cannot assign objective probabilities to such events, then. And on a purely intuitive level, if the Causal Principle is not a necessary truth, then violations of it would seem quite likely. After all, for any one possible world in which the Causal Principle holds on an intuitive level, there is an innumerable array of possible worlds which are just like the given world, except that bricks or other objects appear out of nowhere for no reason at all.

I think the only possible response can be that the applicability of the Causal Principle to medium-sized phenomena is a consequence of the laws of nature. But whether this can be so depends on general considerations about laws of nature. Some philosophers of science accept the view of Nancy Cartwright that *all* laws of nature hold merely *ceteris paribus*. They all describe, even when all conjoined, what must happen *in the absence of external influence*. The observational consequences of the laws are thus never *entailed* by the laws. By the way, don't we *have to* say this if we want to talk about miracles? For if a law of nature is supposed to be exceptionless, and a miracle violates it, then it follows that that the law was not a law. Only if the law specifies what happens in the absence of external influence can it both be a law and yet for there to be a miracle—due to the external influence of God. This is C. S. Lewis's account of miracles, and it seems quite sensible.

But if this is what the laws of nature are like, then it is not clear how they can of themselves make the Causal Principle true. How can these laws fail to be powerful enough to prohibit external influence while being powerful enough to prohibit causeless events? Even the conjunction of all of our *ceteris paribus* laws of nature will, presumably, be compatible with a macroscopic material object's suddenly acquiring *due to an external influence* some completely new property, a property as different from the properties it once had as charge is from mass. But why wouldn't these laws be equally compatible with the object's acquiring that new property *causelessly*? The only answer I am aware of is that there is a Causal Principle that prohibits such acquirings.

For a related argument, note that if one takes the laws of nature to be, even when taken all together, *ceteris paribus*, then the Causal Principle may be needed to allow any scientific predictions to be made from the laws. For to make a prediction, we need to say what the relevant laws influencing a given experimental setup will be, and then assume that in the given context, the predicted outcome will be affected only by these relevant laws. But unless the Causal Principle is in play, not only need the scientist when making the prediction rule out the possibility that some other law of nature will relevantly affect the outcome, but she must rule out the possibility that some causeless event will do it.

#### **4. An argument based on causality and counterfactuals**

If my striking the match caused the match to light, then, roughly, were I not to have struck the match, the match would not have been afire. This illustrates the principle that if *A* caused *B*, then *B* would not have occurred had *A* not occurred. But this isn't quite right. For it might be that had *A* not occurred, *some other* potential cause of *B* would have occurred. Perhaps there was someone standing behind me with a lighter and she would have lit the match had I not struck it.

But there still seems to be something right about the counterfactual condition that were the cause not to have occurred, the effect would not have occurred, even if we have difficulty in formulating it precisely.

Note that this condition does not say simply that the effect would be impossible without the cause. This would beg the question against many opponents of the Causal Principle, opponents who would insist with Hume that events that ordinarily have causes need not have had them. But even these opponents will accept the weaker claim that *were* the causes not to have occurred, the effects would also not to have occurred.

One lesson to draw out of the above discussion, keeping the counterexamples in mind is this: Were it the case that no event causing the match to light to have occurred, the match would not have come on fire. This is a conceptual consequence of the claim that the match's being lit had a cause. Thus, in every possible world where the match's being lit has a cause, it is true that were no event causing the match to light to have occurred, the match would not have come on fire.

I am now going to argue based on the above that there is *necessarily* a cause for the match's lighting up, that there are no possible worlds at which the match lights up causelessly. For suppose we are at such a possible world, so we can actually truthfully say "The match came on fire, but causelessly." We admit, however, that it is logically possible that the match's being lit had a cause. Consider now what would have been the case had the match's being lit had a cause. Had the match's being lit had a cause, then it would have been the case that had there been no cause for the match's being lit, then the match would not have been lit. Let  $L$  be the event of the match's being lit or coming on fire. Let  $\boxdot$  indicate a counterfactual conditional. Then:

$(L \text{ has a cause}) \boxdot (L \text{ has no cause} \boxdot \sim L)$ .

Moreover, in fact it is actually true that  $L$  occurs and  $L$  has no cause.

But now we have a problem. Here is a plausible story about how to make sense of counterfactuals. To evaluate a counterfactual that were  $p$  to hold,  $q$  would hold, we look at a class of *relevant* worlds where  $p$  holds, and check whether  $q$  holds at all of them. If it does, then all is well: were  $p$  to hold,  $q$  would hold. What counts as the class of relevant worlds is not at all obvious. Stalnaker proposed talking of the most similar world at which  $p$  holds. But something like this picture of how we evaluate counterfactuals is pretty close to our ordinary language use of counterfactuals, though the difficulty is in the details: in figuring out which worlds count as relevant relative to ours and relative to an antecedent  $p$ .

But here is one intuition I have. Suppose in the actual world we have not- $p$  and we look at all the worlds relevant to a counterfactual with antecedent  $p$ . And suppose in *those* worlds, we look for worlds relevant to a counterfactual with antecedent not- $p$ . My intuition is that the actual world will always be included in the latter class. Suppose I won the lottery. Could I say that were I not to have played in the lottery, then it would have been true that had I played, I would have lost? Certainly not. If  $w$  is some world relevant to the antecedent that I did not play in the lottery, then from the point of view of  $w$  the actual world will be relevant to the antecedent that I *did* play in the lottery. But in the actual world, I win. Thus, at  $w$  it is not true to say that in all relevant worlds where I play in the lottery, I lose. Hence, at  $w$  it is false that were I to play I would lose. Hence, it is not the case that were I not to have played in the lottery, then it would have been true that had I played, I would have lost. If  $p$  is true, then were not- $p$  to hold, it would be the case that were  $p$  to have held, things might have been just as they actually are.

We can summarize the above in symbols. If  $q$  and  $p$  are true, then:

$\sim p \boxdot \sim(p \boxdot \sim q)$ .

Or even more weakly:

(\*)  $\sim(\sim p \boxdot (p \boxdot \sim q))$ .

If  $p$  and  $q$  are true, then it is not the case that were  $p$  to have failed, then were  $p$  to have held,  $q$  would have failed.

But now take our previous conclusion:

$(L \text{ has a cause}) \boxdot (L \text{ has no cause} \boxdot \sim L)$ .

Let  $p$  be the proposition that  $L$  has no cause, and let  $q$  be the proposition that  $L$  occurs. Then, this previous conclusion of ours is precisely the negation of principle (\*). Hence, we have contradicted ourselves. Thus, our assumption that the match's being lit had no cause leads to a contradiction.

The argument I just gave shows more generally the following. If  $E$  is an event that *could* have a cause, then in fact  $E$  necessarily has a cause: in every world in which  $E$  occurs, it has a cause. Thus, a match's having come afire always has a cause, since it plainly always *can* have a cause.

If one adds the plausible assumption that every contingent non-self-explanatory event *could* have a cause, we conclude that every such event *does* have a cause. Thus, we get the Causal Principle. Nothing comes about without cause.

## 5. Modality

We make various modally charged claims. "I could have failed to make it to this interview." If we are to be realists about such claims, then we need to answer the question of what makes these claims true. What is it that makes unicorns possible while round squares and a glass of water not made of  $H_2O$  are impossible? What is it that makes it necessary that  $2+2=4$ , while it is merely contingent that horses exist.

It is tempting to say that this is a merely *logical* question. What makes something impossible is that it entails a contradiction in a logically regimented manner, and what makes it possible is that it does not. Something then is necessary if and only if its negation is impossible, i.e., if and only if it can be derived from the axioms. Unfortunately, then, everything depends on what rules of inference and what axioms one allows in the derivations. The axioms are all automatically going to come out necessary from such an account. But what makes one proposition rather than another be fitter for being an axiom? Is this not our original question about what makes propositions possible or necessary, in a slightly different guise? One might try to solve this problem by listing as axioms all *definitional* truths, such as that a bachelor is a never married marriageable man. But this won't do, because it won't cast the net of necessity widely enough to include Kripkean facts such as that it is necessary that water be  $H_2O$  and that the David was made by Michelangelo. (I can argue for the existence of some such facts in the discussion period if necessary.) To cast the net of necessity widely enough on the logical derivation view, we would need to include enough necessary truths, such as that water is  $H_2O$ , among the axioms. But then the account would fail to answer why these truths are necessary—they would simply become necessary by *fiat*.

David Lewis proposed that what makes a proposition possible is that it is actually true—not of our world, but of some other concrete existing physical universe. Unless we are prepared to believe that there is an infinite number of existing physical universes, and to tolerate the paradoxes that a number of authors have found in Lewis's view, this will not do.

Finally, a very popular account pushed by Robert M. Adams and Alvin Plantinga grounds possibilities and necessities in a Platonic realm of abstracta. What makes the proposition that a unicorn exists be a possible proposition is that this proposition, an abstract entity existing in the Platonic realm, has the abstract property of possibility. Unfortunately, this leaves it a mystery of how facts about the Platonic realm are coordinated with facts about our physical world. Why are facts about propositions, such as that some proposition is impossible, relevant to figuring what concretely exists in the world? How is the concrete fact that some concrete person had the concrete power to kill me—remember, I am coming from the Washington area sniper's zone of operations—is coordinated with the fact about the Platonic realm that the proposition

that I did not give this talk has the Platonic property of possibility? <sup>[1]</sup>

The long and short of it is that it is not easy to find a satisfactory account of what makes some propositions possible, some necessary, some contingent and some impossible. But what I just said gives a hint, explored in recent work of Penelope Mackie and Ullin Place. It is easy to say that what makes it possible that I did not give this talk. There are many things that make it possible, each sufficient on its own: The sniper could have brought it about, a pilot could have brought it about, I could have brought it about. This leads to an Aristotelian account of possibility: a non-actual event is possible providing some substance or substances could have initiated a causal chain leading up to it.

This account is attractive. But it does imply that the PSR is necessarily true. For suppose that the PSR is in fact false. Let  $p$  be a contingent proposition, then, which has no explanation. Let  $q$  be the proposition that  $p$  holds and has no explanation. Since  $p$  is contingent, so is  $q$ . Thus, there is a possible world  $w$  at which  $q$  is false. Let us transport ourselves to that world. In that world, the proposition  $q$  is false, but it is still going to be *possible*. (This uses the Brouwer axiom which is weaker than S5. Actually, the Aristotelian account of possibility entails S5, so this assumption is not problematic.) So, we are now in a world where  $q$ , the proposition that  $p$  holds and has no explanation, is possible but false. By the Aristotelian account, then, there exists something which could initiate a chain of causes leading up to  $q$ 's being true. But were it to do that, then the chain of causes would also *explain*  $q$ . But one of the conjuncts in  $q$  was the proposition that  $p$  has no explanation, and the other conjunct was  $p$ . If one has explained  $q$ , then one has explained  $p$ . But then  $q$  is false. However the chain of causes was supposed to lead up to  $q$ 's being true. Thus, the chain of causes would lead to  $q$ 's being true *and* to  $q$ 's being false, which is absurd.

Hence the assumption that the proposition  $q$  is true leads to absurdity. Thus, it is impossible that  $p$  be true and lack an explanation. Thus, a contingent proposition, if true, must have an explanation.

## 6. Conclusions

Hence, the PSR holds on the best available account of possibility. In its weaker form as the Principle of Causality it holds given a certain understanding of laws of nature. And in that form it holds on account of some counterfactual facts about causality. I think it is self-evident, to boot. Those like David Hume who rejected this self-evidence might well have either accepted the PSR implicitly and denied it merely verbally, or have failed to correctly understand what terms like explanation or contingency mean—the correct understanding of contingency, for instance, being that given by my last argument, of course.

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[\[1\]](#) David: If the sniper *does* get me and you have to read the paper, you'll have to change this example! But I permit you to joke about what I had originally written, a joke underscoring the fragility of our life, and to say that I permitted you thus to joke. Just change it to the opposite case, I suppose, then.