4 Reasoning Without the Principle of Sufficient Reason

Shieva Kleinschmidt

According to Principles of Sufficient Reason, every truth (in some relevant group) has an explanation. One of the most popular defenses of Principles of Sufficient Reason has been the *presupposition of reason* defense, which takes endorsement of the defended Principle of Sufficient Reason to play a crucial role in our theory selection. According to recent presentations of this defense, our method of theory selection often depends on the assumption that, if a given proposition is true, then it has an explanation, and this will be justified only if we think this holds for *all* propositions in the relevant group. I will argue that this argument fails even when restricted to contingent propositions, and even if we grant that there is no nonarbitrary way to divide true propositions that have explanations from those that lack them. Further, we can give an alternate explanation[1] of what justifies our selecting theories on the basis of explanatory features: the crucial role is not played by an endorsement of a Principle of Sufficient Reason but rather by our belief that, prima facie, we should prefer theories that exemplify *explanatory power* to greater degrees than their rivals. This guides our theory selection in a manner similar to *ontological parsimony* and *theoretical simplicity*. Unlike a Principle of Sufficient Reason, our belief about explanatory power gives us a prima facie guiding principle, which provides justification in the cases where we think we have it, and not in the cases where we think we don't.[2]

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1. Alexander Pruss (2006) discusses this option but rejects it, due to worries that we would not be able to provide justification for our belief that explanatory power is truth-tracking (at least, generally enough to support all of the instances of theory selection which we'd like to). More on this in §3.
2. The fact that it is merely a prima facie principle is crucial in blocking a direct argument from this view about explanatory power to Principles of Sufficient Reason. If we thought that the most explanatory theory is *always* the correct one, then the PSR would claim victory over its rivals. But the prima facie nature of this principle allows for overriding considerations (such as the belief that in some cases there are truths for which we cannot even imagine how an explanation might go; note, for instance, this volume's primary subject matter).

In §1 I will present the recent version of the *presupposition of reason* defense that has been put forward by Michael Della Rocca and Alexander Pruss.[3] In §2, I will discuss cases where we seem tempted to posit unexplained truths, and I will focus on the Problem of the Many. This case is particularly difficult for the proponent of the inductive presupposition of reason defense, because it seems relevantly like a paradigm case where our theory selection is based on an attempt to avoid unexplained truths, but in this case we do not reject the theory that requires an unexplained truth. I will argue that this gives us good reason to reject the inductive argument for Principles of Sufficient Reason. Finally, in §3, I will briefly explain how appealing to explanatory power as a truth-tracking theoretical virtue can explain our differing responses to these very similar cases, while allowing us to claim that both responses are justified and without requiring us to accept a Principle of Sufficient Reason.

1 THE PRESUPPOSITION OF REASON DEFENSE

Principles of Sufficient Reason (PSRs) are formulated in a variety of ways. The fully general PSR is the following:

> *The General Principle of Sufficient Reason (G-PSR)*: Every true proposition has an explanation.

There are also restricted versions.[4] The two that will be relevant in the following discussion are the following.

> *The Principle of Sufficient Reason for Contingent Truths (C-PSR)*: Every contingent, true proposition has an explanation.

> *The Principle of Sufficient Reason for Necessary Truths (N-PSR)*: Every nonanalytic, necessary, true proposition has an explanation.

What one's PSR amounts to will also depend on the features we require explanations to have. I will not take a stand on whether the explanation must be complete (explaining every component of a proposition), or ultimate (in that it does not itself stand in need of explanation), or sufficient (in that it

3. Pruss 2006: ch. 16, and Della Rocca 2010.
4. However, not every restriction of the domain of propositions will result in a PSR; for instance, I believe that there is an explanation for why it's true that there's a Christmas tree in my house. However, I do not take myself to thereby endorse a PSR. When I speak of defenders of the *presupposition of reason* defense claiming that we must endorse a PSR in order for some group of beliefs to be justified, I am not suggesting that they believe that a purported PSR restricted to any group of propositions you choose will be sufficient.

entails what it explains). Further, if one finds something particularly problematic about talk of propositions, PSRs can be taken to be about events, states of affairs, facts, or the existence of objects. My comments will apply regardless. Further, the worries I raise in this paper will be problematic for every PSR that is either fully general or nonarbitrarily restricted.

One of the most popular defenses of PSRs has been the *presupposition of reason* defense. Leibniz claimed that we cannot successfully engage in reasoning without endorsing a PSR. More moderate presentations of the defense simply claim that some of the beliefs we take to be justified will not be if we do not endorse the PSR being defended. One might claim that we presuppose the relevant PSR when we form these beliefs and that it plays a direct and crucial role in justifying those beliefs. But an alternative means of arguing for PSRs has been presented,[5] on which it's noted that, in forming such a belief, we often make an assumption that, for some particular proposition in some class *C*, if that proposition is true, then it has an explanation. Further, within *C*, it does not seem that there is a nonarbitrary way to divide propositions with respect to this feature. And if there is not a nonarbitrary division, then we will not be justified in simply assuming any particular member of *C* has this feature unless every member of *C* does. So, if we take ourselves to be justified in forming the beliefs in question, we should believe that there is an explanation of every truth in *C*. If we take *C* to be the class of contingent propositions, then we should endorse the PSR.[6] In other words:

The Inductive Argument for the PSR

1. For some proposition,[7] *P*, which is a member of class *C*, and some theory about *P*, *T*, our justifiably assuming that if *P* is true, then *P* has an explanation, plays a crucial role in our justified acceptance or rejection of *T* (if it is justified).
2. Our acceptance or rejection of *T* is justified.
3. *So*, we justifiably assume that there is an explanation of *P*.
4. For any proposition, *Q*, if *Q* is a member of *C*, then *Q* is relevantly similar to *P*.[8]

5. Pruss 2006: ch. 16, and Della Rocca 2010.
6. Michael Della Rocca (2010) presents this argument, but he does not restrict the class of truths. He argues for the G-PSR, requiring explanations for all necessary truths as well.
7. This argument could just as easily involve states of affairs, events, or the existence of entities. Substitute as you prefer.
8. By 'relevantly similar to' here, I do not mean to imply that they are alike with respect to whether, if true, they have explanations. Rather, I intend to claim that they are alike with respect to whether there is anything that *grounds* their having an explanation. If there is not, they may still differ with respect to whether they have explanations, but no nonarbitrary division between them can be drawn to explain why.

5. *So*, we should believe that for any truth, *Q*, that is a member of *C*, there is an explanation of *Q*.
6. *So*, we should believe the Principle of Sufficient Reason about truths that are members of *C*.

A version of this argument can be given for each brand of PSR. If the relevant class of propositions, *C*, contains all and only the contingent propositions, then the argument will be for the C-PSR. I'll call this the Contingent Inductive Argument (C-IA). If the relevant class of propositions contains all and only the nonanalytic, necessary propositions, then it will provide an argument for the N-PSR. I'll call this the Necessary Inductive Argument (N-IA).[9]

There are many ways to respond to these inductive arguments. For instance, we might reject premise (4), claiming that we *can* draw a nonarbitrary division between members of the relevant class, to explain why some true claims in *C* have explanations and others don't. For instance, if *C* is restricted to contingent propositions, and we think that explanations necessitate their explananda, we may claim that merely all of the contingent truths that do not describe instances of agent causation have explanations.[10] For the moment, I am going to set aside this sort of worry, grant that premise (4) is true (at least, for the C-IA and N-IA), and examine other alternatives for responding to the argument. I will return to worries about this premise in §2.4.

2 FISSION AND THE PROBLEM OF THE MANY

In presenting the inductive argument for the C-PSR, we might support premise (1) by pointing to ordinary cases where we expect explanations. For instance, suppose we find small blue handprints along the wall, and we notice that the blue frosting is gone from its bowl and some is on the hands, face, and torso of a nearby five-year-old. When wondering what happened, we will not be tempted even for a moment by the alternative the child wishes to bring to our attention, namely, that the handprints are on the wall for no reason, that they are *simply there*. But if truths about events like these all have explanations, on what grounds could we claim that there is not an explanation of a truth describing a larger event, say, one that happens to include all of the smaller events?

To support premise (1) of the inductive argument for the N-PSR (or, as Della Rocca does, the G-PSR), we must present cases where, for some necessary proposition, we assume that if it is true, it must have an explanation. Della Rocca provides a host of examples, among which are our rejection of

9. This version of the inductive argument can be found in Pruss 2006: 12–13.
10. Pruss (2006) defends the C-PSR while rejecting the claim that explanations must necessitate their explananda, appealing to God's free action in explaining the existence of the universe.

dispositional differences between qualitative duplicates, our endorsement of the Uniformity of Nature, and our response to Wiggins's and Parfit's *fission* cases.[11] I'll focus on the last of these.

Here is the structure of the rest of this section. I will present two metaphysical puzzles: fission cases and the Problem of the Many. I will note that in the fission case, we reject a view that requires an unexplained truth but that in the Problem of the Many, we're compelled to accept a view that requires an unexplained truth. I will not take a stand on whether the relevant (nonanalytic) propositions, if true, would be contingent or necessary. However, I will claim that the similarities between the cases suggest that, if true, the propositions would either both be contingent or both be necessary. I will then present this dilemma: if they are contingent, then the unexplained truth required in response to the Problem of the Many will be a straightforward counterexample to the C-PSR (and any PSR that entails it). If they are nonanalytic and necessary, we have a counterexample to the N-PSR and should reject the N-IA. And if we are justified in rejecting the unexplained truth in the fission case while accepting the unexplained truth in response to the Problem of the Many, then the similarities between the N-IA and C-IA, in conjunction with our belief that the necessary propositions are at least as hard to nonarbitrarily divide as the contingent ones, should lead us to also reject the C-IA. Thus, regardless of what we take the modal statuses of the relevant propositions to be, we should reject the C-IA. Rejecting this argument is compatible with endorsing the C-PSR, but we no longer have this piece of inductive support for it. Let us begin.

Fission Cases

Consider a case where a subject, *S*, is cut in two, and each half is immediately paired up with a newly created replacement of the half it just lost, so now it appears there are two people, Lefty and Righty. That is, prior to the fission, a person, *S*, is made of two halves, *L* and *R* (and we'll suppose *L* and *R* are relevantly similar). Then, *L* and *R* are separated, but each is immediately paired with a new half that is relevantly similar to the old one. Post fission, there seem to be two people: Lefty, made of *L* and *R**, and Righty, made of *L** and *R*.[12]

There are many things you can claim about this case: you might think that no subject can survive such fission, or you might think that in any such case, there were two coincident people to begin with and they simply part ways when fission occurs.[13] However, according to one response, there is a single person at the start, and either that person survives as Lefty, or the person survives as Righty, but not both. We tend to reject this alternative simply because we assume that, if the subject in these circumstances survives as one rather than the other, then there must

11. Della Rocca 2010: 2–6.
12. These cases have been presented by Wiggins (1967: 50) and Parfit (1984: 254–61). The presentation of fission cases that I've used is borrowed from Ross (unpublished).
13. For the four-dimensionalist version of this view, see Lewis 1976.

be an explanation for this. But if the person is split evenly, and we imagine that the halves of the person were relevantly similar to begin with, and that the new halves they're paired up with are also relevantly similar, then Lefty and Righty will each be equally good candidates for being identical to our subject. Without any relevant dissimilarities, it seems nothing can explain why the subject in these circumstances is, after the fission, made of one pair of halves rather than the other. That is, the following proposition must lack an explanation:

T1: In circumstances *C*, where Lefty and Righty are relevantly similar, exactly one person undergoes fission, and post fission, that person is made of *L* and *R** (/*L** and *R*) rather than *L** and *R* (/*L* and *R**).

Della Rocca claims that, in reflecting on a variety of cases like these, we should think that if *this* proposition's truth would require an explanation, then any (at least nonanalytic) truth must.

However, many philosophers take there to be some nonanalytic, necessary truths that lack explanations. For instance, it is not uncommon to think that there is a true, general moral principle which is both necessary and lacks an explanation. Or that there are some necessary, unexplained rules governing part/whole relations (like Strong Supplementation or Unrestricted Composition). And it is not uncommon to take some (but not all) truths of mathematics to be nonanalytic, necessary, and without explanation.

The Problem of the Many

I'm now going to focus on one piece of motivation for thinking that there is a truth that lacks an explanation. We will return shortly to the question of its modal status.

Consider Unger and Geach's Problem of the Many.[14] Though the problem can be raised for a variety of objects, I'll follow Hud Hudson's presentation, focusing on the problem as it applies to people.[15] There is some group of atoms that makes up you. (For the nonmaterialist who may think souls play

14. Unger 1980, and Geach 1980.
15. Hudson 2001: ch. 1. Focusing on the problem as it applies to people allows us to rule out some responses which we might think were acceptable if, for instance, we were talking about clouds instead. For instance, one response to the Problem of the Many is to say that there are many different spatially overlapping objects of the relevant kind whenever there is one object of the relevant kind. This response might not seem bad when the relevant objects are clouds, but it seems very problematic if the relevant objects are people. Another example: Peter van Inwagen's nihilism with respect to all nonliving things (van Inwagen 1990b) may help him escape this puzzle with respect to things like clouds, because he will deny that there are any clouds and thus needn't claim that there are many overlapping clouds in order to avoid arbitrariness. But this response does not help him when the puzzle is raised for people. (Van Inwagen instead responds by saying that claims about parthood can be true to degrees other than 1 and 0.)

an important role in what makes up a person, consider this problem as it applies to, say, ants, or peonies.) But there is another group of atoms that has all the same members, minus an atom right at the tip of your left pinkie finger, and with the addition of an atom right off the tip of your right pinkie finger. These two groups of atoms seem to be equally good candidates for being all and only the atoms that make up a person. However, we want to say that there is exactly one person overlapping the space you occupy. Thus, exactly one of these groups of atoms succeeds in composing a person, and there is no explanation for why it is one group rather than the other that is successful, given these circumstances (which include the arrangement of the atoms and the like).

This problem is frequently taken to be paradoxical because we are resistant to this arbitrariness that is involved in what is otherwise the preferable solution. However, the other solutions, which involve things like the denial that there are any people, the positing of many spatially overlapping people,[16] or the positing of ontological vagueness, seem even more problematic.[17] Because we seem to have no other good alternatives, we may accept that there are some unexplained truths.

If we *do* think that this is an unexplained fact, then we have a counterexample to the G-PSR. Further, if we think this unexplained fact is contingent, it will also be a counterexample to the C-PSR. If we think it is necessary, we should reject the N-PSR, N-IA, and, I will argue, the C-IA. But what is this truth's modal status?

The Unexplained Truth as Contingent

First, we should specify exactly which proposition we're claiming is unexplained. It is not simply this (where we're taking G1 and G2 to be two overlapping groups of atoms which are equally good candidates for composing a person):

T2: The atoms in group G1 rather than those in G2 compose a person.

If T2 is true, it does seem to be contingent. For the atoms in G1 could have failed to exist, or they could have existed but been scattered across the

16. We focused on only two relevantly similar groups of atoms, but there are many, many overlapping groups that seem to be equally good candidates for making up a person anytime one group succeeds in doing so.
17. There are other responses as well. For instance, Hud Hudson presents the claim that each relevant group of atoms *does* make up a person but that the distinct groups each make up the same person, and that person is simply multiply located (and has different parts at each location he or she occupies). However, Wasserman (2003) has raised worries about this solution's inability to solve a higher-order version of the Problem of the Many. Also, I have argued that we should avoid positing even the mere possibility of multilocation, due to its incompatibility with central axioms of mereology (Kleinschmidt 2011).

cosmos. However, T2 seems to have an explanation (though perhaps not an ultimate one). For instance, we might explain it by saying: (i) in any world with these circumstances, arrangement of atoms, and histories of atoms (etc.), the group of atoms with feature *F* will compose a person, and the group of atoms with feature *H* will not compose a person; (ii) the actual world has the circumstances, arrangement of atoms, and histories of atoms (etc.) referred to in (i), and G1 has feature *F* and G2 has feature *H*. We might supplement this explanation by describing how the atoms came to be in those arrangements. The relevant truth that *lacks* an explanation seems to be this one:

T3: Given the circumstances, and the arrangement and histories[18] of the atoms in the world, the atoms in group G1 compose a person and the atoms in group G2 do not.

It is plausible to take T3 to be necessary. However, theorists will think it is contingent if they think that composition facts involving persons do not supervene on facts about the arrangement and histories (and the like) of atoms in the world.

Further, if you think that intrinsic duplicates are possible, you might be persuaded by the following argument for the contingency of T3. (Though anyone who thinks intrinsic duplicates are impossible, especially due to independent tension with a PSR, will not be swayed.)

The Problem of the Many and Unexplained Contingent Propositions

1. Possibly, there are two groups of atoms, G1 and G2, which have the following features: (i) G1 and G2 overlap spatially and share almost all of their members, (ii) G1 and G2 are intrinsic duplicates of one another, (iii) G1 and G2 bear relevantly similar relations to all of the other entities in their world (with the exception of parthood relations),[19] and (iv) G1 composes a person, or G2 composes a person, but not both.
2. If two groups of atoms, G1 and G2, have the features described above and are in circumstances *C* (which include facts about the arrangement and histories of all of the atoms in the world), and G1 rather than G2 composes a person, then there exists a possible world where a duplicate of G2 composes a person in circumstances *C*.

18. I hereby cancel any implication that I think the arrangement and history of the atoms are all that's relevant. If there are other relevant features (and they don't involve haecceities), consider them included here.
19. So, for instance, for any distance relation, *R*, there exists an atom, *x*, that G1 bears *R* to iff there exists an atom, *y*, that G2 bears *R* to. However, it will not follow that the groups are indiscernible.

3. If there is a possible world where a duplicate of G2 composes a person in circumstances *C*, then, possibly, G2 composes a person in circumstances *C*.
4. *So*, for any groups of atoms with the features described in (1), if one group rather than the other composes a person in some set of circumstances, then this is a contingent truth.

So, for instance, we can imagine a person-involving instance of the Problem of the Many involving groups of atoms which mirror one another perfectly.[20] And we can imagine that those atoms are embedded in a world with similar features: for any atom that is, say, exactly 300 light-years to the left of a member of our first group of atoms, there is an atom that is 300 light-years to the right of the counterpart member of our second group of atoms. There may still be irrelevant differences between those faraway atoms, however; for instance, perhaps two subatomic particles to the far, far left of our first group have the same spin, and the corresponding subatomic particles to the far, far right of our second group differ in spin from one another. These differences in faraway atoms, however, will not be relevant for the composition of persons.

A similar argument can be given for the claim that T1, the explanation-lacking proposition that fission cases drew our attention to, would be contingent if it were true:

Fission and Unexplained Contingent Propositions

1. Possibly, a fission case, *F*, occurs where Lefty and Righty (as well as *L*, *R*, *L**, and *R**) are intrinsic duplicates,[21] and there are no important differences in the relations they stand in to objects disjoint from *L*, *R*, *L**, and *R**.[22]
2. If in *F* exactly one person undergoes fission, and that person survives as Lefty rather than as Righty, then there exists a possible world where

20. Though the two groups needn't be incongruent counterparts. For instance, we can stipulate that the groups are embedded in space extended in more dimensions than the groups are, so our groups of atoms can be duplicates in the same way that a 'p' and 'q' embedded in 3-dimensional space can be duplicates—though, again, if we're worried that positing intrinsic duplicates begs the question against a PSR, we can allow for irrelevant differences between them. See discussion on this below.
21. Or, at least, similar in every minimally important respect.
22. Ross (unpublished) provides an example of this sort: he has us consider a fission case involving a subject made up of cells such that each cell's halves are intrinsic duplicates of one another. He then has us imagine that fission occurs when the halves of each of these cells are all simultaneously separated from one another and provided with new duplicate halves to replace the now-displaced ones. (We can imagine that the arrangement of the cells is held fixed.)

exactly one person undergoes fission, and that person survives as an intrinsic duplicate of Righty.[23]

3. If there is a possible world where the subject who undergoes fission survives as an intrinsic duplicate of Righty, then, possibly, the subject who undergoes fission survives as Righty.
4. *So*, if in a fission case where Lefty and Righty are intrinsic duplicates, exactly one person undergoes fission, and that person survives as Lefty rather than as Righty, then it is a contingent truth that in a case like this the subject survives as Lefty rather than as Righty.

Of course, there are several ways one might reject these arguments. For instance, a transworld identity theorist may deny the third premise of each. And a counterpart theorist might deny the third premise if he or she believes worldmates cannot be counterparts. Alternatively, one might present this dilemma: either the intrinsic duplicates mentioned in the first premise of each argument are indiscernible (i.e. not only do they have all of the same qualitative intrinsic features, but they have all the same qualitative relational features as well), or they are not. If they are, we may deny the first premise, due to thinking that distinct indiscernibles are impossible. If they are not, then we can deny the third premise. That premise claims that, for any possible x and y, we can infer that x is possibly G if, possibly, y is G. But, our detractor may claim, there's a restriction: we can make this inference only when, in the world where y is G, nothing is more similar to how x actually is than y. I think there is good reason to reject this restriction,[24] but if you accept it, here's how it can be used to cause trouble. If the intrinsic duplicates appealed to in my arguments are distinct indiscernibles, then they will meet this requirement and we do not have a problem. But if, for instance, Lefty stands in a relation that Righty does not stand in, then Lefty will not be at least as similar to Righty as anything else in its world, because Righty will be more similar to itself than Lefty is to it. Thus, we will have grounds for denying the third premise.

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23. For the four-dimensionalist, this premise will read: If in F exactly one person undergoes fission, and the person's postfission temporal parts are all and only Lefty's postfission temporal parts rather than Righty's, then there exists a possible world where there is exactly one person who undergoes fission and the person's postfission temporal parts are all and only the members of a group of temporal parts that is an intrinsic duplicate of the group of all and only Righty's postfission temporal parts.
24. For instance, imagine a world that contains a bunch of qualitatively indiscernible statues. It seems plausible that one of the statues could have been shorter while the rest stayed the same. But then, in that other world, the other statues will be more like the actual statue than the shorter statue will be. Thus, if we endorse the proposed restriction, we will have to deny that this sort of unique shortness is possible for our statue.

I have mentioned just some of the ways of responding to my arguments, and I do not want to give defenses of those arguments here. Instead, I merely wish to note that there is *some* motivation for thinking that, if we posit unexplained facts due to the Problem of the Many, we ought to take those facts to be contingent. And if we do, then we must reject the C-PSR and G-PSR.

The Unexplained Truths as Necessary

What if, instead, we take the T1 and T3 to be necessary truths rather than contingent ones? The two claims do not seem to be analytic. Very specific facts about which arrangements of atoms in which circumstances will result in the composition of a person may be true as a matter of necessity, but they do not follow from, say, the analysis of *person*. So, if T1 and T3 are necessary, then they are nonanalytic necessary truths. And if T3 is true, then we have a counterexample to the N-PSR and G-PSR.

If we also believe that we are justified in rejecting T1, then we have a problem. Because it seems that our rejection of T1 depends on the justified belief that T1 must, if true, have an explanation, and since there is no explanation available, it must not be true. But how can our rejection of T1 be justified when we fail to reject a relevantly similar proposition, T3? That is, it does not seem that we can draw a nonarbitrary division between T1 and T3. So something is wrong with the N-IA. Either we are not justified for the reasons we assumed, or there really is a nonarbitrary way we can divide the nonanalytic, necessary truths with explanations from the nonanalytic, necessary truths without them.

Here is how this causes trouble for the C-IA. The two arguments are very similar. The methodology we use in rejecting T1 seems *just like* the methodology we use in rejecting the five-year-old's suggestion that the blue handprints on the wall were *simply there*. So the first premise of the C-IA and the first premise of the N-IA will stand or fall together: whatever explains the justification for our theory selection in one case should also explain it in the other.

Further, it seems that if we're justified in endorsing (4) and the inference to (5) of the C-IA, then we'll be justified in endorsing them for the N-IA as well. T1 and T3 are the same kind of proposition, about the very specific conditions under which some entities can compose a person. It seems remarkably hard to find any grounds for T1's having an explanation that T3 would lack. Thus, it is unclear how we might be able to draw a nonarbitrary division between these propositions that would allow us to reject one on the basis of its not having an explanation but accept the other in spite of its lacking an explanation. If, in spite of this significant similarity, there *is* a nonarbitrary difference between T1 and T3, then premise (4) of the N-IA will false. And if a lack of a nonarbitrary difference between T1 and T3 does not mean we should treat them similarly, then the inference to (5) is false. But if we must opt for one of these options with such remarkably similar

propositions as T1 and T3, then what hope can we have of endorsing (4) and (5) for the wide range of contingent truths? If the N-IA fails in this way, it seems the C-IA will as well.

So, if we believe that T1 and T3 are necessary, nonanalytic truths, and that we are justified in rejecting T1 and in accepting T3, then the N-IA fails. But any way in which it fails gives us reason to reject the C-IA as well. Thus, even if T1 and T3 are necessary, the C-IA does not give us sufficient motivation to endorse C-PSR.

Generalisation

There are two important objections I'd like to note. First, one might respond by claiming that I have given the wrong response to the fission case or to the Problem of the Many. For instance, someone who believes there are no people at all will think that the Problem of the Many does not give us reason to endorse an unexplained proposition like T3. If this is correct, then I have not yet shown that we can justifiably reject an unexplainable proposition in one case and endorse an unexplainable proposition in another. Similarly, one might claim that T1 is a plausible alternative for what happens in fission cases and that we shouldn't expect it to have an explanation. Again, if this is correct, I will not have succeeded in showing that these relevantly similar propositions differ with respect to whether they have explanations.

Alternatively, one might respond by claiming that T1 and T3 are not relevantly similar after all, because they differ in their modal status. Consider, for instance, someone who believes there can be distinct indiscernibles and accepts my argument that in the fission case, if T1 is true, then it is contingent. However, suppose this same theorist believes that in a world with the sort of symmetry required for there to be mostly overlapping groups of atoms that are qualitatively indiscernible, any people that exist and are made of such atoms will have a member of one group of atoms as a part only if they have the corresponding member of the other group of atoms as a part. This theorist will reject premise (1) of my argument for the contingency of T3. Hence, the theorist can claim that T1 is contingent and T3 is necessary, and so we have a nonarbitrary division between them. (But notice that any theorist rejecting the possibility of distinct, qualitatively indiscernible entities will not endorse this response.)

Both of these responses would be quite worrisome if the problems I'm raising depended on our responses to these two particular puzzles. However, the points I'm making are more general. The idea is this: it is very common for philosophers to think that some nonanalytic, necessary truths lack explanations, while others have them. But it is notoriously difficult to nonarbitrarily divide those two groups of propositions from one another. It is not at all clear what (if anything) it is in virtue of that some of these propositions have explanations and others do not.

For example, you might think that, necessarily, no composite objects are point-sized. And you may think this has an explanation that contains the

following components: (i) to be point-sized is to lack extension, and to be composite is to have more than one part, so anything composite and point-sized will have colocated parts, and (ii) necessarily, colocation is impossible. But (ii) is an excellent candidate for being an unexplained truth; at the very least, we will not reject it on the basis of a lack of explanation. And a host of other truths fall into this category, like the view that any objects have a fusion, or the view that objects persist four-dimensionally, etc. It is not clear what we can say to divide these truths.

Similar worries arise involving truths about mathematics and some logics; various axiomatisations are possible, and we take the axioms to be unexplained. But if we think math is not analytic, then we will have some nonanalytic, necessary truths, but they'll be so similar to the explained truths that we can debate about which truths go into which categories.[25] There may be examples in other domains as well.[26]

Some contingent truths do seem relevantly dissimilar from the rest. For instance, the truth that there's something rather than nothing seems dissimilar from ordinary contingent claims. If we think that propositions like that one lack explanations, we may hope to be able to nonarbitrarily separate them from the propositions that do have explanations. But in the case of nonanalytic necessary truths, the project looks harder. And yet, in spite of not being able to draw a nonarbitrary division among these truths, we reject some necessary claims on the basis of their not having explanations, just as we do with some contingent propositions. The C-IA tells us that use of this methodology gives us good reason to accept the C-PSR. But we know this can't be right in the necessary case. And if the necessary argument fails, we can expect the same of the contingent one.

3 THE EXPLANATORY POWER OF EXPLANATORY POWER

If the C-IA and N-IA fail, then we cannot use the C-PSR or N-PSR to explain our justified rejection of theories that require unexplained truths. How, then, might we explain it?

25. This point is made in Pruss 2006: 12.
26. For example, consider these propositions: (i) It is impermissible to cause pain for no reason; and (ii) it is impermissible to throw acid on someone for no reason in conditions where that will cause pain. The first principle is a candidate for a fundamental moral truth, but the second isn't. In fact, the second may be explained via appeal to the first. But it is not the case that, for any necessary truths, if one is stronger than (and entails) the other, and they are equally natural, then the stronger truth explains the weaker one. Consider: (iii) If one object is part but not all of another object, then the second object has a part that is not had by the first object; (iv) if one object is not part of another, then there is some part the first object has that the second object does not. Principle (iii) is Weak Supplementation, and is entailed by (iv), Strong Supplementation (Simons 1987: ch. 1). But it is commonly believed that (iii) is not explained by (iv). (Note: This will only be an example of the sort we want if we take Weak Supplementation to be nonanalytic.)

Pruss has discussed an alternative, namely, that in these cases we are making inferences to the best explanation.[27] Of course, sometimes the theory we're endorsing simply states that there *isn't* an explanation, so I'll describe it in this way: the general principle doing the work in justifying our responses in many of these cases is not a principle saying that, for some group of propositions, *every* member in the group has an explanation. Instead, the principle is this:

EP: Explanatory Power is a truth-tracking theoretical virtue.

That is, all else being equal, we should take the theory with more explanatory power to be more likely to be true. Further, we attach significant weight to this theoretical virtue: it takes a lot to make something's *completely lack* of an explanation seem worth accepting.

So, for instance, in the handprint case, we reject the theory that the handprints simply appeared for no reason, because we can see how some explanations might go, and some of the explanations are such that endorsing them won't have disastrous theoretical consequences. Similarly, in the fission case, we reject the alternative on which exactly one person enters the process and then survives as exactly one of Lefty or Righty, because we can see how some alternative theories might go, and at least some of these theories (such as, for instance, the four-dimensionalist's response) do not have disastrous consequences.[28]

However, in the Problem of the Many, there are no alternatives that do not seem highly problematic. For instance, it is significantly implausible that there are many people overlapping where you are right now. It is also significantly implausible that there are no people. Finding ourselves only with alternatives that are revisionary to an unacceptable extent, we choose the option that lets us say a host of completely reasonable things but that requires that at least one of those lacks an explanation.

Thus, since EP is a principle guiding theory acceptance rather than a principle drawing divisions between things in the world, it allows us to give different responses to cases which seem relevantly similar, at least with respect to whether we'd otherwise expect an explanation to exist. In this way, the principle works like Ontological Parsimony. We tend not to endorse a fixed, general principle that says that any simple state of affairs involves at most n kinds of entities. We might initially think that such a fixed principle can help us explain our justified rejection of theories that require us to posit more than n kinds of entities. But the principle is too inflexible: it will fail to account for our occasional justified acceptance of theories that violate the principle.

27. Pruss 2006: ch. 16 and 17.
28. Though this is contentious. For arguments that four-dimensionalism itself has disastrous consequences, see, for instance, Thomson 1983 and van Inwagen 1990a. For arguments that each response to fission cases has disastrous (or at least highly revisionary) consequences, see Ross unpublished.

However, we can instead simply think that, all else being equal, the theory which involves positing fewer sorts of entities is more likely to be true. If we think that Ontological Parsimony is truth-tracking in this sense, then it can justify our rejection of less parsimonious theories in some cases (where other considerations don't outweigh it) and fail to justify such rejections in other cases (where we think other considerations push us to accept the less parsimonious theory).

Pruss denies that something like EP is doing this justificatory work for us. Among his reasons is this: we might wonder why, if there are *some* unexplained truths, we are so reluctant to posit them in any given case. Why does it take a complete lack of nondisastrous alternatives to get us to accept an unexplained proposition?[29]

In response to Pruss, we might give an analogy.[30] We tend to be very reluctant to explain a student's being late for class via appeal to their being hit by lightning, unless the evidence for that explanation is quite strong. This is so even in spite of our knowing that people are sometimes struck by lightning. And we have this reluctance even when we have not yet seen the student, and thus cannot tell the student apart from those who are lightning-struck.

In the lightning case, we can explain our reluctance by noting that we justifiably believe, partly due to induction, that lightning strikes rarely. We might hope to give a similar explanation of our endorsement of EP. However, worries have been raised about appeals to induction for such an explanation.[31] Addressing these worries is beyond the scope of this paper. However, it is worth noting that similar questions arise involving ontological parsimony. We can see that, in some cases, several kinds of entities are required to explain some state of affairs. Why, then, in other cases where the data don't *require* us to posit many kinds of entities, are we very reluctant to do so? What justifies our use of the principle of ontological parsimony? It seems reasonable to hope that whatever justifies our use of this principle will also justify our use of EP.

Something seems to be playing the role of justifying our explanation-related beliefs. I have given reason to think that it is not a PSR. EP is perfectly suited for playing the role and justifies exactly the beliefs we would like it to. And though we have yet to explain why we are licensed to believe EP, it seems to work in a way relevantly similar to other principles that are frequently taken to govern our reasoning.

Of course, nothing in this paper tells us that there is no true PSR or that there is not an explanation for why there is something rather than nothing. However, at least we can take some degree of comfort while tackling that

29. Pruss 2006: ch. 17.
30. This response was suggested by Jake Ross.
31. Pruss 2006: ch. 16.

formidable topic: the justification of our beliefs in a wide variety of other areas does not directly depend on the outcome.[32]

REFERENCES

Della Rocca, M. (2010). 'PSR', *Philosopher's Imprint* 10, no. 7: 1–12.
Geach, P. (1980). *Reference and Generality* (3rd ed). Ithaca, NY: Cornell University Press.
Hudson, H. (2001). *A Materialist Metaphysics of the Human Person*. Ithaca, NY: Cornell University Press.
Kleinschmidt, S. (2011). 'Multilocation and Mereology', *Philosophical Perspectives* 25: 253–76.
Lewis, D. (1976). 'Survival and Identity', in Rorty, A.O. (ed.). *The Identities of Persons*. Berkeley: University of California Press, 17-40.
Parfit, D. (1984). *Reasons and Persons*. Oxford: Oxford University Press.
Pruss, A. (2006). *The Principle of Sufficient Reason: A Reassessment*. New York: Cambridge University Press.
Ross, J. (Unpublished). 'Any Way You Slice It: Fission, Fusion, and the Weighing of Welfare'.
Simons, P. (1987). Parts: A Study in Ontology. Oxford: Oxford University Press.
Thomson, J.J. (1983). 'Parthood and Identity Across Time', *Journal of Philosophy* 80: 201–20.
Unger, P. (1980). 'The Problem of the Many', *Midwest Studies in Philosophy* 5: 411–67.
Van Inwagen, P. (1990a). 'Four-Dimensional Objects', *Nôus* 24: 245–55.
———. (1990b). *Material Beings*. Ithaca, NY: Cornell University Press.
Wasserman, R. (2003). 'Review of Hud Hudson's *A Materialist Metaphysics of the Human Person*', *Philo* 6: 307–13.
Wiggins, D. (1967). *Identity and Spatio-Temporal Continuity*. Oxford: Basil Blackwell.

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