ON SOME LEIBNIZIAN ARGUMENTS FOR THE PRINCIPLE OF SUFFICIENT REASON

Introduction

It is typical, and indeed natural, to see Leibniz's early, middle, and late philosophy as being driven in large part by the Principle of Sufficient Reason (henceforth PSR). Leibniz writes around 1679 that it "must be considered one of the greatest and most fruitful of all human knowledge, for upon it is built a great part of metaphysics, physics, and moral science."[1] In the *Monadology* (1714), he writes that it is one of the "two great principles" on which all of our reasoning depends.[2] And in controversy with Georg Stahl (1709) he writes that "among the first principles of reasoning is that nothing happens or is without a reason."[3][4]

Since Leibniz appeals to the PSR as a first principle, it is tempting to think that he simply accepted it without demonstration or proof. Appearances are deceiving, however. In some of his early writings, Leibniz attempts to give both a demonstration of the principle and a less rigorous argument for its truth.[5] The goal of this paper is to examine and assess those arguments. Specifically, I want to examine a family of arguments given by Leibniz in some papers from between about 1671-1676 (these being *Demonstration of Primary Propositions*, *De Summa Rerum*, and *Confessio Philosophi*) which purport to establish or demonstrate the

1. Leibniz (1989b, 227)
2. Monadology §§31-2, Leibniz 1989a, 217
3. Leibniz 2016, 17
4. The scope and precise role of the PSR in Leibniz's philosophy is far beyond the ambit of this essay. For some examinations of its role in Leibniz's philosophy, see (though this is by no means an exhaustive list) Carraud 2002, Chapter 5 (probably the most thorough recent survey of Leibniz's use of the PSR), Rodriguez-Pereyra (2018), Frankel (1986), Blumenfield (1995, §5), and Broad (1971, Chapter 2).
5. It is worth noting that by the time of "Primary Truths," Leibniz thinks that the PSR follows from another one of his principles, the Predicate-In-Subject Principle, which states that "the predicate or consequent is always in the subject or antecedent, and the nature of truth in general or the connection between the term of a statement, consists in this very thing." (Leibniz (1989a, 31)) The reasoning goes as follows: "otherwise there would be a truth which could not be proved a priori, that is, a truth which could not be resolved into identities, contrary to the nature of truth, which is always an explicit or implicit identity." (Leibniz (1989a, 31))

following version of the PSR:

(PSR) Whatever exists has a sufficient reason for its existence.

My assessment of these arguments, unfortunately, is generally negative. I will argue that they turn out to be deficient in at least three ways: They either are circular, imply a version of the PSR which Leibniz would reject, or yield only a very uninteresting version of the PSR. From these three lines of evidence, I will conclude that the arguments are failures, although interesting ones.

The structure of the paper is as follows. The first part is devoted to a reformulation and critical examination of the original argument from the *Demonstration*. In Section 1, I examine and slightly reformulate the argument. In Section 2 I examine some critical responses in the literature. I argue that, while their specific arguments are not undefeatable, the basic charge made is correct: The argument is circular.

The second part of the paper is devoted to seeing what happens when we excise the question-begging parts. In Section 3 I derive an interesting but highly counter-intuitive version of the PSR from the definitions Leibniz offers: a thing constitutes a sufficient reason for all of its requisites. In Section 4 I argue that this version of the PSR is problematic on Leibniz's grounds.

The third part of the paper is devoted to seeing what happens if we attempt to get rid of the parts of the argument which imply the seemingly paradoxical version of the PSR. In Section 5 I turn to *De Summa Rerum* and *Confessio Philosophi*. I argue that they contain some arguments which, while similar to the one in the *Demonstration*, avoid the problematic circularity. I then examine the controversial premise of these arguments: all of a thing's requisites constitute a sufficient reason for a thing. I ask whether one might give a Leibnizian argument in its defense; this involves a re-characterization of what a thing's requisites are. I

conclude that, while one can give such an argument, the resulting principle is close to trivial, and hence the PSR which Leibniz derives is uninteresting.

1.

The argument that Leibniz gives for the PSR in *Demonstration of Primary Propositions* goes as follows:

Proposition:
Nothing is without a reason,
or whatever is has a sufficient reason.

Definition 1: A *sufficient reason* for something is something which, once given, that thing occurs.

Definition 2: A *requisite* is something which, when not given, the thing does not occur.

Proof:

(P1) If something occurs, then all its requisites are given
for if one of them were not given, the thing would not occur (by *def.* 2).

(P2) Given all the requisites, the thing occurs,
for if it did not occur, there would be lacking something for its occurrence, i.e., a requisite.

(C1) Therefore, all the requisites constitute a sufficient reason (by *def.* 1).

(C2) It follows that, whatever is has a sufficient reason. Q.E.D.[6]

For the sake of perspecuity, I will attempt to provide a reformulation of this demonstration. We might render his definitions, with a slight modern gloss, as follows:

6. Dascal (1987, 151)

(D1) X is a *sufficient reason* for Y *iff* X's existence/occurrence ensures Y's existence/occurrence.

(D2) X is a *requisite* for Y *iff* X's non-existence/occurrence ensures Y's non-existence/occurrence.[7]

Rutherford (2018) draws attention to a further distinction between mediate and immediate requisites. Immediate requisites are "metaphysically necessary conditions for the existence of things."[8] Mediate requisites, on the other hand, are requisites only by virtue of the ordinary course of nature. In speaking of requisites, I will be speaking of *immediate* requisites.

(D1) amounts to saying that X is a sufficient condition for Y – or, in this case, that X's existence is a sufficient condition for Y's existence. (D2), similarly, amounts to saying that X is a necessary condition for Y – or, in this case, that X's non-existence is a sufficient condition for Y's non-existence. We can now rearrange the argument as follows (hopefully without losing any of the important features of the original):

(P1) If X exists, then if Y is a requisite of X, Y exists.

(P2) If $Y_1, \ldots Y_n$ are all the requisites of X, and $Y_1, \ldots Y_n$ exist, then X exists.

(P3) $Y_1 \ldots Y_n$ constitute a sufficient reason for X.

(C) If X exists, then X has a sufficient reason.[9]

The argument for (P1) is a fairly straightforward inference from (D2). If Y is a requisite of X, then Y's non-existence ensures X's non-existence. Suppose we construe this as meaning

7. For a detailed discussion of this and other senses of requisite and their relation to Leibniz's general metaphysics, see di Bella (2005). See also Carraud (2002, 407-412).

8. Rutherford (2018, 376)

9. Mercer (2001, 343) points out the somewhat remarkable fact that there is no causal language in this version of the PSR at all. She takes this to be evidence for a phenomenalist reading of Leibniz's metaphysics.

something like "if Y does not exist, then X does not exist." Then reasoning contrapositively, this is equivalent to the statement that "if X exists, then Y exists." This is just (P1).

Similarly, the argument for (P3) is straightforward. If (P2) is true, then simply applying (D1) to $Y_1 \dots Y_n$ and X from (P2) gives us that the Y's ensure X's existence. This just is to say that the Y's are (or perhaps their conjunction is) the sufficient reason for X.

2.

(P2), on the other hand, is more problematic. The argument Leibniz gives to justify it goes something like the following. Suppose that X doesn't exist. Then there is some condition for X's existence that is not fulfilled. And this is just a requisite. Thus (reasoning contrapositively) if all of X's requisites exist, then X exists.

The consensus of the literature seems to be that (P2) makes the entire argument circular. One charge is that it assumes the PSR as part of a demonstration of the PSR (as well as, or in addition to, assuming a principle of plenitude). Here is Robert Sleigh:

> Note that the reason given for the second step – i.e., the collection of all the requisites of a thing constitutes a sufficient condition of it – is not a consequence of either definition. Indeed, when applied to the present case, the aroma of question begging fills the air.[10]

And Marcelo Dascal:

> This step in the proof seems to beg the question, for it assumes that there must always be a reason for the non-occurence of a thing, a statement which is obviously a particular case of the principle which the proof is intended to prove.[11]

10. Sleigh (1983, 204)
11. Dascal (1987, 158)

And Brandon Look:

> [A] skeptic could claim that, even if all the necessary conditions (requisites) of x are present, it is still possible that x not exist. In other words, [(P2)] really depends upon the Principle of Sufficient Reason and the thesis that all things (essences) strive for existence. As such, this argument is circular.[12]

And Francesco Piro:

> [(P2)] presupposes a hidden presence of the Principle of Plenitude, at least in the form of a symmetry between the fact of existence of x and the fact of its non-existence. One could find a "reason" for both of these facts. Probably, Leibniz mainly wishes to establish that the analysis of facts can be *complete*. But his justification of this possibility is quite circular.[13]

And Yitzhak Melamed and Martin Lin:

> The question-begging assumption is that all the necessary conditions for something to exist are jointly sufficient for it to exist. Anybody who denies the PSR will not agree with this assumption and it is clearly not encoded in the definitions of requisite and sufficient reason provided by Leibniz.[14]

And finally, Robert Adams:

> [(P2)] seems to beg the question, since anyone who denies the Principle of Sufficient Reason will suppose that when all the necessary conditions of a thing's existence are

12. Look (2011, 204)
13. Piro (2008, 466)
14. Lin and Melamed (2016, §3.2)

> given, there might still remain both a possibility of its existing and a possibility of its not existing.[15]

These assessments are, I think, varying degrees of correct. However, I think the charge of circularity requires a little more finesse.

2.1. **Circularity?** Adams, Dascal, Melamed and Lin, and Look contend that (P2) (or in Adams' case, the justification that Leibniz gives for (P2)) begs the question because it assumes the PSR. More precisely, it assumes a particular version of the PSR: if something doesn't exist, there is a reason for its non existence. But this is not the PSR Leibniz is attempting to demonstrate. Rather, it is that whatever is has a reason for its existence. The PSR they allege he relies on is: whatever does not exist has a reason for its non-existence. These plainly are not the same principle: the first is equivalent to the statement that if something has no sufficient reason for its existence, then it does not exist, which is just the converse of the second. Both are consequences of a stronger PSR ("something exists if and only if it has a sufficient reason for its existence"), but neither straightforwardly implies the other. So on their reading, Leibniz is certainly availing himself of a principle he states nowhere in the definitions or prior premises, but it is not a principle that turns the argument into a *petitio principii*.

I mentioned above that I do not think that the PSR the authors quoted above accuse Leibniz of presupposing is equivalent to the one he sets out to demonstrate. I should probably spell out a bit more clearly why this is the case. As a reminder, the version Leibniz wishes to demonstrate is:

> (C) If X exists, then X has a sufficient reason.

15. Adams (1994, 68)

The version that Adams et. al. think he presupposes is:

(C') If *X* does not exist, then *X*'s non-existence has a sufficient reason.

Facially, these are not the same PSR. (C) deals with existence, and (C') deals with non-existence. One might think that they're logically equivalent, in the sense that one can derive the one from the other. This is not obvious. One way to show that they're not equivalent is to find a situation in which (C) is true but (C') is not (or vice versa). So let us try to find one. Consider the "Incongruent Counterparts" world, where the only thing which exists is a right-handed glove. We can suppose that the glove has a sufficient reason for its existence. Now consider the non-existent left-hand glove. Does it have a sufficient reason for its non-existence? Let's stipulate that it doesn't. Have we entertained anything contradictory?

It is not obvious that we have. All the conditions spelled out in (C) have been satisfied. The antecedent of (C') has been satisfied. However, the consequent of (C') has been falsified. Hence, (C) is true, and (C') is not. This quaint thought experiment does not demonstrate that they are not incompatible. I may have left something crucial out of the above example, or simply not have made a very obvious inference. But what it should show is that the notion that (C) and (C') are logically equivalent, in the sense that the one entails the other, is not *obvious*. This is a prima facie defeater for the charge of circularity.

Lin and Melamed's objection is plausible, but not undefeatable. If the justification for (P2) was not given, then the argument certainly would be circular, in the sense of presupposing the PSR. But Leibniz offers a sub-argument for the premise which does not rely on the same PSR which is to be proven. As we saw above, this is enough to defeat the strict circularity objection. There is, however, a sort of dialectical circularity in deriving one version of the PSR from another. Anyone disposed to reject one version is likely disposed to reject the other as well. While this does not suffice to make the argument strictly circular, it is certainly enough to make it unconvincing.

2.2. **Hidden Premises?** Sleigh and Piro charge Leibniz with introducing principles derived from no previously stated premise or definition. Sleigh thinks that the argument itself, along with the definitions and principles it employs, emerges from thin air, and Piro thinks that it presupposes a sort of principle of plenitude ("whatever can exist, does exist"). Here, I think Sleigh is on a more promising track than Piro. If one reads between the lines a bit, one discovers that the justification of (P2) relies on (P3).

To recap, the justification Leibniz gives is:

(P2.1) If X does not exist, there is something lacking for its existence.

Further,

(P2.2) That something is a requisite.

So,

(P2.3) If X does not exist, then one of its requisites is lacking.

And therefore,

(P2.4) If all requisites of X are given, X exists.

This sub-argument relies the premise that, if X does not exist, then there is some condition for X's existence that is not fulfilled. But, reasoning contrapositively again, this amounts to saying that if there is no condition Y for X's existing that fails to exist, then X exists. These things, Leibniz seems to think, are in fact requisites of X, so the statement becomes

something like "if the *Y*s are all the requisites of *X*, and the *Y*s exist, then *X* exists". Which amounts to saying that

(P2.1') If the *Y*s are all the requisites for *X* then the *Y*s are also a sufficient reason for *X*.

And this is just (P3) in sheep's clothing.

To clarify, I am not claiming that (C) implies either (P2.1) or any of the other premises. Rather, it is that (P3) is presupposed in the demonstration of (P2), which is, itself, used in the demonstration of (P3). As a result, the demonstration of (P3) presupposes (P3) itself. Hence the circularity.

Note that if it were the case that (C) implied (P2.1), we might plausibly be able to claim that (C') is implied by (C). Note how close these two principles are:

(P2.1) If *X* does not exist, there is something lacking for its existence.

(C') If *X* does not exist, there is a sufficient reason for *X*'s non-existence.

It is plausible (though I do not claim here) that (P2.1) implies (C'). In that case, were (C) to imply (P2.1), (C) would imply (C'), undermining the case that I made above that these two principles are independent. But, of course, I am not claiming that (C) implies (P2.1). For note that the quantifiers in (C) range only over existing things, whereas (P2.1) mentions only non-existing things. This was the point of the thought experiment above – to demonstrate that a principle applying to existent things need not apply to non-existing things.

3.

Now we turn to the second set of problems with the argument. In the next two sections I will argue that, if we try to make the argument non-circular, we end up with a version of the

PSR which Leibniz would reject – that a thing constitutes a sufficient reason for its requisites. This claim needs some motivation, and to this I will turn.

Such examinations of alternate versions of the argument might seem superfluous, but I believe they can serve a valuable purpose. They can help us diagnose where the argument goes wrong, and in turn show what goes wrong with the substantive metaphysical principles involved. Indeed, this is what I will argue goes wrong with Leibniz. In turning simply to a version of "sufficient reason" and "requisite" which have to do merely with existence, he commits himself to principles which entail startling conclusions. If these principles are modified slightly but importantly, it turns out that the paradoxical conclusions need not arise – though the PSR which this will yield still needs justification, which he does not give.

First, we should notice is that the definitions Leibniz proffers are not what generates the circularity. (D1) gives a particular metaphysical gloss on the notion of sufficient conditions. It is nothing very foreign. My clapping my hands may be a sufficient condition for my clap-lamp turning on. My holding a match to the burner while the gas is on may be a sufficient condition for the burner coming lit.

Similarly, the notion of a requisite is not at all that mysterious. In the lamp example, the sensor's picking up the waveform resulting from my clap is a necessary condition for the lamp coming lit. In the burner example, the gas tank's being full or the gas line's being connected is a necessary condition of the burner actually coming on. These things are preconditions of the particular events in question.

But something interesting happens when we put the two notions together. More specifically, it turns out that from the combination of these two notions we can derive a PSR which Leibniz would be hard pressed to accept.

It is easier to see how we get there with some resort to first-order logic. We could notate (D1) formally as follows:

(D1) $\forall x \forall y \big(S\,xy \equiv (Ex \supset Ey) \big)$

where $S\,xy$ stands for "x is the sufficient reason of y," and Ex is some sentence (perhaps containing an existential quantifier, perhaps containing an existence predicate; it does not matter which) witnessing the existence of some entity x. Similarly, we can notate (D2) as

(D2) $\forall x \forall y (Ryx \equiv (\neg Ey \supset \neg Ex))$

where Rxy stands for "x is a requisite of y," and Ex is the same as above.

Now something peculiar happens. Note that we have the following equivalence as a matter of propositional logic:

(D3) $\forall x \forall y ((Ex \supset Ey) \equiv (\neg Ey \supset \neg Ex))$

This, when combined with (D1) and (D2), gives us the following principle (I omit the proof):

(D4) $\forall x \forall y (S\,xy \equiv Ryx)$

This principle asserts that x is a sufficient reason for y just in case y is a requisite of x. Things get even more interesting if we accept the following:

(R) Every X has some requisites, $Y_1, \ldots Y_n$

If we accept (R) and (D4) together, this also gets us – with a little intermediate reasoning – that the Y's have some sufficient reason, X. This, then, is the PSR which Leibniz's argument gets us.

4.

It may be easier to examine the problems Leibniz might have with this PSR with some concrete cases. Earlier I gave the following example: A lit match held to a burner constitutes a sufficient condition, all else being equal, for the burner coming lit. If we accept the argument from the previous section, this entails that the burner coming lit is a requisite of a lit match held to that burner. This seems odd until we recall the definition of both requisites and sufficient reasons. Going forward, let's denote the state of affairs p as $\ulcorner p \urcorner$, and let $O\ulcorner p \urcorner$ be a sentence expressing that p obtains. Then this principle says: O ⌜lit match⌝ ensures O ⌜lit burner⌝ if and only if $\neg O$ ⌜lit burner⌝ ensures $\neg O$ ⌜lit match⌝. Here I an switching to states of affairs from facts.

That seems a little better, but only a little. Plainly the state of affairs of the burner's not being lit does *not* ensure that a lit match was not held to it. The gas line may have ruptured a few streets down. Or perhaps the gas tank hooked up to my stove has run empty. If one is sufficiently motivated, one can find any number of states of affairs which, if they obtain, might constitute a sufficient reason for some other state of affairs which do not have that state of affairs as their requisite. It seems, right away, that we have a counterexample.

What to do? Let us return to Leibniz's original PSR. Note that the claim was that *all* the requisites of X, the Y's, constitute a sufficient reason for X. In the counterexample, the problem is just that a multitude of other conditions whose failure would assure $\neg O$ ⌜lit burner⌝. This suggests, in a Leibnizian spirit, the following emendation:

(S') $\forall x \forall Y \big(RYx \supset S\,Yx \big)$[16]

This is the PSR which Leibniz clearly wants to get out of this argument. But of course this is not the PSR we get! Instead, ours is (with the obvious revision):

(D4') $\forall x \forall y \big(RYx \supset S\,xY \big)$

The analysis is more perspicuous if we take a concrete example:

(S") $(\neg O \ulcorner \text{lit burner} \urcorner \supset \neg O \ulcorner \text{Conjunct} \urcorner) \equiv (\, O \ulcorner \text{Conjuct} \urcorner \supset O \ulcorner \text{lit burner} \urcorner)$

where $\ulcorner$Conjuct$\urcorner$ is just the state of affairs gotten by conjoining all the requisites of $\ulcorner$lit burner$\urcorner$. This is based on Leibniz's proposal, where the conjunction of the requisites serves as the sufficient reason for the thing in question. On our analysis, however, the content is quite different:

(D4") $(\neg O \ulcorner \text{Conjunct} \urcorner \supset \neg O \ulcorner \text{lit burner} \urcorner) \equiv (\, O \ulcorner \text{lit burner} \urcorner \supset O \ulcorner \text{Conjunct} \urcorner)$

Here, the state of affairs in question is the sufficient reason for its requisites. This is a truly strange version of the PSR. If every state of affairs has some requisites as we assumed above, then every state of affairs' obtaining is the sufficient reason for the obtaining of its requisites. As a metaphysical principle, this may not be very attractive. For one thing, it inverts the desired relation between a thing (in this case, a state of affairs) and its sufficient reason. A thing's requisites set the stage, as it were, for that thing's occurrence or existence. A thing's

16. This formula can be interpreted in one of two ways; I am agnostic about which. Either Y is a plural variable ranging over sets of entities (facts, states of affairs, what have you) and $\forall Y$ is a plural quantifier (in this case R is a non-distributive predicate; see Linnebo and Nicolas (2008)); or else R is an $n+1$-ary relation, Y an abbreviation for $y_1, y_2, \ldots, y_n$ (where n is the cardinality of R_x), and $\forall y$ an abbreviation for $\forall y_1 \forall y_s \ldots \forall y_n$.

sufficient reason, on the other hand, in some sense offers an explanation for its occurrence or existence. So if the PSR we have argued for above is correct, what it does is say that a thing explains the things which are the preconditions of its occurrence or existence. It is hard to make sense of such a statement.

There are other problems, this time specific to Leibniz. One of his motivations for the PSR is that it allows one to infer all sorts of other principles of his philosophy. He writes in a letter to Magnus Wedderkopf:

> For everything must be reduced to some reason, which process cannot stop until it reaches a primary reason, or it must be admitted that something can exist without a reason for existing; but if this were admitted, the demonstration of the existence of God and of many other philosophical theorems would be destroyed.[17]

For Leibniz (to take one example) God, or perhaps the free choice of God in creation, is the sufficient reason for the occurrence of everything in the created order. But on the principle above, if God is the sufficient reason for every existing thing, then those things are *requisites* for God's existence. As a more-or-less orthodox Christian, Leibniz would plainly not accept this upshot. The PSR which one can truly derive from those definitions, it seems, will have to go. Hence, one or both of the definitions will have to go. One possible revision would be to deny the biconditional. The emended principles (exchanging Ox for Ex) would be

(D1') $\forall x \forall y \big(S\,xy \supset (Ox \supset Oy) \big)$

(D2') $\forall x \forall y (Ryx \supset (\neg Oy \supset \neg Ox))$

17. Leibniz (1992, 3)

With this change, the unwanted inference fails to go through. However, the inference to (S') also fails to go through, since we can no longer make use of the equivalence of $Ox \supset Oy$ and $\neg Oy \supset \neg Ox$ to get to it. Yet again, the argument is a failure.

There is still another way to avoid this version of the PSR. It is to change the characterization of both a requisite and a sufficient reason like so:

(D1) X is a *sufficient reason* for Y *iff* X explains Y.

(D2) X is a *requisite* for Y *iff* Y cannot be understood without X.

These characterizations have shifted from the notion of a requisite for existence to a requisite for intelligibility. This is enough to avoid the undesirable conclusion we derived. This is because we would no longer have any equivalence like (D3), which is what powers the argument we have given.

This is an emendation which would be congenial to Leibniz. In various places he espouses a definition of requisite which requires a relation of conceptual connection or intelligibility. For instance, in April 1676 he writes: "Two things are *connected* if one cannot be understood without the other. Those things are *requisites* which connect something else, but not the converse. A reason is the sum of requisites."[18] I do not suggest that Leibniz realized the undesirable implications of his original principles and made this emendation accordingly. That would go much beyond the available evidence. But what this does show, I think, is an expansion and perhaps a deepening of thought as to what the requisites of a thing are.[19]

18. Leibniz (1989b, 111) See also Leibniz (1999, 627), which reads "[r]equisitum est conditio simplicior, seu ut vulgo vocant natura prior"; or Leibniz (1999, 305), which reads simply "[r]equisitum est conditio natura prior".

19. Perhaps it is even a step towards later developments. For example, in *Primary Truths* (1689) he relates the PSR directly to the fact that if this were not so, there would be a truth that could not be given an a priori proof. (Leibniz (1989a, 31)) And in *Monadology* §22 (1714) he writes that "since every present state of a [monad] is a natural consequence of its preceding state, the present is pregnant with the future,"(Leibniz (1989a, 216)) suggesting a conceptual connection between cause and effect, and hence between effect and sufficient reason.

Whether or not that is the case, the argument above helps show that the problem with Leibniz's original definitions stems, at least partially, from his sole concern with requisites for existence. In examining what happens to the argument when we remove the question-begging section, we can see that such an analysis falls prey to a problematic inference, one which Leibniz surely would not have accepted. The definitions which result from such a revision may fare better, but it is not obvious that they can power an argument similar to the one that Leibniz offered in the *Demonstration*. Yet again, the argument fails.

5.

The *Demonstration* is not the only one of Leibniz's works which contains something like this line of reasoning. A similar one appears in §24 of *De Summa Rerum* (1676):

> For existence, it is necessary that the aggregate of all requisites is present. A requisite is that without which a thing cannot exist. The aggregate of all requisites is the full cause of a thing. There is nothing without a reason; for there is nothing without an aggregate of all requisites.[20]

Another statement is found earlier, in §22:

> *There is nothing without a cause*, since there is nothing without all the requisites for existing.[21] [22]

20. Leibniz (1992, 113)
21. Leibniz (1992, 107)
22. There is some evidence elsewhere that Leibniz suggests the reduction of causes to requisites. He writes in "Primary Truths" that "what we call causes are only concurrent requisites, in metaphysical rigor." (Leibniz (1989a, 33)). "Primary Truths" comes at the middle or end of the 1680s; Ariew and Garber have it as 1689. Since the arguments we are examining occur in the 1670s, we will not assume that Leibniz carries out this reduction, though the above quotation is suggestive.

A similar argument appears in *Confessio Philosophi* (1672-3):

> I believe that it can be demonstrated that nothing ever exists unless it is possible (at least for one who is omniscient) to assign a sufficient reason why it exists rather than not, and why it is thus and not otherwise. Whoever denies it, destroys the distinction between being itself and non-being. Whatever exists, at any rate, will have all the requisites for existing; however, all the requisites for existing taken together at the same time are a sufficient reason for existing. Therefore, whatever exists has a sufficient reason for existing.[23]

In none of these passages does one find an explicit demonstration of something like (P2). Nor are the definitions of "requisite" and sufficient reason given. Instead of attempting to derive (P3), it is notable that Leibniz simply asserts it outright, in both passages: the collection of all a thing's requisites just constitute a sufficient reason for the thing's existence.

This notion also enters into Leibniz's argument that a perfect being is also a necessary being:

> [I]t seems that one can prove from this [the possibility of a perfect being] that a being of this kind, which is the most perfect, is necessary; for it cannot exist unless it has a reason for existing, either from itself or from something else. But it cannot have this reason from something else; for everything that can be understood in something else can already be understood in the most perfect being itself, whether because we

23. Leibniz (2005, 33)

conceive it through itself, or because it has no requisites outside itself.[24] [25]

Here he has abandoned the part of the argument which got him into trouble, that the aggregate of all a thing's requisites *just is* a sufficient reason for the thing's existence. As a result, we might offer the following, emended version of the argument:

(P1) If X exists, then all of X's requisites exist.

(P2) All of X's requisites constitute a sufficient reason for X.

(C) If X exists, X has a sufficient reason.

The argument is valid. (P1) is pretty clearly fine as well. A thing existing without one of its requisites existing seems like a flat contradiction. So the argument turns on (P2). In the passages surveyed so far, Leibniz does not give us anything like an explicit argument for (P2). But to conclude that there is no motivation from the lack of explicit motivation moves a bit too fast for comfort. The natural question then is: what motivates Leibniz to accept (P2)?

An interesting contemporaneous line of argument may be found in *Confessio Philosophi*. There, Leibniz explains his objection to the libertarian notion of freedom, defined by him as "a power to act and not act, all the requisites for acting having been posited and, moreover,

24. Leibniz (1992, 93)

25. Note the similarly of the language of "conceived through itself" to Axiom 2 of Part 1 of the *Ethics*, and the demonstration itself to the demonstration of Proposition 11 of Part 1 (in Spinoza (1985)). The similarity between the Leibniz we see here and Spinoza is quite striking in other respects as well (which is not surprising; they had corresponded 4 years before the writing of *De Summa Rerum* and met contemporaneously with its writing). A bit further down he writes: "It can easily be demonstrated that all things are distinguished, not as substances (i.e., radically) but as modes. This can be demonstrated from the fact that, of those things which are radically distinct, one can be perfectly understood without another; that is, all the requisites of the one can be understood without all the requisites of the other being understood [...] Therefore the essence of all things is the same, and things differ only modally." Contrast this with Propositions 5 and 10 of Part 1 of the *Ethics*.

everything both outside the agent and inside the agent being equal."[26] In explaining why this definition can be faulty, Leibniz argues as follows:

> That something (in this case the action) does not exist although all its requisites exist – how is this different from the thing defined not existing although what defines it does exist or that one and the same thing, at one and the same time, exists and does not exist? If something does not exist, certainly some requisite must be lacking because a definition is nothing but an enumeration of requisites.[27]

Here Leibniz seems to have shifted in his conception of a requisite. Rather than merely being a necessary condition, we have something like the following conception:

(D2") *X* is a *requisite* for *Y iff X* is part of the definition of *Y*[28]

The line of reasoning that Leibniz is endorsing here seems fairly clear. To say that a thing does not exist while all its requisites exist is a contradiction. Here is a reconstruction of an argument along the lines of the quoted passage:

(P2.1) Suppose something with *X*'s requisites exists, and *X* does not exist. (Premise, for reductio)

(P2.2) *X*'s requisites are the components of the definition of *X*. (from (D"))

26. Leibniz (2005, 67)
27. Leibniz (2005, 69)
28. On this constitutivist reading of Leibniz, see Mugnai (2010) and di Bella (2005).

(C2.1) Something with all the components of *X*'s definition exists, but *X* does not exist. (from (P2.1) and (P2.2))

(P2.3) What it is for *X* to exist is just for something fitting *X*'s definition to exist. (Premise)

(P2.4) *X* exists. (from (P2.1) and (P2.3))

(C2.2) *X* exists and does not exist. (from (P2.1) and (P2.4))

(C2.3) If *X*'s requisites exist, then *X* exists. (from (C2.2) and (P2.1))

This looks like a promising argument. However, it is not unassailable. One objection is that, while the argument works, what it establishes is something different from what we were promised. In particular, the PSR is often thought to entail that every fact has an explanation. But what the argument establishes is something slightly different – namely, that if *X* exists, then all the components of *X*'s definition are instantiated. Given a fairly common early modern doctrine (that a thing's definition states its essence), this amounts to saying that if *X* exists, *X*'s essence is instantiated.

This (one might object) is a far cry from claiming that *X*'s existence is explained. One of the things that the skeptic of the PSR wants to maintain is that there might be a brute fact, some fact which has no sufficient reason. It is not clear, even if this argument succeeds, that he cannot do so. For he can indeed maintain that everything which exists has all of its requisites, and thus in some sense its "sufficient reason", and still maintain that *X*'s existence is completely unexplained. To assert that the instantiation of an essence does not provide a sufficient reason for its existence is problematic only if the essence of that thing involves existence. This is a move Leibniz clearly will not make for the essence of things in general. The only being to whom he is willing to grant that privilege is God.

Consequently, it seems that Leibniz is in a bind. First, he made an argument for the PSR which, although initially promising, turns out to be circular. When this circularity was removed, as we saw, we end (and he ends) up with a version of the PSR with puzzling and potentially unacceptable conclusions. And when we clean up the steps in the argument which lead to *that* PSR, it turns out that the principle we derive is nearly impotent. In order to claim that a thing's requisites constitute its sufficient reason, Leibniz redefines requisites so as to make the conclusion quite uninteresting. The skeptic of a "meaty" PSR can accept Leibniz's principle and still go on believing that there are brute existence facts. The argument, try as we might, still does not get Leibniz what he wants from it.

6.

For much of the 20th century the PSR was mired in a certain amount of disrepute. Reasons for this include its supposedly unpalatable consequences (necessitarianism, the existence of God, etc.), as well as an apparent lack of evidence for it.[29] In recent years, however, there has been something of a resurgence in interest in the principle. Some philosophers (such as Dasgupta (2016)) have undertaken a sort of conciliatory project. They attempt to show that the PSR does not imply some of the supposedly unsalutary consequences, with less emphasis on its motivation. Others (such as Pruss (2006) and della Rocca (2010)) tackle the second objection head on. They present motivations for the principle.

The first objection, it seems to me, tends to be more sociological than philosophical, insofar as the conclusions are taken to run counter to widespread intuitions. That is not to say that such concerns are unwarranted – the PSR may indeed imply philosophical doctrines which are disprovable on other grounds, and that may constitute a reason to reject it. Indeed, this is thought to be the case with the question of necessitarianism. Philosophers such as van Inwagen (1986, 202-204) and Bennett (1984, 114-118) argue that the PSR entails that there

29. See Dasgupta (2016, 379)

is no conjunction of all contingent truths, and that this entails that all truths are necessary truths.[30][31]

Naturally this has been challenged. Lin (2012) does this by arguing that the argument suffers from an important equivocation. Schneider and Steinberg (2016) argue that the argument loses its bite when one introduces a version of the PSR which refers to grounding. Levey (2016) argues that the concept of "contingent truth" is indefinitely extensible, and hence there is no conjunction of all contingent truths. Tomaszewski (2016) reaches the same conclusion via a diagonalization argument.

But to my mind, the second is the more interesting objection. How would one motivate the PSR? What could count as evidence, or argument, in its favor? This is the question I have tried to examine in the preceding pages. It may be that this PSR, as Leibniz thinks it does, implies some of the consequences that 20th century philosophers feared (e.g., the existence of God), as well as some that Leibniz thinks it does not (e.g., necessitarianism). But there are plenty of counter-intuitive theses which we accept provided that there is good enough evidence in their favor: that there are space-time regions of infinite curvature, that there are superpositions of position states, Simpson's paradox, that there are different sizes of infinity, the infinite monkey theorem, and so on. So the question of counter-intuitiveness, it seems to me, is secondary to the question of whether there is a good argument or evidence for the PSR.

Unfortunately, this is not what Leibniz has given us. As we have seen, he can be read as offering two arguments. One of them indeed has a full-blown PSR as its conclusion, but suffers from a vicious circularity. In addition, key components of his definitions have a counter-intuitive version of the PSR as a consequence. The other argument is much better

30. Some strange or counter-intuitive consequences of the PSR are documented in della Rocca (2012) and della Rocca (2003); these include the identity of conceivability, causation, and existence, as well as the unreality of relations.

31. A slightly more technical and exotic objection is alluded to in Belot (2001). The objection runs: since many classical mechanical theories have an underlying symmetry group, the principle of the identity of indiscernibles is false, and since this is thought to be a corollary of the PSR, so is the PSR. For his part, Belot does not think this is an insurmountable objection.

in terms of validity, but it has an uninteresting conclusion – namely, that everything which exists has some definition which is instantiated. This may be true, but it is quite a long way from the conclusion we were promised. It seems that Leibniz, and the proponent of the PSR more generally, will have to look elsewhere for arguments in its favor. These are no good.[32]

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