Du Châtelet's First Cosmological Argument

Stephen Harrop

In 1765, towards the end of his life, Voltaire had occasion to give a speech in London on the topic of atheism.[1] In it, he mounts an impassioned defense of a version of the cosmological argument. The argument itself is short and sweet: "I exist; therefore some thing exists from all eternity." (Voltaire 1968-: 62.427)[2] This is a mirror of a somewhat more worked-out argument given over thirty years earlier, in his *Traité de Métaphysique* (1734). There, he claimed that there were only two possible ways of proving the existence of God, via teleological and cosmological arguments. The cosmological argument proceeds thus:

> I exist; therefore something exists. If something exists, something has therefore existed from all eternity, since that which is, either exists through itself, or has received its being from another. If it exists through itself, it necessarily exists, it has always necessarily existed, and it is God. If it has received its being from another, and that second from a third, the one from which this last has received its being must necessarily be God. (Voltaire 1968-: 14.427)

This argument bears a strong similarity to others offered around the same time, by John Locke, Christian Wolff, and Emilie Du Châtelet. While Voltaire offers, at best, an argument sketch, these three fill the gaps in varying degrees of detail. In this chapter, I'll argue that Du Châtelet's argument improves on both Locke's and Wolff's argument in significant ways.

Section 1. Her antecedents

Cosmological arguments generally begin with some purported fact about our experience and reason from that fact to the existence of God. In antiquity, that fact was often some fact about things being in motion. In book X of the *Laws*, Plato begins his argument thus:

> Now when I'm under interrogation on this sort of topic, and such questions as the following are put to me, the safest replies seem to be these. Suppose someone asks "Sir, do all things stand still, and does nothing move? Or is precisely the opposite true? Or do some things move, while others are motionless?" My reply will be "I suppose some move and others remain at rest." (893b-c)[3]

Aristotle does much the same, by observing that "[s]ensible substance is changeable," (1069b6-1689)[4] and that "something persists." (1069b24-1689) Thomas Aquinas follows them in this, noting in the First Way that "[i]t is certain, and evident to our senses, that in the world some things are in motion." (ST I q2 a3)[5] Aquinas also says, in the Third Way, that "[w]e find in nature things that are possible to be and not to be." (ST I q2 a3) All three of the figures we will examine here also begin their arguments from facts about experience. But while Leibniz follows Aquinas' Third Way in identifying facts about contingency as the relevant bit of experience, both Locke and Wolff (and as we have seen, Voltaire) use the self-evident proposition advanced by Descartes in the Second Meditation, which I will call the *Sum*: "[T]his proposition, *I am*, *I exist*, is necessarily true whenever it is put forward by me or conceived in my mind." (CSM II 17 / AT VII 25)[6]

Subsection 1.1. Locke. Locke's cosmological argument in the *Essay Concerning Human Understanding* begins at *Essay* IV.x.2.[7] He begins thus: "I think it is beyond Question, that *Man has a clear Perception of his own Being*; he knows certainly, that he exists, and that he is something." (*Essay* IV.x.2) He continues:

> In the next place, Man knows by an intuitive Certainty, that bare *nothing can no more produce any real Being, than it can be equal to two right Angles*…If therefore we know that there is some real Being, and that Non-entity cannot produce any real Being, it is an evident demonstration, that from Eternity there has been something; Since what

was not from Eternity, had a beginning; and what had a beginning, must be produced

by something else. (*Essay* IV.x.3)

Lascano (2011) renders the argument so far like so (I have made only cosmetic changes):

(L1) I exist.

So: (L2) There exists some real being. (from (Locke1))

(L3) Non-entity cannot produce real being (*ex nihilo nihil fit*).

So: (L4) Something must have existed at all times from eternity. (from (Locke2), (Locke3))] (Lascano

2011: 745)

What are the presuppositions of the argument so far? Lascano's reconstruction lays one bare, viz., the

good old causal principle: From nothing, nothing comes. The text itself indicates that Locke also thinks

that the premise that whatever begins to exist has a cause of its existence[8] is doing some argumentative

work here.

Lascano maintains that so far, the argument is logically valid.[9]. But note that (L4) is ambiguous. One

could read it as saying:

(L4') Some particular thing must have existed at all times from eternity.

On the other hand, one could read it as saying:

(4") There has been something or other existing at all times from all eternity.

To see how (L4') and (L4") differ, consider a Great Chain of Beings, extending infinitely into the

past, fulfilling the following conditions:

- Being b_1 exists from t_{-1} to t_1

- Being b_2 exists from t_{-2} to t_0

…

- Being b_n exists from t_{-n} to t_{2-n}

…

- Being b_n brings being b_{n-1} into existence

Here, it is clear that (L4') is false but (L4") is true. Lascano puts it this way: "We cannot validly conclude from the proposition that *something exists at every time*, that *there is some particular thing that exists at every time*." (Lascano 2011: 746) So if we read Locke as making the argument given above, he has walked himself into a clear paralogism. Locke might perhaps want to invoke some argument for the impossibility of an infinite causal series–as that would block the model we have laid out above–but I can in no place find him doing so. So it appears as though Lascano's judgment is accurate in taking Locke to commit an argumentative fallacy here.

Were he, however, to have a way of blocking the possibility of an infinite regress of beings such as I have laid out above, the argument might be patched up to exclude the reading of (L4) given by (L4'). But this too doesn't quite get Locke what he wants. Recall that what he wants is that "from Eternity there has been something." If one were to rule out infinite causal chains like the one described above, then one could perhaps come to a first cause. But that does not itself establish that the first cause has existed from all eternity without some additional argument. Nothing said so far has ruled out (for example) a first cause which went out of existence, or which exists only on odd-numbered years.

Would Du Châtelet have been familiar with Locke's argument? It seems almost certain. Her knowledge of Locke is well-documented. Voltaire remarked that she knew Locke better than he himself did.[10] Given that his version of the cosmological argument is extremely close to Locke's, it seems reasonable to conclude that he was familiar with the passage. And if he was, it also seems likely that Du Châtelet was as well.

Subsection 1.2. Wolff. Christian Wolff's argument bears a significant resemblance to Locke's. It uses the knowledge of one's own existence as a starting point, as does Locke.[11] The main source for his cosmological argument is often taken to be his *Theologiae Naturalis* (Wolff, (1720) 2009: §928, 51), but

would Du Châtelet have been aware of the argument of that work? It is difficult to say for certain, but the balance of the evidence suggests that it is less than likely that she had direct knowledge. She quotes Wolff's *Elementa Matheseos Universae* in one of her letters[12], and in the preface to the *Institutions* she left a note indicating that she was drawing from his *Ontologia* (IdP 13n*)[13], but we have no direct evidence that she had seen *Theologiae Naturalis*. We do know, however, that she likely had access to some French translations of some other works by Wolff, sent to Voltaire at Cirey by Frederick the Great. Among these was a version of Wolff's work *Vernünftige Gedanken von Gott, der Welt und der Seele des Menschen, auch allen Dingen überhaupt* ("Rational Thoughts on God, the World and the Soul of Man, and on All Things in General").[14] There we can find an argument which is in many ways similar to that of the larger work. The relevant passage is this:

> We exist (§1). Everything that exists has its sufficient ground why it exists rather than does not exist (§30) and, therefore, we must have a sufficient ground why we exist. If we have a sufficient ground why we exist, that ground must be found either within us or external to us. If it is to be found within us, then we exist necessarily (§32), but if it is to be found in something else, then that something else must have in itself its ground why it exists and thus exists necessarily. Accordingly, there is a necessary being. Whoever might object that the ground for our existence could be found in something that does not have in itself the ground for its existence does not understand what a sufficient ground is. For one must in turn ask further of such a thing what has the ground for its existence, and one must ultimately arrive at something that needs no external ground for its existence. (Wolff, (1720) 2009: §928, 51)

We can reconstruct the argument like so:

(W1) I exist.[1] (premise)

(W2) Everything has a sufficient reason why it is rather than is not. (premise)

So: (W3) There is a sufficient reason for why I exist. (from (W1), (W2))

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1. I don't think any substantive philosophical point relevant to this argument is elided by changing "we" to "I" here; thanks to a reviewer for making this point.

(W4) A necessary being has its sufficient reason inside itself. (premise, supplied)

(W5) Either the sufficient reason for my existence is in me, or in something else. (premise)

So: (W6) If the sufficient reason for my existence is in me, then a necessary being exists. (from (W4))

(W7) If the sufficient reason for my existence is not in me, then it must be in something else. (premise)

(W8) There cannot be an infinite regress of sufficient reason-havers that don't contain their sufficient reason in themselves. (premise, supplied)

So: (W9) If the sufficient reason for my existence is not in me, then it must (ultimately) lie in some necessary being. (from (W8))

So: (W10) A necessary being exists. (from (W5), (W6), (W9))

Section 2. The Arguments of *Institutions de Physique* chapter 2

Chapter 2 of the *Institutions de Physique*, entitled "On The Existence of God," begins with the exhortation that "[t]he study of nature raises us to the knowledge [connoissance] of the supreme Being.[15] This great truth is more necessary, if it is possible, to good physics than to morals, and it must be the foundation and the conclusion of all our researches." (IdP 38 / IP 40)[16] In order to do good physics, then, we don't just need the principles (such as the identity of indiscernibles, the principle of sufficient reason, and the principle of noncontradiction) that Du Châtelet laid down in chapter 1. We must also begin with knowledge of God. She therefore goes on to offer "a précis of proofs of that important proof, through which you may be able[17] to make a judgment [*juger*] for yourself about its evidence." (IdP 38 / IP 40)

The text immediately after is divided up into subsections, each of which contains a premise of her argument and the sub-argument for that premise. The entire passage is too long to reproduce in its entirety. Instead, we can collect the premises as follows:

(DC1) "Something exists." (IdP 39 / IP 41)

(DC2) "Since something exists, it is necessary that something has existed from all eternity." (IdP 39 / IP 41)

(DC3) "The Being which has existed from all eternity must exist necessarily, and not have its existence from any cause." (IdP 39 / IP 41)

(DC4) "There is nothing…but contingency in all the Beings which surround us." (IdP 40 / IP 42)

(DC5) "Everything that exists has a sufficient reason for its existence." (IdP 40 / IP 42)

(DC6) "[I]t is necessary that a Being's sufficient reason be either in it or outside it." (IdP 40 / IP 42)

(DC7) "This sufficient reason cannot be found in another contingent Being, nor in a sequence of these Beings." (IdP 40 / IP 42)

So: (DC8) "It is necessary to come from this to [*en verir á*] a necessary Being which contains [*continenne*[18]] the sufficient reason of the existence of all the contingent Beings, and of his own [la sienne]." (IdP 40 / IP 43)

There are two substantive points here. The first is that (DC2) has the same shortcoming that we identified in Locke's argument. It is equivocal between the reading on which some particular thing has existed from all eternity and the reading on which some particular thing or other, but no *single* thing, has existed from all eternity. And it is clearly the first reading which Du Châtelet needs.

The second point is that there are technically two arguments here. The first runs from (DC1) to (DC3). The second one runs from (DC4) to (DC8). The reason I say there are two arguments is because by (DC3), Du Châtelet has shown, or thinks she has shown, that there is an uncaused being that has existed from all eternity. (DC4) switches abruptly to a discussion of contingent beings, marking a change in theme from what was discussed immediately before. Because, first, (DC3) looks like the end of an argument for the existence of God, and second, the topic matter shifts immediately after to a discussion of contingency which then ends with the conclusion that there is a necessary being who is the sufficient reason for all contingent beings, I conclude that there are two distinct arguments at play. They may interlock, to be sure, but they are distinct nonetheless.

The first argument is essentially the Lockean argument. Indeed, it bears a great deal more resemblance to the Lockean argument than to the Wolffian one. The second is much more like a Leibnizian

contingency argument (we will examine this momentarily) than like the Wolffian argument. Let's separate these out and reconstruct them, filling in some logical gaps:

Argument One:

(O1) Something exists. (premise)

(O2) If something exists, then Something (S) must[19] have existed from all eternity. (premise)

So: (O3) S must have existed from all eternity. (from (O1), (O2))

So: (O4) S has existed from all eternity. (from (O3))

(O5) If something has existed from all eternity, it is uncaused and exists necessarily. (premise)

So: (O6) S is uncaused and exists necessarily. (from (O4), (O5))

Argument Two:

(T1) Everything in the world (The Cosmos) is contingent. (premise)

(T2) If a thing is contingent, then its sufficient reason is neither a contingent being nor any sequence of contingent beings. (premise)

So: (T3) Neither a contingent being nor any collection of contingent beings is the sufficient reason for The Cosmos. (from (T1), (T2))

(T4) Everything that exists has a sufficient reason, either internal to it or external to it. (premise)

So: (T5) The Cosmos has an external sufficient reason. (from (T3), (T4))

(T6) Everything is either contingent or necessary. (premise)

So: (T7) The sufficient reason for The Cosmos is a necessary being. (from (T3), (T4), (T5), ((T6)[2]

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2. Technically I've made two editorial decisions here. First, rather than simply take each subsection to express one premise, I've taken subsection 4 to contain both (O5) and (O6). This is because, while (O5) is just an expression of the principle of sufficient reason (PSR), it is important to make all the moving parts of the argument as clear as possible. Second, I've derived both (O7) and (O8) from subsection 6, since the conclusion is not contained in its own subsection.

Note above that (O2) is quite similar to (L4). The problem we noted in a previous section was noted by, among others, Gottfried Leibniz. As an astute reader of Locke, he makes the same remarks as to Locke's arguments as we did above. In the *New Essays*, he writes, of Locke's argument, that

> I find an ambiguity [in (L4)]. If it means that *There has never been a time when nothing existed*, then I agree with it, and it really does follow with entirely mathematical rigour from the preceding propositions…But you go straight on in a way which shows that when you say that something has existed from all eternity you mean an eternal thing. But from what you have asserted it does not follow that if there has always been something then *one certain thing* [emphasis mine] has always been, i.e. that there is an eternal being. (A VI 6 436 / G V 417)[20]

He of course gives his own version of an argument from contingency in various places. For instance, in the *Monadology* he writes the following:

> 36. But there must also be a *sufficient reason* in *contingent truths*, or *truths of fact*, that is, in the series of things distributed throughout the universe of creatures, where the resolution into particular reasons could proceed into unlimited detail…
>
> 37. And since all this *detail* involves nothing but other prior or more detailed contingents, each of which needs a similar analysis in order to give its reason, we do not make progress in this way. It must be the case that the sufficient or ultimate reason is outside the sequence or *series* of this multiplicity of contingencies, however infinite it may be.
>
> 38. And that is why the ultimate reason of things must be in a necessary substance in which the diversity of changes is only eminent, as in its source. This is what we call *God*. (AG 217-18)[21]

And in "On The Ultimate Origination of Things," we have a very similar argument:

> I certainly grant that you can imagine that the world is eternal. However, since you assume only a succession of states, and since no reason for the world can be found in any

one of them whatsoever…it is obvious that the reason must be found elsewhere. For in eternal things, even if there is no cause, we must still understand there to be a reason. In things that persist, the reason is the nature or essence itself, and in a series of changeable things…, the reason would be the superior strength of certain inclinations, as we shall soon see, where the reasons don't necessitate…but incline. From this it follows that even if we assume the eternity of the world, we cannot escape the ultimate and extramundane reason for things, God. (AG 149-50 / G VII 302-3)

The resemblance to Du Châtelet's second argument, both in being an argument from contingency and in sharing very similar language (both she and Leibniz speak of a "sequence" or "succession" of things), is striking.

Was Du Châtelet aware of either of these arguments? It is difficult to say for certain. Judith Zinsser notes (Zinsser 2006: 326n46) that in her letters she makes reference to the *Théodicée*, some of Leibniz's papers in *Acta Eruditorum* from 1686-7, and to a French version of the Leibniz-Clarke correspondence. A survey of both that edition of Leibniz-Clarke correspondence and Leibniz's articles in the indicated years shows no version of the cosmological argument, at least not that I can find.[22] Only the *Théodicée* contains something resembling the cosmological argument given elsewhere. It seems likely, therefore, that if Leibniz is one of her sources for the cosmological argument, the argument in the *Théodicée* is where we should look. Here is the relevant passage:

God is the first reason of things, because those things which are limited [*bornées*], like all that which we see and experience, are contingent, and have nothing in them which renders their existence necessary, it being manifest that time, space, and matter, united and uniform in themselves, and indifferent to everying, were able [*pouvoient*] to receive other movements and figures, and in another order. It is necessary, therefore, to seek the reason of the existence of the world, which is the whole assembly of contingent things; and it is necessary to seek it in the substance which bears the reason of its existence in itself, and which is consequently necessary and eternal. (G VI 106; translation my own)

There are many similarities between Argument Two and Leibniz's argument in the *Théodicée*, so much so that one might well conclude that Du Châtelet derived much inspiration from it (and possibly from those in *Monadology* and "On the Ultimate Origination of Things," though that is less certain). But since the argument from contingency has received substantive attention[23], what I want to do instead is focus on Argument One. I will argue, in the next section, that it represents a significant and interesting improvement on the arguments given by Locke and Wolff.

Section 3. Examining the first argument

Subsection 3.1. Justifying the premises. Let's take each justification in turn. (O1) is justified pretty simply–it is just *Sum*. In this Du Châtelet follows Locke and Wolff. How about (O2)? Here is her justification: "[W]ithout [a being that has existed from all eternity] it would be necessary that nothing, which is but a negation, would have produced all that which exists, which is a contradiction in terms. For it is to say that a thing has been produced, and at the same time not to recognize any cause of its existence." (IdP 39 / IP 41)

The line of reasoning here, then, seems to be that if we deny that something has existed from all eternity, each and every thing will have come into existence from nothing. But this still doesn't quite evade the issue with Locke's argument, because we are not explicitly given a reason why everything has to have been produced from nothing. Sure, if we acknowledged that everything has to have a cause of its existence and then claimed that everything taken together doesn't, we might be engaged in a contradiction. But that's not what we need to claim, as we saw in §1.1. We might well claim that everything in the world has a cause, but that in every case that cause is something that was itself caused to exist, and is itself in the world. So this reasoning still doesn't solve the problem Locke's argument had.

But I think we get something like a solution in her argument for (O5). Here it is:

> [I]f [the being that has existed from all eternity] were to have received its existence from
> another Being, it would be necessary that that other Being existed through itself, and
> then either it is of that being that I speak, and it is God, or else it would again have had
> its existence from another. One sees easily that in thus going back to infinity, one must

either arrive at a necessary Being who exists through itself, or else admit an infinite chain of beings, which taken all together will have no external cause of their existence (since all beings enter into that infinite chain), and which, each in particular, will have no internal cause, since each does not exist through itself, and that they have their existence the one from the other in a gradation to infinity. Thus, this is to suppose a chain of beings which separately have been produced by one[24] cause, and which all together have been produced by nothing, which is a contradiction in terms. (IdP 39 / IP 41)

Here we have an expansion of Wolff's attempted motivation for (W8). Recall that in *Rational Thoughts*, he asserted that if you think that every contingent thing has a sufficient reason in some other contingent thing you just don't understand what a sufficient reason is. His point seems to be that a sufficient reason is something which requires no external reason for it.[25] This seems to me like mere table-banging.[26]

But now Du Châtelet gives us just such a reason. In order to maintain that there is no necessary being and hold on to the PSR, one may introduce an infinite series of contingent beings similar to the one we considered in §1.1. Each member of the series is indeed contingent, and each has a contingent cause, which in turn has a contingent cause, and so on to infinity. But then, all together, the chain has no cause. And this, she says, is a contradiction.

I think that the argument given here can be used to support (O2). It is supposed to establish that the being which has existed from all eternity was the cause of all the things that haven't. But it can be modified so as to show that you can't have a chain of contingent beings stretching back to infinity (by the reasoning we saw above), since the whole chain would need an explanation. And, hence, something must have existed from all eternity to cause the whole chain.

Note the difference between this argumentative move and Wolff's. As we have seen, Wolff's argument requires the premise that there cannot be a certain kind of infinite regress. But Du Châtelet grants this for the sake of argument, and then proceeds to argue that even if we grant this, a necessary being must still exist. Since her argument requires weaker assumptions than that of Wolff, on that score, at least, it is more dialectically effective.

Subsection 3.2. Objections and responses. Above, Du Châtelet argued that there must be a sufficient reason for the hypothetical infinite chain of contingent causes and effects. This turned on the assumption that for each element of the chain to have a cause but there to be no cause for the chain as a whole is a contradiction in terms. But perhaps this is unconvincing. Recall a familiar objection to the cosmological argument (probably that of Samuel Clarke) given by David Hume in Part IX of the *Dialogues Concerning Natural Religion*. There, Hume claims that the whole series of things needs no explanation once each element is explained:

> In such a chain too, or succession of objects, each part is caused by that which preceded it, and causes that which succeeds it. Where then is the difficulty? But the WHOLE, you say, wants a cause. I answer, that the uniting of these parts into a whole, like the uniting of several distinct countries into one kingdom, or several distinct members into one body is performed merely by an arbitrary act of the mind, and has no influence on the nature of things. Did I show you the particular causes of each individual in a collection of twenty particles of matter, I should think it very unreasonable, should you afterwards ask me, what was the cause of the whole twenty. This is sufficiently explained in explaining the cause of the parts. (Hume 2007b: 65–6)

Hume's objection presupposes what we might call

Hume's Extreme Thesis: The whole is nothing but all its parts.

While it seems that Hume does in fact believe this thesis (see his speaking of an organism's wholehood being due merely to an act of the mind in the passage above), it is surely unnecessarily strong for this argument. All that is needed here is a weaker claim, something like:

Hume's Moderate Thesis: The universe is nothing but all its parts.

Going forward, I'll just refer to this as "Hume's Thesis."

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Now if Hume's Thesis is correct, then it seems that Du Châtelet has reasoned incorrectly. Recall that her argument moved from granting that each element in the series of contingent beings had a sufficient reason to the position that the series as a whole did. But if the universe just is all its parts, then there's nothing left to explain. Once you've answered the "why" question for every member of the contingent series, you have turned your spade, to use Wittgenstein's phrase.

I think this is too quick. Recall that each of the beings in the series was supposed to be contingent. That is, it was possible for it not to exist, or its non-existence involved no contradiction. And so, if it possible for one of the links in the chain not to exist, why not another? It was supposed to be contingent as well. And, if that's so, how about another not existing along with the other two? And another? And another? The shape of the argument should be clear: If every being in the chain is contingent, then every link can fail to exist. And if we assume that there are no necessary connections between distinct existences, then if each one can fail to exist, so can the whole of of them (this, since the existence of one member of the series by assumption does not necessitate the existence of any other element of the series).

And indeed, Hume himself does assume this, in his argument against the principle that everything which begins to exist has a cause in the *Treatise of Human Nature*:

> [It is] easy for us to conceive any object to be non-existent this moment, and existent the next, without conjoining to it the distinct idea of a cause or productive principle. The separation, therefore, of the idea of a cause from that of a beginning of existence, is plainly possible for the imagination; and consequently the actual separation of these objects is so far possible, that it implies no contradiction nor absurdity. (T 1.3.3)[27]

So if Hume is right in this passage, then what's sometimes called free recombination of contingent beings is possible: We can cut and paste contingent entities however we like. So the line of reasoning we just carried out above is something someone like Hume should accept. If on the other hand there are necessary connections between distinct existences, then matters are even better for Du Châtelet. Supposing any contingent being not to exist means supposing its cause doesn't exist, that its cause's cause doesn't

exist, and so on to infinity. In either case, it seems like, since all these beings are contingent, all of them can fail to exist together.

This is important because of a method of argument called "particularization." It featured especially heavily in medieval Islamic discussions of the eternity of the world. Herbert Davidson puts it like this: "The particularization mode of argument searches for instances in the universe where, it understands, a given alternative has been selected over other, equally possible alternatives; and it submits that the arbitrary selection it discovers implies a particularizing agent or a particularizing factor." (Davidson 1987: 159–60) Al-Ghazali states a version of this principle in his work *Moderation of Belief*: "[F]or a nonexistent whose nonexistence continues, its nonexistence would not change into existence unless something comes along that gives preponderance to the side of existence over the continuation of nonexistence." (Al-Ghazali 2013: 29) The basic idea is this. If one of any number of equally possible states of affairs is actualized, there must be an answer as to why *this* one was actualized and not *that* one. And since we've seen that, on Humean assumptions, the whole supposed infinite series is contingent and could just as well exist as not, it seems fine to ask what did in fact tip the scales.

One might well rejoin, in defense of the Humean, as follows. Maybe it is fine to ask this about every single state of affairs constituting the world, but once we've got an answer for each of *those*, there is nothing further to explain. And, in particular, nothing about the series as a whole needing a particularization agent need be invoked.

The trouble with this line of defense goes as follows. For Hume, the idea of necessary existence is somehow defective[28], and all existence facts are matters of fact, and therefore contingent.[29] Consequently, any one of the links in the infinite causal series may not exist (that's just what it is to exist contingently). Since each one may fail to exist, *all* of them may fail to exist. And so we arrive at the question of particularization yet again – why did the entire causal series fail to exist? It will do no good to point to one link in the chain and say "that one exists because some other one exists and caused it to exist" because, ex hypothesi, the other one doesn't exist either. The Humean rejoinder, then, is unsuccessful in defusing the particularization argument.

This line of response is open to Du Châtelet for two reasons. First, as a general matter, she endorses a contrastive version of the PSR. In other words, on her account, a sufficient reason for a thing must

account for why a thing is the way it is, rather than some other way, or why this thing exists rather than another. For example, in introducing the PSR in the *Institutions*, she writes that "all men naturally follow [the PSR], because there is nobody who determines themselves to one thing rather than another [*une chose plutot qu'a une autre*], without a sufficient reason which would make them see that the one thing is preferable to the other." (IdP 22/ IP 23) A little further down, she writes:

> [W]hen it is possible that a thing finds itself in different states, I cannot ensure that it finds itself in one such state rather than another, unless I put forward [*à moins que je n'allégue*] a reason for that which I affirm. Thus, for example, I am able to be seated, lying down, or upright [*de bout*], all these determinations of my situation are equally possible, but when I am upright it is necessary that there be a sufficient reason, why I am upright, and not seated, or lying down. (IdP 25 / IP 26)

And in writing of Archimedes' (supposed) application of the PSR, she says that when each side of a scale has equal weight, it will remain in equilibrium, "because there will not be any sufficient reason why one of of the arms would descend rather than the other. (IdP 25/ IP 26-7) The conclusion I draw from these passages is that Du Châtelet intends her PSR to be contrastive. Accordingly, there is a sufficient reason why this world rather than any other exists.

Second, she employs this kind of particularization argument elsewhere in the *Institutions*. In her discussion of the law of continuity, she writes that "[t]he principle of sufficient reason proves easily this truth [the law of continuity], since each state in which a being finds itself must have its sufficient reason, why that being finds itself in that state rather than in any other." (IdP 30 / IP 32) Another piece of evidence comes in a discussion of the distinction between possibility and actuality:

> So that a thing may be, it therefore does not suffice that it be possible; it must also be that this possibility has its fulfillment, and it is this that one calls *Existence*. For a thing cannot reach existence without a sufficient reason by means of which an Intelligent Being may be able to understand why this thing becomes actual from the possible it was

beforehand. (IdP 26 / IP 27-8)

The implication here, I think, is pretty clear: When a possible is brought from possibility to actuality, there must be a reason why it is brought to actuality. And since (as we saw above) Du Châtelet's PSR is contrastive, there must be a sufficient reason why this world, rather than any other possible one, has come into existence. This is true even if the chain of contingent beings in the world continues infinitely, provided we may coherently consider them as part of a whole, or coherently speak of all of them, taken together. Once one admits that, one admits the ability to ask why all the infinitely many things in the world exist, rather than some different sequence of things.

A sensible question we can ask here is: Why doesn't the same defense apply to Wolff? If he can make the same particularization move that Du Châtelet makes above, can we really say her work provides resources his does not? I think it does, primarily because I do not think that Wolff's PSR is contrastive in the right way. In *Rational Thoughts*, here is the way he puts his PSR: "Now, since it is impossible that something can arise out of nothing (§28), everything that exists must have its sufficient ground for why it exists, that is, there must always be something from which one can understand why it can become actual (§29)." (Wolff, (1720) 2009: §30, 12) And here is the version from his work *Ontologia*: "Nothing is without a sufficient reason on account of which it is able to be, rather than not be; that is, if some being is posited, something is also to be posited whence it is understood why the same is able to be, rather than not be." (O §70 / WW 2 47) Note that in both cases, the contrast given is between one thing's existence and its non-existence. That for which we need a sufficient reason is a thing's existence, over its non-existence. But this is a different thing from asking why this thing rather than some other exists.

To illustrate the difference, consider the following toy case. Consider a world which consists of a single silver atom, existing for some length of time. Provided we have a sufficient reason (or ground, as Wolff sometimes puts it; see Wolff, (1720) 2009: §29, 11) why that silver atom exists rather than not, for Wolff the questioning stops there. Wolff's PSR is satisfied. But Du Châtelet's PSR is not. In order for her PSR to be satisfied, one also needs an explanation for why one silver atom rather than two, or three, or seventy-three (and so on) exists. Wolff's PSR considers only two possibilities (existence and non-existence), whereas Du Châtelet's considers all of them.

This is important, because of how particularization arguments work. They require one to consider, not merely why there is something rather than nothing, but why this universe exists rather than another. By contrast, Wolff's PSR only requires the consideration of existence rather than non-existence. We may satisfy that PSR without considering why this universe, rather than some other, exists. Hence, Wolff's PSR is too weak to power the argument.

Now the most obvious way that Hume or the Humean might answer Du Châtelet is simply to deny the PSR. Perhaps he might do so by claiming that the whole series is not apt for explanation, thus going back on Hume's original position. Or the Humean might appeal to Hume's well-known argument against the causal principle in the *Treatise* (at T 1.3.3.3). So it would then be left to Du Châtelet to argue directly for the PSR – a task which she indeed undertakes.[30] But in any case, in giving the argument that I have read her as giving, she has shifted the dialectic away from problems specific to her cosmological argument and onto the ground of fundamental metaphysical principles.

Section 4. Conclusion

By my reckoning Du Châtelet has answered both possible objections to Lockean-style arguments. First, she has given a reason to think that, even in the case of a Great Chain of Beings, one must still arrive at a necessary cause of all contingent reality. And second, while Wolff's PSR is too weak to power a particularization argument (and his actual argument at times involves what looks like mere stipulation), Du Châtelet's is not, and she can thus answer a Hume-style objection. Whether the argument from contingency she gives is better than that of Leibniz is not something I will address here. But in the case of Argument One, I conclude that her argument surpasses those of both her distinguished predecessors.[31]

Notes

1. In publication, it was designated a homily; one struggles to imagine Voltaire behind a pulpit.

2. Translation my own throughout. I cite from Voltaire 1968- by volume and page.

3. This is cited using Stephanus pagination from Plato 1997.

4. This is cited using the Bekker pagination from Aristotle 1984.

5. I cite using the typical conventions for citing the *Summa Theologiae* (ST [part] [question] [article]) from Aquinas 1947.

6. I cite passages from Descartes using the usual convention: CSM [volume in CSM] [page in CSM] / AT [volume in Descartes 1897-1910] [page in Descartes 1897-1910]. The passages in English are quoted from Descartes 1984.

7. I quote throughout from Nidditch's critical edition, Locke 1975. I cite as *Essay* [book].[chapter].[section]

8. Note that the causal principle comes apart from this one. For example, the causal principle disallows any change of state in a currently existing object, but the principle that whatever begins to exist has a cause of its existence does not. If we suppose that one and the same coin is all that exists over an interval of time $[t_1, t_2]$ but is red on the interval $[t_1, t_{3/2})$ and black on the interval $(t_{3/2}, t_2]$, and that this coin had a cause of its existence at t_1, we reach no contradiction by supposing that the change from red to black comes from nothing. No new thing is assumed to exist.

9. Lascano 2011: 745

10. Zinsser 2006: 78

11. Wolff's knowledge of and engagement with Locke is well-known. By his own account, Wolff had read some Locke as early as 1705 (see Leibniz and Wolff 1860: 23). He reviewed Locke's *opera posthuma* in *Acta Eruditorum* in 1708 (see J. B. Mencke 1708: 40).

12. See Barber 1967: 209

13. All quotations from the *Institutions de Physique* are my own translations (from the first edition, Du Châtelet 1740, abbreviated IdP), by page number; and all quotations from the *Institutions Physiques* are my own translations (from the second edition, Du Châtelet 1742, abbreviated IP), are my own translations as well. Both are cited as IdP [page number] / IP [page number] when a passage appears more or less unchanged in both editions. When some passage occurs in one edition or not the other, the citation will be IdP [page number] or IP [page number]. This footnote, for instance, occurs in only the first edition. When

there are textual variations between the two editions, I will note them in the citation footnote. In general, my translation will prefer the second edition.

14. See Barber 1967: 205.

15. IdP has "d'un Étre suprême"; see IdP 38.

16. IP reads "*elle doit être le fondement & la conclusion de toutes nos recherches*," rather than "*elle doit être le fondement & la conclusion de toutes les recherches que nous saisons dans cette science*.

17. IdP reads "*pourrez*," whereas IP reads "*puissez*."

18. Since the French is a present subjunctive prefixed with a main clause in present tense, I've translated it simply in the present tense.

19. There is some difficulty with the "must" here. I think there are two distinct classes of modal concepts in the *Institutions*. First, there is logical modality, the impossible and the possible, which are defined as that which implies a contradiction and that which doesn't, respectively. (IdP 19 / IP 20) Second, there is what we might call worldly modality, the necessary and contingent. This is a little trickier. Necessary truths are those "which are determinable in only one way," whereas contingent ones are those where "it is possible that a thing exists in [*de*] different ways, and that none of their determinations is any more necessary than another." (IdP 21 / IP 23) So necessity is defined in terms of logical possibility.

The "must" here translates "il faut que." So which class of modal concepts is involved? I think, as we will presently see when we get to the argument that Du Châtelet gives for this premise, what is involved is logical necessity. She says (as we will see later, again) that if the contrary is assumed, we reach a contradiction.

20. I cite Leibniz 1926- using the convention A [series] [volume] [page]. I cite Leibniz 1965 using the convention G [volume] [page]. English quotations from the *New Essays* are from Leibniz 1996, which uses only the Akademie pagination for the text proper.

21. I follow the usual convention of citing from Leibniz 1989 as AG [page].

22. Details about the composition of Du Châtelet's library are scant, but there are some indications. The French version of the correspondence that Du Châtelet had access to would likely have been Des Maizeaux 1720; see Brown and Kölving 2008: 118. For Leibniz's papers in the *Acta Eruditorum* of 1686, see O. Mencke 1686: 161, 289, 292. He has no papers in the 1687 volume that I can find.

23. For more on the argument in the *Théodicée* see Lodge 2020. For more on Leibniz's cosmological arguments generally see for instance Blumenfield 1995 and Craig 1980: chapter 8.

24. The French is "*une cause*," which is strictly speaking ambiguous between the numeral reading "one cause" and the indefinite article reading "a cause." Zinnsner (Du Châtelet 2009: 139) opts for the numeral reading, and I agree, since otherwise the argument seems obviously fallacious.

25. Thanks to Fatema Amijee for pressing me on this point.

26. Though one might here make reference to what some medieval thinkers called an essentially ordered causal series; see e.g. Thomas Aquinas in ST I q46 a2 ad7.

27. I cite from Hume's *Treatise of Human Nature* as T [book].[part].[section].[paragraph], all from Hume 2007a. I cite from Hume's *Enquiry Concerning Human Understanding* as E [section].[paragraph], all from Hume 1999. I cite from Hume's *Dialogues Concerning Natural Religion* as *Dialogues* [part].[paragraph], all from Hume 2007b.

28. See T 1.3.7.2, *Dialogues* 9.6

29. See T 3.1.1.18, E §4.2.

30. For a look at one of her arguments see for instance Amijee (forthcoming).

31. Thanks to Fatema Amijee, an audience at the New Voice Talk Series, and a reviewer for the volume for their excellent suggestions. This chapter has greatly benefited from their excellent comments and suggestions.

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