Who's Afraid of Infinite Numbers? Leibniz and the World Soul
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In a recent article (Carlin, 1997), Laurence Carlin has developed an insightful interpretation of the reasoning behind Leibniz's rejection of the idea that there might be a soul of the world and, in particular, of the idea that such a soul might be God. Carlin presents a number of texts to help support the various assumptions he makes in what I take to be the central argument in defense of his interpretation. However, it is with reference to a long passage from Leibniz's letter to Des Bosses of 11 March 1706 that Carlin actually formulates his ultimate argument, and so I will begin my own analysis with a consideration of that passage:

> The actual infinite in magnitude cannot be dealt with in the same manner as [the infinite] in multitude.
>
> The arguments against the actual infinite suppose that if this is admitted, there will an infinite number and that all infinities will be equal. But it must be observed that an infinite aggregate is neither one whole, or possessed of magnitude, nor is it consistent with number. Accurately speaking, instead of an infinite number, we ought to say that there are more than any number can express, or instead of an infinite straight line that it is a straight line continued beyond any magnitude that can be assigned, so that a larger and larger straight line is always available. It is of the essence of a number, a line, or any whole to be terminated. Hence even if the world were infinite in magnitude, it would not be one whole, nor could God be conceived, with certain of the ancients, as the soul of the world, not only because he is the cause of the world, but also because such a world would not be one body, nor could it be regarded as an animal, nor, indeed, would it have any but a verbal unity. It is therefore an abbreviated way of speaking when we speak of one thing where there are more than can be understood in a single assigned whole, and we treat like a magnitude that which does not have the properties of a magnitude. [G.II.304-305]

Carlin writes that "Leibniz begins by pointing to a difference between the actual infinite with respect to multitude, or number, and the actual infinite with respect to its magnitude, or size." Thus Carlin takes Leibniz to be *asserting*, in the

one-sentence paragraph at the beginning of the passage, that there is a significant difference between how one should treat infinite magnitude and infinite multitude. Carlin then argues that Leibniz rejects the idea that the world is one whole on the ground that it is infinite in both size and number:

> The world, according to Leibniz, is infinite in every conceivable respect: size and number. As such, it cannot intelligibly be labeled a 'whole,' because, as Leibniz says, 'it is the essence .... of whatever is a whole to be limited.' But since the world is unlimited with respect to size and quantity, it cannot be properly called *one* whole, or *one* thing [Carlin, 1997: p. 11]

The conclusion that there can be no world soul is then reached by means of the assumption that only wholes can possess souls: "only entities which are wholes can be endowed with souls .... It follows that there is no soul of the world" (Carlin, 1997: pp. 13-14).

Although his argument suggests that the reason Leibniz thought the world could not be a whole is because it is infinite *both* in number *and* in size, the thrust of Carlin's previous remarks, especially his assumption that Leibniz meant to distinguish between the infinite in magnitude and the infinite in multitude, seems to be that the only feature of the world that is relevant to its not being a whole is its infinite *size*. The reason for assuming this is not hard to find. For earlier in his paper Carlin quotes the following passage from Theodicy § 195:

> There is an infinite number of creatures in the smallest particle of matter, because of the actual division of the continuum to infinity. And infinity, that is to say, the accumulation of an infinite number of substances, is, properly speaking, not a whole any more than the infinite number itself, whereof one cannot say whether it is even or uneven. That is just what serves to confute those who make of the world a God, or who think of God as the Soul of the world; for the world or the universe cannot be regarded as an animal or as a substance. [T 249/G.VI.232]

In this passage the argument against a world soul seems to turn exclusively on the fact that the world is an "accumulation of an infinite number of substances." But then, given that it is also said that "there is an infinite number of creatures in the smallest particle of matter," which is, of course, a central Leibnizian doctrine, an obvious problem arises. As Carlin puts it:

> Why .... should we admit that infinite aggregates, like the world, cannot admit of a soul? After all, organic bodies, according to Leibniz, just are an accumulation of infinitely many substances, yet he clearly thought they had souls. [Carlin, 1997: p. 7]

But in his discussion of the passage from the letter to Des Bosses, Carlin suggests that the reason Leibniz allows an aggregate of infinitely many substances of *limited spatial extent* to have a soul, while not allowing the world to have a soul, is precisely because, while both the world and the aggregate of limited spatial extent are infinite in multitude, the former, but not the latter, is infinite in respect of magnitude and hence cannot be considered a whole. In support of this contention, Carlin points out that earlier in the same letter, Leibniz had told Des Bosses that "being and one are convertible, and as there is indeed being through aggregation, it is also one, although this being and unity are semimental" (G.II.304). He then went on to declare that the body of an animal "is not one being *per se*, but an aggregate, and [therefore] it has Arithmetical unity, not Metaphysical unity" (G.II.304). Now while Carlin does not make explicit just what he takes Leibniz to mean by an "Arithmetical unity" here, his suggestion seems to be that for Leibniz the body of an animal has arithmetical unity in virtue of the fact that it can be perceived as a single, limited object. Some infinite aggregates, then, can be perceived as spatially limited and hence are wholes; the organic bodies of animals are examples of such wholes. On the other hand, the world is an infinite aggregate that cannot be perceived as a single, limited object; hence the world cannot be a whole. Hence the organic bodies of animals can have souls in virtue of the fact that they can be perceived as spatially limited, whereas the world cannot have a soul because it cannot be perceived as spatially limited.

Now while I find myself in general agreement with Carlin's interpretation of the reasoning behind Leibniz's rejection of a world soul, I do not find his suggested resolution of the problem discussed in the previous paragraph altogether satisfactory. One question I want to raise about his interpretation of the long passage from the letter to Des Bosses of 11 March 1706 is whether we can really take Leibniz to be *asserting* that the actual infinite in magnitude cannot be dealt with in the same way as the actual infinite in multitude. I have two reasons for being cautious. First, the passage in question is Leibniz's response to the following remarks of Des Bosses in his letter to Leibniz of 2 March 1706:

> I wish to know whether it is as necessary to admit in nature the actual infinite in magnitude as it is the [actual infinite] in multitude. Ptolemy has indeed rejected the former while asserting the latter. But do you approve his opinion and his solutions? If not, pray suggest some expert, any guide I could safely follow in defending the infinite, or at least briefly indicate the key to the difficulty. For I do not find the false hypotheses on which you say the adversaries of the infinite depend, and I have looked at no one who satisfies me. [G.II.302]

When Leibniz begins his response by saying that "the actual infinite in magnitude cannot be dealt with in the same way as [the actual infinite] in multitude," could he merely be intending to signal Des Bosses that he is now turning to address Ptolemy's claim that there is an actual infinite in multitude but not an actual infinite in magnitude, rather than himself asserting that the actual infinite in magnitude cannot be dealt with in the same way as the actual infinite in multitude? This might seem to be suggested by the fact that the sentence in question is set off from the rest of the passage in a paragraph of its own. But the main reason I raise this question has to do with my second reason for caution, namely, that in the rest of the passage Leibniz does not seem to distinguish clearly between these two cases. He says, for example, that "accurately speaking, instead of an infinite number, we ought to say that there are more than any number can express, or instead of an infinite straight line that it is a straight line continued beyond any magnitude that can be assigned, so that a larger and larger straight line is always available." What he says here in the first instance seems to deal with the infinite in multitude, while what he says in the second instance seems to deal with the infinite in magnitude, but without any hint that they are to be treated differently. In both cases we are cautioned against asserting an infinite quantity: actual infinite multiplicity should not lead to the assertion of an infinite number, nor should actual infinite extension lead to the assertion of an infinite magnitude (which I suppose would again involve the assertion of an infinite number as the measure of the magnitude in question). I see nothing in the passage to suggest that Leibniz intends to treat the two cases as significantly different, nor the slightest hint of how he would treat them differently. But then it is not clear how Leibniz can accept that infinite aggregates of limited spatial extent can be wholes while denying that the world is a whole. For why does Leibniz believe that an actual infinite in magnitude cannot be a whole? I suppose that it is for the same reason that he seems to think that an actual infinite in multitude cannot be a whole, namely, that the existence of such wholes would imply that there is an infinite number, which, according to Leibniz, implies a contradiction. In a letter to Bernoulli from August 1698, Leibniz wrote:

> I proved beyond any doubt that the number or multitude of all numbers implies a contradiction, if taken as a unitary whole. I think the same is true of the largest number, and of the smallest number, or the lowest of all fractions. The same has to be said about these, as about the fastest motion and the suchlike. [GM.III.535]

And in the long passage from the letter to Des Bosses of 11 March 1706 that we have been considering, Leibniz writes that "arguments against actual infinity as-

sume, that if this be admitted, there will be an infinite number and that all infinities will be equal." But he then remarks that "an infinite aggregate is neither one whole, or possessed of magnitude, nor is it consistent with number." Bertrand Russell's observation concerning this passage does not seem unreasonable: "the actual infinite is thus defended," he writes, "on the express ground that it does not lead to infinite number" (Russell, 1937: 110).

At this point, it is worth remembering that in the passage from *Theodicy* § 195 quoted above Leibniz seems to make the argument against a world soul turn exclusively on the universe's being infinite in multitude—on its being, that is, an "accumulation of an infinite number of substances." It is said that such an accumulation cannot be a whole, properly speaking, and the suggestion certainly seems to be that this is because an infinite number cannot make a whole. Moreover, the argument is perfectly general: it applies to *any* accumulation of an infinity of substances. Indeed the passage begins with a remark about there being an infinite number of creatures "in the smallest particle of matter," so the argument seems to imply not only that the world cannot be a whole, but also that *no body* can be a whole. So I don't see how Leibniz's apparent argumentative strategy here can be squared with Carlin's claim that the reason Leibniz thought that an aggregate of infinitely many substances of finite extent could possess a soul but that the world could not is because the latter, but not the former, is infinite in extent. Thus I am not sure that Carlin has succeeded in extricating Leibniz from the problem he makes for himself by admitting that organic bodies, indeed all bodies, are infinite accumulations of substances while at the same time admitting that they are wholes. For if Leibniz is going to object, as he seems to, to the world's having a soul on the ground that the world is not a whole because it is an infinite accumulation of substances, then the same argument should apply as well against there being *any* infinite accumulation of substances that could possess a soul—including such accumulations that appear to have only a finite magnitude. And if he should attempt to avoid this consequence by asserting that only infinite accumulations of substances that give rise to infinite magnitudes are not wholes, while those that don't give rise to infinite magnitudes can be wholes, then it seems that his argument against infinite number would collapse. It is undoubtedly for this reason that Bertrand Russell thought that Leibniz sought to avoid infinite number by arguing that only *una per se* —things to which the term "one" are properly applied—are ultimately real. On the other hand, it seems to me that Carlin is right to object (Carlin, 1997: pp. 7-9) to Russell's suggestion that "the notion of a *whole* can only be applied to what is substantially indivisible" (Russell, 1937: p. 115).

For not only does Leibniz seem to treat bodies of finite spatial extent as wholes, but he also treats finite systems of such bodies as wholes. Thus, for example, in *Theodicy* § 146 he suggests that the solar system is a whole.

Leaving the problem concerning bodies of finite spatial extent aside for the moment, there is a further question to be considered, namely, whether in light of his other commitments Leibniz could have consistently denied that the world is a whole. Of course, as Carlin points out, in the long passage from the letter to Des Bosses of 11 March 1706, Leibniz simply seems to *define* a whole as something that is limited. "It is," he writes, "of the essence of a number, a line, or any whole to be terminated." But then, given the assumption that the world is unlimited, this would make the denial of the world's being a whole, and consequently of its possessing a soul, trivial and hence unconvincing. Why should anyone accept Leibniz's proposed definition of a whole? I have suggested that the substantive reason behind Leibniz's denial of the world's being a whole, and hence of its possessing a soul, turns on his rejection of the possibility of infinite number. But the question I want to take up now is whether or not Leibniz's other commitments should have forced him to accept that the world is a whole in a sense that does imply infinite number. I believe that they should have. After all, Leibniz often speaks of the *whole* world, and it is hard to see how he could have avoided doing so. For example, his well-known doctrine that every substance perceives, or expresses, the *whole* world, albeit confusedly, seems to require that the world have more than the merely "verbal unity" that he attributes to it in the letter to Des Bosses of 11 March 1706. In section 9 of the *Discourse on Metaphysics*, Leibniz puts the point in the following way:

> Moreover, every substance is like a complete world and like a mirror of God or of the whole universe [*tout l'univers*], which each one expresses in its own way, somewhat as the same city is variously represented depending upon the different positions from which it is viewed. Thus the universe is in some way multiplied as many times as there are substances, and the glory of God is likewise multiplied by as many entirely different representations of his work. It can even be said that every substance bears in some way the character of God's infinite wisdom and omnipotence and imitates him as much as it is capable. For it expresses, however confusedly, everything (*tout*) that happens in the universe, whether past, present, or future—this has some resemblance to an infinite perception or knowledge. And since all other substances in turn express this substance and accommodate themselves to it, one can say that it extends its power over all the others, in imitation of the creator's omnipo-

tence. [G.VI.434/AG.42]

Given his definition of perception as "the expression of the many in the one" [G.II.311], it seems reasonable to say that Leibniz is committed to the position that the universe is unified by the perceptions of each substance and hence that the universe not only exists as a whole but is actually given to each substance in perception as a whole. As he says in section 13 of the *Principles of Nature and Grace, Based on Reason*:

> each distinct perception of the soul includes an infinity of confused perceptions which embrace the whole universe [*enveloppent tout l'univers*] .... Each soul knows the infinite [*connoit l'infini*]—knows all [*connoit tout*]—but confusedly [G.VI.604/AG.211]

And in section 60 of the *Monadology* he puts the point as follows:

> [S]ince the nature of the monad is representative, nothing can limit it to represent only a part of things. However, it is true that this representation is only confused as to the detail of the whole universe [*tout l'univers*] and can only be distinct for a small portion of things, that is, either for those that are closest, or for those that are greatest with respect to each monad, otherwise each monad would be a divinity. Monads are limited, not as to their objects, but with respect to the modifications of their knowledge of them. Monads all go confusedly to the infinite [*vont toutes confusement à l'infini*], to the whole [*au tout*]; but they are limited and differentiated by the degrees of their distinct perceptions. [G.VI.617/ AG.220-221]

It is significant, I think, that in this last passage Leibniz actually glosses the term "infinite" with the expression "the whole."

The last sentence of the passage quoted above from section 9 of the D*iscourse on Metaphysics* alludes to the doctrine that explains how every substance perceives or expresses the whole universe, i.e., the doctrine of universal harmony, according to which each substance in the world stands in constant quasi-causal contact with every other substance in the world. In section 56 of the *Monadology* Leibniz writes:

> This interconnection or accommodation of all created things to each other, and each to all the others, brings it about that each simple substance has relations that express all the others, and consequently, that each simple substance is a perpetual, living mirror of the universe. [G.VI.616/AG.220]

He continues in sections 61 and 62 as follows:

> In this respect, composite substances are analogous to simple substances. For everything is a plenum, which makes all matter interconnected. In a plenum,

every motion has some effect on distant bodies, in proportion to their distance. For each body is affected, not only by those in contact with it, and in some way feels the effects of everything that happens to them, but also, through them, it feels the effects of those in contact with the bodies with which it is itself immediately in contact. From this it follows that this communication extends to any distance whatsoever. As a result, every body is affected by everything that happens in the universe, to such an extent that he who sees all can read in each thing what happens everywhere, and even what has happened or what will happen, by observing in the present what is remote in time as well as in space. 'All things conspire [sy*mpnoia panta*],' said Hippocrates. But a soul can read in itself only what is distinctly represented there; it cannot unfold all its folds at once, because they go to infinity.

Thus, although each created monad represents the whole universe [*tout l'univers*], it more distinctly represents the body which is particularly affected by it, and whose entelechy it constitutes. And just as this body expresses the whole universe [*tout l'univers*] through the interconnection of all matter in the plenum, the soul also represents the whole universe [*tout l'univers*] by representing this body, which belongs to it in a particular way. [G.VI.617/AG.221]

Moreover, Leibniz defines harmony as "unity in plurality" (G.VII.87/L.426), so it is difficult to see how this world, which is most harmonious, could fail to be a unified whole in some fairly strong sense. "Everything conspires," Leibniz approvingly quotes Hippocrates as saying, and he himself speaks often of the "interconnection of all created things." And it is the same glue that seems to hold the world together as a whole on Leibniz's view that also holds together the organic bodies which possess souls, namely, a harmony among the perceptions of substances. It is the interconnection of the phenomena of substances that allows us to speak of a harmonious world as one that is a unified whole in some fairly strong sense: "God was able," he wrote in 1698, "to give each substance its phenomena independent of those of the others, but in that way he would have made, so to speak, as many worlds without connection as there are substances" (G.IV.519). As Leibniz was well aware, it was the supposed universal sympathy of all things that led "the ancients," to which he so frequently refers, to postulate the existence of a world soul. And in light of the passages we have lately been examining, his denial of such a soul on the ground that the universe is not a whole seems both desperate and perverse. Just how desperate he may have been is shown by just how close he sometimes seems to come to suggesting that God is the soul of the

world. For example, at the end of section 13 of *Principles of Nature and of Grace, Based on Reason* Leibniz declared:

> But confused perceptions are the result of impressions that the whole universe [*tout l'univers*] makes upon us; it is the same for each monad. God alone has distinct knowledge of the whole [*de tout*], for he is its source. It has been said quite nicely that he is like a center that is everywhere, but that his circumference is nowhere, since all [*tout*] is present to him immediately, without any distance from the center. [G.VI.604/AG.211]

Moreover, in his study for his letter to Des Bosses of 5 February 1712, Leibniz argued that "God certainly sees things exactly as they are according to geometrical truth, although he also perceives each thing just as it appears to each other perceiver, and so all other appearances are contained eminently in God's representation" (G.II.438). This suggests something very much like the relation between the perceptions of a dominant monad and the perceptions of the substances that form its organic body—namely, that the latter are contained eminently in the former; and if God perceives the whole distinctly, then it seems we are very close indeed to saying that he has a relationship to the whole world not unlike the relationship that Leibniz asserts to obtain between finite souls and their bodies. Robert Adams has sought to avoid this conclusion by arguing that "God, being absolutely perfect, perceives everything with perfect, and therefore equal, distinctness, and hence is no more expressed by one body than another, and is the only substance that has no distinctive 'point of view' within the universe" (Adams, 1994: 394). But one wonders why God could not be said to have the point of view of the universe as a whole, as suggested by Leibniz's observation that God's representation of the universe is "an ichnograph or geometrical representation" which is "unique" (G.II.438). If the reply is that the universe is not a whole according to Leibniz, we return to the starting point, and the question remains: "how, in the name of coherence, can the world fail to be a whole in some fairly strong sense according to Leibniz?"

All in all, it seems to me that systematic demands, like those arising from the doctrines of body and corporeal substance, universal expression, and universal harmony, should have led Leibniz to embrace the idea that there are infinite wholes, including the world itself, and hence to embrace the idea of infinite number. His failure to embrace infinite number was due to an uncharacteristic failure of mathematical imagination on his part, since his arguments against infinite number were premised on the assumption that infinite numbers must exhibit the same arithmetic characteristics as finite numbers. Thus in an early piece (1679?)

that Gerhardt identifies as an unsent letter to Malebranche, Leibniz argued that "the number of all numbers implies a contradiction, which I show thus":

> To any number there is a corresponding number equal to its double. There-fore the number of all numbers is not greater than the number of even num-bers, i.e., the whole is not greater than its parts. [G.I.338]

Similarly, in the letter to Johann Bernoulli of August 1698 cited earlier, Leibniz wrote:

> It seems to me that one of two things must be said: either the infinite is not one whole or, if it is a whole, the infinite is not greater than its parts, which is absurd. Many years ago I proved beyond any doubt that the number or multi-tude of all numbers implies a contradiction, if taken as one whole. [GM.III.535]

But of course Richard Dedekind was eventually to take this supposed contradic-tion as the very defining condition of an infinite set, i.e., an infinite set is one that has a proper subset whose members can be placed in one-to-one correspondence with all the members of the set. In his letter to Des Bosses of 1 September 1706, Leibniz argued that whereas it was possible to assert something about all numbers distributively, it was not possible to assert something about all numbers collec-tively:

> So it can be said that to every even number corresponds its odd number, and vice-versa; but it cannot on that account be accurately said that the multiplici-ties of odd and even numbers are equal. [G.II.315]

But of course Georg Cantor was eventually to define the equality of infinite sets precisely in terms of a one-to-one correspondence between their members. Against Leibniz's arguments dismissing infinite number can be set Cantor's objection against all such arguments:

> All so-called proofs against the possibility of actually infinite numbers are faulty, as can be demonstrated in every particular case, and as can be con-cluded on general grounds as well. It is their πρῶτον ψεῦδος [primary mistake] that from the outset they expect or even impose all the properties of finite numbers upon the numbers in question, while on the other hand the infinite numbers, if they are to be considered in any form at all, must (in their contrast to finite numbers) constitute an entirely new kind of number, whose nature is entirely dependent upon the nature of things and is an object of research, but not of our arbitrariness or prejudices. [as quoted in Dauben, 1979: 125]

It is an irony of history that in his lonely quest to overcome the long-established prejudice against the actual infinite and infinite numbers, Cantor embraced Leibniz as a fellow traveler. For example, in a paper published in 1887/1888, Cantor wrote:

> Correspondingly I distinguish between an 'Infinitum aeternum increatum sive Absolutum,' which refers to God and his attributes, and an 'Infinitum creatum sive Transfinitum,' which is predicated whenever an actual infinite must be acknowledged *in natura creata*, as for example, according to my firm conviction, in relation to the actual infinity of created individuals in the universe as well as on our earth, and, in all probability, even in each ever so small extended part of space, in which I agree completely with Leibniz. (*Epistola ad Foucher*, t. 2 *operum*, Dutens, ed., p. 1, para. 243) [Cantor, 1932: 399; as quoted in Friedman, 1979: 187-188]

The passage that Cantor cites here from Leibniz's letter to Foucher of January 1692 reads as follows:

> I am so in favor of the actual infinite that instead of admitting that Nature abhors it, as is commonly said, I hold that Nature makes frequent use of it everywhere, in order to show more effectively the perfections of its Author. Thus I believe that there is no part of matter which is not—I do not say divisible—but actually divided; and consequently the least particle ought to be considered as a world full of an infinity of different creatures. [G.I.416]

It was not that Cantor was unaware of Leibniz's rejection of infinite number, for he wasn't. It was rather, I think, that Cantor saw Leibniz as one who, in accepting the existence of the actual infinite, had overcome one large obstacle standing in the way of a theory of transfinite numbers. Most thinkers of note prior to Cantor had taken the position that the only way to avoid the paradoxes of the infinite was to follow Aristotle's lead and deny the actual infinite while embracing the potential infinite. Leibniz's metaphysical commitments led him break with tradition at least to the extent of accepting the actual infinite. Thus Cantor could have been encouraged and even inspired by Leibniz's example, while at the same time recognizing that Leibniz had failed to appreciate fully the significance of his acceptance of the actual infinite. Cantor thought, rightly I think, that once he had embraced the actual infinite, Leibniz should have embraced infinite number. His failure to do so must have made Cantor painfully aware of just how deeply ingrained was the πρῶτον ψεῦδος of the traditional arguments against infinite number.

I have taken the position that the argument against infinite wholes that Carlin elucidates is fallacious and ultimately in very great tension with other of Leibniz's systematic doctrines. But had Leibniz accepted, as I think he should have, the view that the universe is a whole, would he then have been forced to accept the position that God is the soul of the world? I think the answer is no, since he had other means to block the inference. For example, in the long passage from the

letter to Des Bosses of 11 March 1706, Leibniz argues that God cannot be regarded as the soul of the world "not only because he is the cause of the world, but also because such a world would not be one body." Thus Leibniz thought that God's being the cause of the world was enough to block the inference to God's being the soul of the world. Moreover, I think that the other consideration he mentions here—that the world is not one body—could also be used to block the inference, but without assuming that the world is not one whole. We recall Adams's point that God cannot be the soul of the world because "God, being absolutely perfect, perceives everything with perfect, and therefore equal, distinctness, and hence is no more expressed by one body than another, and is the only substance that has no distinctive 'point of view' within the universe" (Adams, 1994: 394). I earlier suggested that one might respond to this by arguing that God might be said to have the point of view of the universe as a whole, rather than a point of view "within the universe." And if Leibniz had accepted this, as he sometimes seems close to having done, it would not follow that God must be the soul of the world. For it seems that Leibniz could certainly have denied that the universe as a whole should count as a body. For a body by its nature must be spatial, that is, stand in spatial relationships with other bodies. But since there is nothing, no bodies, outside of the universe, the universe cannot be said to stand in any spatial relationship to other bodies. Hence it cannot be a body, properly speaking, and thus, in particular, it cannot be the body of God.

To a large extent this last argument complements Carlin's interpretation of Leibniz's argument against a world soul, for it also turns on the assumption that the universe is unlimited. The difference is that the argument that Carlin focuses on turns on the assumption that the universe cannot be one *whole*, whereas the argument I have suggested turns on the assumption that the universe cannot be one *body*. I do not deny that the argument that Carlin elucidates in his paper is one that Leibniz himself adopted, for it clearly is. Rather, I have argued that it is not an argument that fits well with other of Leibniz's commitments and that Leibniz himself had other arguments to the same effect which fit better.[1]

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