

BOOK REVIEWS

**Symposium on
*Leibniz: Determinist, Theist, Idealist***

by Robert Merrihew Adams

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Reviewed by

John Carriero, University of California, Los Angeles

Massimo Mugnai, University of Florence

Daniel Garber, University of Chicago

Response by

Robert Merrihew Adams, Yale University

Review of Robert Merrihew Adams's *Leibniz: Determinist, Theist, Idealist
by John Carriero, University of California, Los Angeles**

Robert M. Adams's *Leibniz: Determinist, Theist, Idealist* will be a landmark in Leibniz scholarship. It is a privilege to be asked to comment on it.

The part of the book I wish to focus on is the first chapter, which descends from Adams's seminal article "Leibniz's Theories of Contingency." Adams's work on contingency in Leibniz has been instructive for me on any number of important points. In that work Adams uncovers Leibniz's "possible in its own nature" account of contingency, shows how Leibniz thought he could maintain that it is a contingent truth that this possible world is the best possible world, persuasively argues that Leibniz believes that there are contingent connections between a merely possible substance and its predicates, makes a convincing case that Leibniz did not make an exception for the predicate *existence* to his celebrated (or notorious) conceptual containment principles, and, perhaps most important, helped us to appreciate the gulf between Leibniz's theorizing about contingency and modern possible worlds semantics.

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I could go on, but the title of today's session is not "Author meets Admirers" but rather "Author meets Critics." And there are points of emphasis and evaluation where I disagree with Adams. Broadly, I want to argue for two main points. First, I want to record my sense that Leibniz's possible in its own nature defense is even less satisfying than Adams suggests it is. Second, I believe that Adams underrates the place of infinite analysis in Leibniz's attempt to reconcile contingency with conceptual containment. Adams, as I understand him, regards infinite analysis as one of three not unproblematic approaches to the reconciliation. I think that infinite analysis is Leibniz's only serious attempt to reconcile containment and contingency and is in better shape than Adams suggests.

Part One: *Contingency as the Absence of Internal Necessitation*

Leibniz distinguishes between something's being possible (or impossible) "in its own nature" (*sua natura*) and something's being impossible "on the hypothesis of another" (*ex alterius hypothesisi*)—that is, impossible when other things, lying outside its nature, are taken into account. Take, for example, this, the best of all possible worlds. Nothing in its nature compels its existence; nothing in its nature precludes its existence. It is possible for this world to exist, because this world is not contradictory; it is possible for this world to fail to exist, because there is no, as it were, ontological argument from its essence or nature (if one can speak of an entire world as having an essence or nature) to its existence. (Similar remarks hold, of course, for any other possible world.)

Although neither the existence nor the nonexistence of this world is *internally* necessitated, its existence is *externally* necessitated. For if we assume the existence of a supremely perfect being who does not settle for anything less than the best, then, under certain assumptions, it is impossible for this world not to exist. Such a being externally necessitates the existence of this world.

External necessitation is not merely a causal determinism. Causal determinism is compatible with the idea that the causal antecedents could have been different and so the outcome could have been different. If these three assumptions are granted—(i) that it is necessary for an (omnipotent) supremely perfect being to exist, (ii) it is necessary for such a being to choose the best, and (iii) it is necessary of this world that it is the best—then it is impossible for this world not to exist. Since the "determining" grounds could not have been otherwise, the result could not have been otherwise. Leibniz was not, of course, always prepared to grant the second and third of these assumptions, but my point here is only that there is a set of assumptions

under which external necessitation is indeed necessitation—that is, carries with it the absolute impossibility of any other outcome.

The key idea behind Leibniz's first account of contingency is to maintain that while contingency requires the absence of *internal* necessitation, it does not require the absence of *external* necessitation. So even if it is granted that the existence of this world is externally necessitated by God, its existence is still contingent because it is not *internally* necessitated. This is so even if we allow that this world could not have failed to exist because God could not have done otherwise than he did.

Clearly, it's reasonable to think that absence of internal necessitation ought to count as a *necessary* condition for contingency. What's controversial here is whether absence of internal necessitation can serve as a *sufficient* condition for contingency. I want to explore this question both historically and philosophically. Would Leibniz's predecessors and contemporaries have found such a position plausible? Does the idea that absence of internal necessity suffices for contingency have anything to recommend it philosophically?

It is important to consider the historical tradition, if only for the following reason. One might have the impression that Leibniz more or less discovered the distinction between internal and external necessity (or the closely related distinction between possibility *sua natura* and possibility *ex alterius hypothesis*), and that, accordingly, he found himself in what was at the time more or less uncharted waters. That, to my mind, would affect the standards by which we assess Leibniz's employment of the distinction. "Here are new and interesting categories—the internally necessitated and the externally necessitated. It is worth at least trying out the thought that the absence of internal necessitation is all that is required for contingency."

This impression would be very much mistaken. (I hasten to mention that I'm not accusing Adams of being under this impression.) The distinction between what's internally necessitated and what's externally necessitated can be found, for example, in the medieval Arabic philosopher Avicenna. Avicenna is interesting in this context, because he combines the thesis that some things are not internally necessitated with a strict necessitarianism. On his view, only God is necessary *per se*. God causes a second being to exist, namely, the First Intelligence, which is possible *per se*; in our terminology, neither the First Intelligence's existence nor its non-existence is internally necessitated. The process by which the First Intelligence is produced by God is *emanation*, a kind of necessary causation. If B emanates from A, then it is impossible (or would involve a contradiction) for A to exist and B not to exist. So, although the First Intelligence's existence is not internally necessitated, it is still absolutely necessary that it exist. This is because it is absolutely necessary

for God to exist, and given that God exists, it is absolutely necessary that the First Intelligence exist.

The conjunction of a strict necessitarianism with the position that there are things whose existences are not internally necessitated can be found much closer to Leibniz's home. Spinoza, although a strict necessitarian, distinguishes between those things which are internally necessitated by reason of their own essence and those things which are externally necessitated by reason of some (external) cause. Spinoza attaches some importance to the distinction, as it tracks a more fundamental distinction between substance and its attributes, on the one side, and modes, on the other. Whereas substance (and its attributes) contains within itself the grounds of its own existence, its modes do not. Even so, the existence of the modes is just as necessary as the existence of substance: given that God exists, the very modes that do exist *had* to do so. This is because certain facts about God's nature—Adams points to (Spinoza's understanding of) divine infinity—determine how God's causality is to be exercised.

Neither Avicenna's nor Spinoza's necessitarianism involves the view that it is not *internally* possible for things which exist not to exist. Rather their necessitarianism is based on certain commitments about how God's power is exercised. In particular, they both reject the view that God exercises his power contingently, through the voluntary activity of creation, and hold instead that God's power is necessarily exercised in the way that it is.

It is not just the necessitarians who held that contingency required the absence of external necessitation. Aquinas, for example, holds "That God does not will other things in a necessary way" (SCG, I, ch. 81) and "That the divine will does not remove contingency from things nor does it impose absolute necessity on them" (SCG, I, ch. 85). The sort of contingency that Aquinas is interested in goes well beyond the fact that there are things whose existence (or whose nonexistence) is not internally necessitated.

Leibniz's suggestion that absence of internal necessitation is a sufficient condition for contingency is not then trying out an idea in uncharted waters, but rather involves a significant departure from a firmly established tradition. Well, is such a departure well motivated? As Adams recognizes, it is hard to see that it is. He expresses sympathy for the objection "that the conception of the contingent as that which has some alternative that is possible *in itself* . . . does not really show how there can be any contingency in the Leibnizian universe." Nevertheless, Adams, in a spirit of exegetical charity, tries to put the departure in the best light:

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Later [Leibniz's] principal reason for insisting on some sort of contingency in connection with free action seems to have been to ensure the reality of choice—to ensure that what happens is really influenced by final causes and judgments of value.

This is the point that Leibniz most often insists on in distinguishing his views about necessity from Spinoza's. Spinoza held that there are no final causes in nature, that God does not act for an end, and that things are called good or bad with regard only to how they affect us, being quite indifferent to God (*Ethics, I, Appendix*). He said that actual intellect and will must be referred to God-as-an-effect [*natura naturata*] and not to God-as-a-cause [*natura naturans*] (*Ethics, I, prop. 31*), and denied that a divine intellect or will could resemble ours in anything more than name alone (*Ethics, I, prop. 17, schol.*). Indeed there is no room in Spinoza's system for God to choose, for there is nothing to be excluded by God's choice. By the necessity of the divine nature, since it is infinite in Spinoza's sense, absolutely everything possible must be actual (*Ethics, I, prop. 16*). [Adams, pp. 20-21]

Adams is absolutely right that Leibniz and Spinoza disagree sharply over the question of final causality. But I wonder, first, whether these differences over final causality reach the question of contingency. And, putting aside the question of contingency, I wonder, second, how much these differences have to do with the distinction between internal and external necessitation, upon which Leibniz's first theory of contingency is based.

Let's grant "the reality of God's choice" and with it the view that final causality (and considerations of value) make a difference to what happens. How close does that get us to contingency?

It is true that the two necessitarian philosophers with whom I am most familiar, Avicenna and Spinoza, did deny final causality. As mentioned earlier, Avicenna held to a theory of nonvoluntary emanation; and Spinoza, as Adams points out, does not give the divine will a fundamental role in determining what happens. Conversely, it is true that thinkers who believed that a contingent world originated from a necessary being located that contingency in the voluntary exercise of God's power. (Indeed, Scotus offers an argument from contingency to existence of a will in God.) But this shows at most that, given certain theological assumptions about the origin of the world in a necessary being, final causality must be involved in any reasonable account of contingency. What it doesn't show is that the fact that final causality plays a role in determining what happens is enough by itself to secure contingency.

Well, how plausible is this last claim? Let me offer some more historical evidence that Leibniz's predecessors and contemporaries would not have subscribed to the idea that the mere involvement of the divine will or final causality in establishing a state of affairs ensures the contingency of that state of affairs.

Aquinas provides us with evidence that not everything that final causality touches is contingent. He holds that there is at least one thing which God wills with absolute necessity, namely, his own happiness. Consider, further, Aquinas's claim "God wills something in the creature, not by absolute necessity, but only by a necessity of supposition." It is clear from this claim itself (and Aquinas's argument for it) that the mere fact that God's will is involved in bringing about a state of affairs does not settle the question of the contingency of that state of affairs. Aquinas's position, I take it, is that if God, for whatever reason, were to will this world with the same absolute necessity that he wills his own happiness, then the existence of this world would be absolutely necessary.

Let's turn to Spinoza. Although he denies that God's will plays a fundamental role in determining what happens in the universe, he is willing to entertain such a position for the purposes of an *ad hominem* argument. That is, Spinoza argues that "even if it is conceded that will pertains to God's essence, it still follows from his perfection that things could have been created by God in no other way or order" (IP33S2). There follows a series of more or less familiar arguments from traditional philosophical theology designed to show that things could not have been different without God's having been in some important sense different. It is clear from the arguments and the responses that Spinoza envisions to the arguments that neither Spinoza nor his opponents would take the contingency of the universe to be settled simply by allowing that God's will plays a role in determining what happens.

Now I want to turn to my second question, which concerns the relationship between the idea that other worlds besides our own are internally possible and the claim that final causality and judgments of value play a role in settling what happens. One can imagine argumentative connections in both directions here. That is, one might view Leibniz as reasoning along the following lines from internal possibility to choice. Other worlds besides this are internally possible. There must be a principle in God which settles the matter of which of all the internally possible worlds gets actualized. And, finally, the only plausible candidate for this principle is the divine will. And, again, one might imagine Leibniz as reasoning from choice to internal possibility (I believe this is the direction that Adams usually has in mind when he writes of preserving the "reality of choice"): *if* choice is to play a role *then* there must be internally possible alternatives.

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Avicenna and Spinoza would have disputed, of course, any argument from internal possibility of other worlds to the idea that divine volition plays a role in settling what happens. But their denial does leave them with a problem: Why should God, an absolutely necessary being, acting necessarily, have produced this world rather than some other? What is so special about this world that the divine nature gives rise to it? Spinoza, as I understand him, thinks the edge can be taken off this question because there is a privileged order, namely, the unique infinite order of produced things.

What about the route from choice to internal possibility? I am happy to grant that the reality of God's choice requires that there be internally possible alternatives. What's hard to see here is that this reality needs preserving inasmuch as it is hard to find anyone who wanted to deny that there are internally possible alternative orders.

One possible candidate would be Spinoza. Some commentators have wanted to attribute to Spinoza the view that God makes the universe consisting of every internally possible thing. I think Adams may be reading Spinoza in this way in the following remark:

Indeed there is no room in Spinoza's system for God to choose, for there is nothing to be excluded by God's choice. By the necessity of the divine nature, since it is infinite in Spinoza's sense, absolutely everything possible must be actual (*Ethics*, I, prop. 16). [Adams, p. 21]

I myself don't read Spinoza as holding that God makes the universe consisting of every internally possible thing (whatever that may be). But even if you understand Spinoza as committed to the thesis that there is exactly one world consisting of all internally possible things and God has to make it, I think there can be no doubt that Spinoza believes that there are other, less impressive orders which are *internally* possible.

The only other candidate that I can think of for denying that other orders besides the actual one are internally possible is Leibniz himself. Not, of course, that Leibniz welcomes such a position with open arms. Rather, certain of his metaphysical commitments—namely, his containment principles—make it appear as if this world is the only internally possible world. But of course the “possible in its own nature” conception of contingency does nothing to explain why conceptual containment does not *internally* necessitate this world; the solution to this difficulty must lie elsewhere.

So I remain disenchanted with the “possible in its own nature” treatment of contingency. It may be that internally possible alternatives are needed for the reality

of choice, but it is my impression that necessitarians and nonnecessitarians alike thought that it was obvious that there were such alternatives. And I don't think that the presence of internally possible alternatives creates irresistible pressure in support of the view that God's choice (as opposed to some other, nonvoluntary kind of causation) determines what happens; and I don't think the reality of God's choice by itself is enough to get us contingency. I am tempted to think that the significant differences between Spinoza and Leibniz that Adams calls our attention to have, in the end, rather little to do with contingency.

One final point before leaving Leibniz's first theory of contingency. Adams notes that a fundamental difference between Leibniz and Spinoza is that Leibniz allows goodness or value a role in determining what happens. This is an immediate consequence of allowing the divine will to determine what happens, since good is the formal object of the will. Leibniz's God creates the *best* of all possible worlds—that is, the world that is most good.

Adams is surely right that this makes for a striking difference with Spinoza, who doesn't accord will a place in determining what happens, and so doesn't accord goodness or value such a role. Still, I think that there's something elusive about the contrast. It is not clear, for example, that Spinoza and Leibniz would even disagree about which world gets actualized. This is because, I believe, good is a transcendental property for Leibniz, convertible with being or perfection: the more good something is, the more being or reality or perfection it has. So for Leibniz the world that is most good is also the world with the most reality and the world with the most perfection. But for Spinoza, too, the world which follows from God's infinite perfection is also the world with the most reality and perfection. In other words, if, as I suspect, orderings in terms of goodness are, for Leibniz, isomorphic to orderings in terms of perfection, it looks as if he shares enough common ground with Spinoza to agree on which world gets actualized. Their primary disagreement seems to be that while Leibniz thinks worlds can be assessed along two isomorphic dimensions, namely, that of perfection or reality and that of good or value, Spinoza thinks they can be assessed along only the former.

Part Two: *Conceptual Containment and Infinite Analysis*

Let's turn to Leibniz's theory of infinite analysis. According to this theory, a necessary truth is a truth which can be demonstrated in a finite number of steps; a contingent truth is a truth which cannot be so demonstrated, but whose analysis goes on forever.

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Adams is interested in two applications of this theory. In one application, Leibniz argues that “this world is the best of all possible worlds” is a contingent truth, because it would require an infinitely complex argument to establish such a claim. In another application, Leibniz uses the theory in order to reconcile contingency with his containment doctrines. I’m going to focus on the second use, although I want, following Adams, to look at the relative merits of the two uses. Roughly, he thinks that the first (“bestness of this world”) use is more successful than the second (“containment”) use. My sense is that it is the other way around.

Recall that Leibniz holds that each individual substance has a complete concept, that is, a concept containing all of that substance’s predicates. This raises the question, “How can the connection between an individual substance and some of the properties or events involved in its concept be contingent?” (p. 32). Adams proceeds to consider three responses that Leibniz might make to this question, each of which Adams regards as problematic. One of the responses is based on Leibniz’s theory of infinite analysis; the other two are not.

One line of response is based on Leibniz’s remark that, if Caesar didn’t cross the Rubicon, he “would do nothing impossible in itself, although it is impossible [*ex hypothesi*] for that to happen.” This could be taken to suggest a “possible in its own nature” account of contingency with respect to Caesar and the things he chooses: just as the existence of this world is contingent because there are other internally possible worlds, so too Caesar’s crossing the Rubicon is contingent because there are other internally possible objects of his choice (i.e., any state of affairs where he keeps to his side of the river). I explained in the first part of my comments why I think an account of contingency as merely the absence of *internal* necessitation is unsatisfying; an employment of the doctrine in this context would inherit that disappointment. There’s a further problem as well. The internally possible alternatives theory is supposed to yield a sense in which the existence of this world is contingent, even if we allow that God’s choice of this world is necessary. So what the theory would seem to provide now is a sense in which the Rubicon crossing is contingent, even if Caesar’s choice to cross the Rubicon is necessary. What we do not get is an explanation of how Caesar’s *choice* is contingent. As Adams puts it: “This line of thought, therefore, seems not to provide an explanation of the contingency of *Caesar’s* deciding to cross the Rubicon” but rather “a way in which Leibniz could say that the *reality* of Caesar’s choice is preserved” (pp. 33-34).

A second response suggested by Adams is based on a distinction between “features that are particular to the individual,” on the one hand, and “the laws of that individual’s universe, which also enter into the concept of the individual,” on the

other (p. 32). This distinction yields the following reading of Leibniz's claim that Caesar's not crossing the Rubicon is possible "in itself": "Caesar's deciding not to cross the Rubicon is viewed by Leibniz as possible in itself because it is excluded by Caesar's individual concept only in virtue of the laws of Caesar's universe, and not purely by what is particular to Caesar in Caesar's concept" (p. 32).¹

Although Adams is somewhat more sympathetic to this line in his book than he was in his earlier article, he recognizes that the close association between the laws of Caesar's universe and Caesar's concept make this line problematic.

I want to develop this difficulty a bit, mainly to bring out its intractability. I'm going to do so by adverting to Leibniz's physics. (I'm assuming that the lessons learned at the physical level of body will carry over via the principle of harmony to the psychological level of substances.) Now, we are being asked to abstract Caesar's particular features from those features that belong to him only in virtue of the laws of his universe. How might this abstraction work with respect to Caesar's body? How might we segregate its particular features from those which belong to it only in virtue of the laws of its universe?

At first blush, there appears to be a model ready at hand: Couldn't the abstraction in question be like considering matter apart from the laws of motion that it obeys? Well, it's not obvious that this is such an easy abstraction: if matter's obedience to the laws that it obeys turns out to be a sufficiently deep characteristic of it—if it is built into the nature of matter that it obeys those laws that it does—then such an abstraction may turn out to be incoherent. But putting *that* worry aside, recall that, for Leibniz, Caesar's body is not simply a chunk of matter, but an extremely complex *system* (or, better, a complex system of infinitely nested systems) of fluidlike matter in motion. What would it mean to consider such a *system* apart from the laws of motion governing the system?

We might try to consider all the sizes and velocities of the infinitely many parts of Caesar's body at time *t* (say, two minutes before his decision to cross the Rubicon). But it seems to me that the resulting entity is too tenuously connected with Caesar to be put to any philosophical use. Until we incorporate the laws that govern the motions of parts, we don't yet have a human being's body as opposed to an animal's body, or a plant's body, or a mere aggregate. In order to view that collection of moving parts as *Caesar's* body we need to include the laws of motion, so as to register his systematicity or organic unity. This is a way, I think, of developing Adams's point that "Leibniz's views imply that the laws of Caesar's universe are incorporated not only in Caesar's individual concept, but also, concretely, in the primitive forces that constitute Caesar's very substance" (p. 33).

The preceding remarks are somewhat speculative, because Leibniz never articulates or develops a distinction between Caesar's particular features and those features which belong to Caesar only through the laws of his universe. Moreover, I do not think that Leibniz is in a position to draw a philosophically significant distinction between the two. Indeed, I take it to be a central motivation behind Leibniz's complete concept principle that we cannot intelligibly consider Caesar apart from the laws of the universe into which he enters. Conversely, if there was something left when we extracted the laws from Caesar, there would have been some pressure, I should think, to identify Caesar's concept with the residual features alone rather than the entire package of particular features and laws.

Fortunately, limitations of time do not permit an exhaustive survey of the relevant texts, but there is one passage that is often referred to in order to show that Leibniz thinks that an individual substance can be fruitfully considered apart from the laws of its universe.² The culprit is from "Discourse on Metaphysics," § 13, where Leibniz remarks:

For it will be found that the demonstration of this predicate of Caesar is not as absolute as those of numbers or of geometry, but that it supposes³ the sequence of things that God has freely chosen, a sequence based on God's first decree always to do what is most perfect and on God's decree with respect to human nature, following out of the first decree, that man will always do (although freely) that which appears best. (AG, 46)

Although it is possible to see Leibniz as angling for some distinction between an individual's particular features and what belongs to it only in virtue of the laws of its universe, Leibniz does not actually *say* in this passage that there is something left of Caesar when the laws are removed. And, in any case, there's another reading of this remark which does not have Leibniz unreflectively relying on an unarticulated distinction between Caesar's particular features and what accrues to him through the laws of his universe. In a number of places, Leibniz expresses allegiance to the traditional view that contingent truths involve God's will in a way that necessary truths do not. All that I think Leibniz is doing in this passage is claiming that God's will is involved in Caesar's crossing the Rubicon in a way in which it doesn't figure in a truth like "the area of a circle is πr^2 ."⁴

In a subsequent chapter Adams makes the following intriguing point (pp. 106-107). Leibniz writes on occasion that it is only God's wisdom and goodness that prevents certain awkward things from happening, such as the premature annihilation of a substance, or the creation of a substance without the creation of all

the substances expressed by that substance. These positions, Adams points out, imply that Leibniz is willing to allow at some level that Caesar's predicates might have been different from the ones he actually has. If God had lost patience with the world, Caesar might never have acquired the predicate "was assassinated by Brutus."

I would simply note here that the alternative predicates that Leibniz is willing to countenance do not involve the sort of abstraction of Caesar's body from the laws of physics that I find problematic. It is one thing to stand outside of the physics of a world and imagine the entire world's ceasing to exist; it is another thing to contemplate a change within the course of the physical world or within the course of Caesar's psychology. But we have to perform these more difficult feats of abstraction if we are to see why, as Leibniz puts it, "[Caesar] has resolved to cross the Rubicon *rather than* stop there, and why he has won *rather than* lost the day at Pharsalus" (DM, § 13; my emphasis). After all, it's not merely contingent that he was not annihilated thirty seconds before he would have crossed the river—it's also contingent that he didn't "stop there."

Let's turn to the third attempt to reconcile contingency and containment. Here the idea is that although the concept of Rubicon crossing is contained in Caesar's concept, it would not be contradictory (or contradictory in itself) for Caesar *not* to cross the Rubicon, because that containment cannot be demonstrated in a finite number of steps, but requires an infinite analysis.

Adams regards this use of infinite analysis as problematic. One difficulty, which he calls the "lucky proof,"⁵ runs as follows: "Even if infinitely many properties and events are contained in the complete concept of Peter, at least one of them will be proved in the first step of any analysis. Why couldn't it be [a contingent truth such as] Peter's denial [of Christ]?" (p. 32). A further problem is that, given that complete concepts exceed our grasp, we cannot even begin an infinite resolution: "[W]e may wonder how we can even begin an analysis of the individual concept of any person, as Leibniz seems to imply that we can. For such a concept, being complete, is not our concept but God's, and we do not seem to have a definition with which to begin to replace it" (p. 34).

Adams regards the use of infinite analysis in the containment context as more problematic than its use to establish the contingency of the bestness of this world (p. 34). It's not clear to me, however, why these same problems don't carry over. After all, it is not easier for us to grasp the complete concept of this world than it would be for us to grasp the complete concept of an individual in this world. It might appear that the lucky proof problem is less compelling in the case of the bestness of

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the world, because so many comparisons must be made in order to establish that this world is best. This seems to me illusory. Even if we grant that infinitely many pairwise comparisons of worlds must be made in order to establish the bestness of this world, as soon as some world *loses*, it is thereby shown *not* to exist. If we can establish in a finite number of steps a comparison showing some world to be second-rate, then we can demonstrate its failure to exist. The nonexistence of that world, which ought to be contingent, would then come out necessary under Leibniz's theory.

At any rate, I want to defend the infinite analysis approach to reconciling containment with contingency. Let me begin with a superficial textual point. Leibniz doesn't explicitly assert the first two responses we've canvassed as solutions to the problem of reconciling contingency with containment. They are at most implied by certain remarks he does make. He does not come out and say, for example, that the heart of the distinction between contingent truths and necessary truths involving Caesar lies in a crucial distinction between his particular features and what belongs to him only in virtue of the laws of his universe. In marked contrast, Leibniz does explicitly assert that infinite analysis is the solution to the problem of reconciling containment with contingency. My favorite text here is the following:

And so I think that I have disentangled a secret which had me perplexed for a long time; for I did not understand how a predicate could be in a subject, and yet the proposition would not be a necessary one. But the knowledge of geometry and the analysis of the infinite lit this light in me, so that I might understand that notions too can be resolved to infinity.⁶

Nothing comparable exists for the other two approaches.

Now, this textual cheap shot would not count for much if we could not respond to Adams's concerns. Without some sense of how Leibniz might forestall the lucky proof problem or, more basically, without some sense of what infinite analyses look like given that they are grounded in concepts that only God can have, it will seem rather like Leibniz is whistling in the dark.

Well, can we understand our concepts of Caesar in such a way as to make them continuous with the complete concept of Caesar that only God possesses? Let's begin from God's end. What does God have that we do not have and cannot have? Well, one thing that God has is a complete physical blueprint of Caesar's body. We cannot possess such a thing, because Caesar's body contains parts within parts *ad infinitum*. Indeed, implicit within this structure is the entire physics of Caesar's universe. Someone with sufficiently sensitive equipment could read off of the fine

structure of Caesar's body the goings on of other bodies in arbitrarily remote places and times in the universe.

Although we cannot possess the divine blueprint for Caesar's body, it is not as if our cognition of Caesar is utterly discontinuous with it. Our perceptions enable us to form approximate conceptions of the master concept. For example, one of Caesar's contemporaries could form the concept *the complex system of matter in motion that corresponds, under preestablished harmony, to such and such perceptions* (i.e. "Caesar" perceptions), and discover that included in this concept was the movement of this system through the system of matter in motion which corresponds to her Rubicon perceptions. We may view this primitive conception of Caesar as a first approximation of the divine concept. As we learn more about Caesar's body (or his psychology), we come to have a more complete concept of Caesar, one that is closer to the divine blueprint.

Thinking of Caesar's concept along these lines yields a particular picture of an infinite analysis. We might think of an infinite analysis as the limit of a series of physical arguments based on our approximate and incomplete concept. That is, we begin with approximate descriptions of the Caesar system of matter in motion and of the Rubicon system, from which it follows that the former system wades through the latter. Since both descriptions are only finitely complex, it is possible to invent more precise, but still approximate, arguments based on more accurate, but still approximate, descriptions of each system. An infinite analysis would be the limit of the infinite series of these approximate arguments.

A virtue of this way of thinking about complete concepts and infinite analysis is that it fits remarkably well with an analogy that Leibniz draws between necessary and contingent truths, on the one hand, and rational and irrational numbers, on the other.⁷ What Leibniz says is that showing the truth "S is P" is like trying to determine, via the Euclidean algorithm, whether two numbers are commensurable. If the truth is necessary, then the algorithm terminates; if it is contingent, the process does not end. On the picture of analysis just presented, the analogy is quite apt: just as an irrational number can be viewed as the limit of an infinite series of rational numbers which better approximate it, so too a contingent truth can be viewed as the limit of an infinite series of finite arguments that approximate it.

A further virtue of understanding complete concepts as physical blueprints and our concepts as finite approximations thereof is that it provides a ready answer to the lucky proof problem. It's a feature of the infinite series of physical arguments, as I'm envisioning them, that nothing is proven with finality at any stage: subsequent discoveries at a greater level of detail may overturn what seemed to be the case

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at an earlier level. If, for example, I were to incorporate more information in my Caesar argument, I might come to the conclusion that the Caesar system didn't cross the Rubicon but rather another very similar system shot in at the last moment, to the great confusion of subsequent historians. That such discoveries await is of course wildly improbable, but the fact that an infinite series of approximate arguments allows for such discoveries means that a truth like "Peter denies Christ" will never be finally established at any finite stage.

The gulf between God's complete concepts and our finite concepts can make the theory of infinite analysis seem like a mysterious *deus ex machina*. We are told that there is a certain type of argument which only God can understand based on concepts which only God can possess; moreover, the existence of these arguments is supposed to explain how "S is P" can be a contingent truth even if the concept of P is contained in the concept of S. My suggestion that we understand God's complete concepts as continuous with our own finite concepts, and view infinite analyses as continuous with the sort of arguments with which we are already familiar, is meant to go some way toward bridging that gulf and dispelling the sense of mystery.

Earlier I registered my sense that infinite analysis is better worked out and less problematic in the containment context than it is in the case of the bestness of this world. Let me try to explain why. The passage in which Leibniz reports that the light was lit, suggests that the doctrine was discovered while he was looking for a reconciliation of containment and contingency. I believe that, having found something that worked tolerably well in that context, Leibniz transferred the theory to the question of the bestness of this world. It seems to me that something was lost in the translation.

Now, if we set aside the containment doctrines, the thing that Leibniz needs to establish with respect to the bestness of this world is not that there *is* some infinite argument to that conclusion, but rather that there is *no* finite demonstration of that conclusion. But how good a job does he do of showing that there is no such demonstration? Well, merely adverting to the infinitely many comparisons implied by the claim that this world is the best—namely, that this world is pairwise better than each other world—is obviously not enough. To think that it is would be like concluding that there is no finite demonstration that one is the least natural number, because that claim implies infinitely many pairwise comparisons.

There's a further worry I have about using infinite analysis to show the bestness of this world. It is difficult to extend the picture of infinite analysis that I offered earlier to this context. I do not deny that one could conjure up a similar structure.

We might compare worlds along different dimensions and view our world as a maximum or limit to which all other, less perfect worlds converge. But this is rather fanciful, and at this point I must confess a certain sympathy with the point that Adams makes about infinite analysis in the containment context: I'm not quite sure how to begin the analysis of the bestness of this world.

To conclude then: I think that the "possible in its own nature" account of contingency is a philosophical failure because the defense doesn't reach any point of controversy between *traditional* necessitarians and nonnecessitarians. Leibniz's theory of infinite analysis seems to me a reasonably promising response to the difficulty of reconciling containment with contingency, but a less satisfactory basis for an argument that the bestness of this world is contingent.

¹Two scholars who have wanted to place weight (but in a different way from Adams) on the distinction between what belongs to an individual in abstraction from the laws of the individual's universe and what belongs to the individual in conjunction with those laws are Hidé Ishiguro in "Contingent Truths and Possible Worlds," orig. pub. *Midwest Studies in Philosophy*, 4 (1979), pp. 357-367, reprinted in R. S. Woolhouse, *Leibniz: Metaphysics and Philosophy of Science*, pp. 64-76 (see esp. pp. 70-71), and in *Leibniz's Philosophy of Logic and Language* (Cambridge: Cambridge University Press, 2nd ed. 1989), pp. 172-173, and Louis E. Loeb in *From Descartes to Hume* (Ithaca: Cornell University Press, 1981), pp. 283-291 (Loeb believes Leibniz's position "is significantly developed and modified in the Arnauld correspondence," p. 285). It seems to me that neither of these scholars explores the coherence of this abstraction.

²Adams offers another passage in support of a distinction between what is particular to Caesar and what belongs to him only by virtue of the laws of his universe:

Thus all human events could not fail to occur as they have actually occurred, given that the choice of Adam was made; but not so much because of the individual concept of Adam, although that concept contains them, but because of the designs of God, which also enter into that individual concept of Adam, and which determine that of that whole universe. (LA 51)

But it's not clear to me that Leibniz is doing anything more here than attempting to ward off the misimpression (which might be suggested by the way in which his correspondence with Arnauld developed) that God somehow was concerned only with or primarily with Adam and let everything else fall out of that decision. In other words, the point of the "not so much because" does not concern the internal structure

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of Adam's concept, but rather God's reasons for preferring this world: even though the rest of the universe is settled "when" Adam is chosen, this does not mean that God was paying special attention to Adam, and those features of the universe that he especially well expresses, at the expense of those features of the universe expressed by the other substances "when" he decides to make this world.

³Gerhardt has *suppose*, which Adams translates as "presupposes." To my ear, this has the subtle effect of increasing the distance between the decreed sequence of things and the concept, although Adams himself does not place the sequence outside of an individual's complete concept.

⁴I find Adams's statement on p. 29 that "Leibniz thinks of everything in the world as determined ultimately by the divine nature, and particularly by the relations of concepts in God's intellect" misleading in view of Leibniz's repeated remarks that an individual's concept involves the divine will, or more precisely, a possible divine decree. See § 1 of my "Leibniz of Infinite Resolution and Intra-mundane Contingency, Part Two: Necessity, Contingency, and the Divine Faculties," *Studia Leibnitiana*, 27 (1995): 1-30.

⁵Adams credits William Irvine for this name.

⁶"Necessary and Contingent Truths," in Leibniz, *Philosophical Writings*, ed. G.H.R. Parkinson, trans. G.H.R. Parkinson and Mary Morris (London: J M Dent & Sons, 1973), p. 97

⁷See, for example, "Necessary and Contingent Truths," p. 97.

**Review of Robert Merrihew Adams's *Leibniz: Determinist, Theist, Idealist*
by Massimo Mugnai, University of Florence**

In the last ten years, studies on Leibniz have greatly improved, and this progress is largely due to American authors. The essays by Benson Mates¹ and Robert Sleight² have assumed the role of reference books, and the same will surely happen with this work by Robert Adams. Once upon a time, the history of philosophy was considered something “typically European”—or, better said, it was so regarded by “continental philosophers”—but now things have changed.

Adams' book is an extraordinary achievement: it presents in full detail and discusses at length many basic aspects of Leibniz philosophy and metaphysics. The main theses are so well argued that there are only a few points where I disagree. In what follows, I limit myself to commenting on three topics: a) the relationship between conceptual and causal connection; b) the problem of contingency; c) the problem of the twofold nature of aggregates. Topics a) and b) have something in common, whereas topic c) has nothing to do with the preceding two. But let me first develop some general remarks concerning Leibniz's attempt to save contingency—an attempt which I consider doomed to fail.

As is well known, a question widely debated by scholastic theologians was how to reconcile God's foreknowledge with the contingency of human events. Given God's omniscience and infallibility, if, for instance, God foresees that Peter the Apostle will sin, it is impossible to assume that things could go otherwise and that Peter does not sin. But this plainly amounts to saying that Peter's sin is necessary - a conclusion which strongly contrasts with the claim that human actions are free and contingent. A solution to this puzzle, which became very popular in scholastic and post-scholastic literature, takes into account a suggestion proposed by Boethius in his *Consolation of Philosophy* and elaborates a distinction (clearly stated by Thomas) in the scope of modal operators.

Boethius' suggestion consists, roughly speaking, in distinguishing God's foresight of a given event from the real causes which determine it. If God foresees that Peter will sin, it is not God's foresight which causes the sin. Boethius illustrates this point with an analogy: if I am at the seaside, watching a ship which is moving from left to right, I can easily anticipate that it will attain a given point nearby and situated on its line of motion. But, clearly, it is not my anticipation which determines that the ship attains this point. We can find the same example, with some minor changes, in Leibniz's *Theodicy*.³

The distinction in the scope of modal operators is explained as follows by Thomas: “First we have to say that there are two different kinds of necessity, a

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necessity following which something is necessary in itself, for example, that God exists ... and a necessity under a given condition, which does not conflict with what is voluntary, and in this sense it is necessary that scandals occur.”⁴ Thomas equates this second necessity with the necessity which “by some authors is called necessity of the consequence.”⁵ Thus, the sentence: “If God foresees that Peter will sin, then necessarily Peter sins”, has to be read: “Necessarily (If God foresees that Peter will sin, then Peter sins)”. And what it states is that Peter’s sin (a contingent fact) necessarily follows from God’s foresight, not that Peter sins necessarily.

All this is old stuff, and Leibniz, in his attempt to justify contingency, makes wide use of it. First, he proposes an interpretation of the complete concept of an individual as a mere result of God’s foresight. The complete concept can be considered as an exhaustive description of the development and behaviour of a given individual, real or possible: it is simply the history of this individual written by an omniscient historiographer—God. Thus, Leibniz states that “concept and foresights” do not make things necessary and that it is absurd to think that “a free action could not be contained in the concept or perfect view that God has of the person to whom it will belong.”⁶ Robert Sleigh dubs this interpretation of the complete concept “innocent” and rightly observes that innocence is lost “when principles affirming a connection between the concept assigned to an individual and various truths about that individual are adopted.”⁷

Second, Leibniz makes a systematic use of the “necessity of the consequence” strategy. Leibniz observes that something is necessary either *through itself* or *on the hypothesis of something else*. It is necessary through itself, if we cannot even understand that it could have been different from how it in fact is, without giving rise to a contradiction *in terminis*. It is necessary by hypothesis if we can understand that it may be different *in itself*, whereas it becomes necessary through the presupposition of some thing or other things external to it. Thus, it was necessary that Judas sin, on the hypothesis that God foresaw it.

Neither the “innocent” interpretation of the complete concept, nor the distinction of the two different types of necessity, however, help Leibniz to give a reasonable account of contingency. Leibniz’s metaphysics suffers from an internal conflict between an ontology of the conceptualist/nominalist type (which emphasizes the primacy of the individual versus abstract properties, concepts and ideas) and a kind of hidden Platonism which gives priority to the complete descriptions of the individuals in God’s understanding. God knows and individuates things (actual and possible) by means of exhaustive descriptions: the complete concepts. Insofar as complete concepts tell the history, from the beginning to the end, of the individuals under them, and insofar as they determine the “identity” of these individuals, any

change in the “smallest” property of a complete concept implies a change in the identity of the corresponding individual. On the other hand, if we look at things from the point of view of the existing individual at a given stage of its development (not from the absolute point of view of the complete concept), it is natural to assume that the different possibilities the individual has of doing or not doing something do not harm its identity. Moreover, Leibniz usually reasons about possibilities without “splitting” this individual into similar individuals in different possible worlds. He thinks of “possibilities” as something “surrounding” concrete individuals. Thus Leibniz states plainly that if Peter the Apostle had not betrayed Christ, then he would not have been Peter—because the property of betraying is included in the complete concept of Peter,⁸ and at the same time he attempts to maintain that Peter-the-betrayer-of-Christ, before betraying, had the *real possibility* of not betraying.

Consider, for example, what Leibniz says about freedom. If an agent *a* performs an action *B*, this agent acts freely only if he or she has the possibility of doing otherwise, and if this possibility is a possibility for the very same individual. There is no textual evidence for ascribing to Leibniz the idea that, if *a* performs *B* in our world, *a* has the possibility of doing *C* instead of *B* only if an individual similar to *a* performs *C* in a possible world different from ours. Nor—as Adams points out—can Leibniz admit that this interpretation of possibility be applied to God and to the possible choices he can make. Thus, the only choice Leibniz has is that of attempting to undermine the importance of the complete concept by reducing it to a product of God’s foresight. Considered from this point of view, the complete concept is a piece of historical description which can neither alter nor predetermine the described events and facts. As we read in the *Discourse on Metaphysics*, as well as in other texts, the complete concept of a given individual contains the description of the acts of that individual *insofar as they are free and contingent*.⁹ But this implies that the individual has a kind of priority (ontological or temporal) over the corresponding complete concept, whereas Leibniz clearly states that complete concepts are *models* for the possible individuals and that the individuals are concrete instantiations of the models. Therefore a conflict arises—internal to Leibniz’s metaphysics—between a *descriptive* and a *normative* function of the complete concept, a conflict which parallels the dichotomy mentioned above between the absolute point of view of God and that of human beings.

Another aspect of the same conflict is related to Leibniz’s attempt to distinguish the conceptual connection among parts of the complete concept, on one hand, and the causal connection among different states of the corresponding individual “in

flesh and blood,” on the other. It is precisely here that I find my first reason for disagreement with Adams’ interpretation.

(a) *The conceptual and the causal connection.* Adams argues (with C.D. Broad) that “in the concrete actual substance” corresponding to a given complete concept, Leibniz introduces an “ontological correlate” of the concept of the substance: the “substantial form”, which gives rise to a “coalescence of conceptual and causal connection” (Adams, 78). I think that Adams is right on this point: I simply disagree with him, insofar as he assumes that the “coalescence” is something consciously upheld by Leibniz.

Leibniz bases his criticism of Spinoza’s doctrines on a sharp distinction between conceptual (or logical) and causal connection. Commenting on the fourth axiom of the *Ethics*, he observes that it is false to claim that, if something is a necessary condition for conceiving something else, then the first is *cause* of the second.¹⁰ Thus, one cannot conceive the circle without conceiving the center, but from this it does not follow that the center is the cause of the circle. The distinction between these two types of connections is grounded on the aforementioned distinction between the *complete concept* and the *individual* associated with it. However, in the complete concept—as Adams observes (Adams, 86 - 91)—there is an exhaustive description of the causes which determine the actions of the corresponding individual. And every description of causes is connected with the description of some consequences which are supposed to be determined by those causes. What Adams calls “coalescence” of the logical with the causal relation is based on two presuppositions: a) that the causes described in the complete concept are instantiated in the real world and “embodied” in the individual; b) that the link between causes and consequences in the world (in the corresponding individual) is the same that subsists between premises and conclusion in a deductive argument. Leibniz is well aware that the distinction between logical and causal connection is important for maintaining the autonomy and independence of the individual versus the complete concept which corresponds to it. But I think that he is forced to interpret as logical the causal connection between different states of the same individual, because of the prevalent role that the theory of the complete concept has in his metaphysics.

Thus, I think, with Adams, that the “substantial form” is responsible for the “coalescence of logical and causal connection”: the “substantial form” is a kind of intermediary between the complete concept and the individual corresponding to that concept, and puts into effect in the “living” individual the “program” described by the complete concept. In this sense, it is the *normative* aspect of the complete

concept which leads to the “coalescence.” But this happens at the expense of the *descriptive* aspect, which, as we have seen, Leibniz attempts to present as the dominant one.

(b) *The problem of contingency.* As Adams points out, Leibniz’s main argument in defence of contingency is based on the idea that something may be *possible in itself*, but *necessary on the hypothesis of something else*. If Caesar crosses the Rubicon, then the act of crossing necessarily follows from Caesar’s complete concept, under the hypothesis of certain decrees that God has made concerning the world and which are contained in Caesar’s complete concept; yet, if such decrees are not presupposed, that Caesar does not cross the Rubicon remains possible in itself. Hence the “possible-in-itself” strategy implies that the same name—“Caesar” in our example—may be used for naming both a given individual (Caesar) by means of the complete concept corresponding to it *and* that part of the complete concept which remains once God’s decrees are removed from it. But the problem arises: how can a proper name be applied to refer to *a part* of an individual (of a complete concept)? Adams tries to give an answer to this problem, attributing to Leibniz the distinction between essence in the narrow sense and the complete concept of an individual substance. The essence in the narrow sense, “contains information about such things as the perceptions the substance has, and perhaps the geometrical configurations and motions expressed by those perceptions, and about the substance’s powers and tendencies to produce perceptions in itself—but not about other substances”; the complete concept follows “from the substance’s essence in the narrower sense, but only in combination with truths that follow from the essences of other substances and their interrelations” (Adams, 13 - 14). The set of all essences in the narrow sense, of the substances that could exist in a given world, gives rise to the “basic concept” of this world. From the basic concepts of possible worlds is excluded the choice of God among possible worlds (Adams, 15).

Therefore, if Caesar crosses the Rubicon in the actual world, it is still possible in itself - i. e. in respect to the essence of Caesar in the narrow sense—that Caesar could have not crossed the Rubicon. I think that Adams is absolutely right when he states that the “possible in itself” strategy is an essential part of “the innermost and surest bastion of Leibniz’s defense against the denial of contingency” (Adams, 22)—a strategy which Leibniz still adopts in the *Theodicy*. But it seems to me that the idea of an “essence in the narrow sense” is not genuinely Leibnizian. First of all, Leibniz does not mention explicitly this kind of essence; second, Leibniz’s use of the word *essence* (lat.: *essentia*) is limited to designating either the complete concept of an individual or some essential property in the traditional sense, like rationality in

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respect to a human being or humanity in respect to Socrates. Nor does Leibniz explicitly make reference to a “basic concept of a world.”

I agree that both concepts—that of a narrower essence and that of a basic world—seem to fill a gap in Leibniz’s metaphysics. In fact, when Leibniz writes that if an agent *a* of the actual world performs the action *B*, then it remains possible in itself—i. e. independent of God’s decrees—that *a* act in a different way, he seems to admit a more basic concept obtained by subtracting from the complete concept the decrees of God and all the external circumstances which compel *a* to do *B*. That Leibniz uses proper names for denoting things other than complete concepts and individual substances is a matter of fact, but this does not imply that one of these “things” must be the “essence in the narrow sense.” On the contrary, there is a very interesting text, written about 1695 as a short comment to Twisse’s *Scientia media*,¹¹ which seems to support the claim that Leibniz does not recognize this kind of “essences.” I quote this text in Benson Mates’ translation¹²: “... when I ask what would have happened if Peter had not denied Christ, it is asked what would have happened if Peter had not been Peter, for denying is contained in the complete notion of Peter. But it is permissible that by the name Peter should be understood what is involved in those attributes of Peter from which the denial does not follow, while at the same time there must be subtracted from the universe everything from which it does follow; and then sometimes it can happen that the decision follows per se from the remaining things posited in the universe, but sometimes it will not follow unless there is added a new divine decree *ex ratione optimitatis*.” Here Leibniz clearly authorizes the use of the name “Peter” for denoting Peter’s complete concept *minus* the set of properties (internal to the concept) from which the act of denying follows. What this passage seems reasonably to assume is that, the complete concept being an infinite set of properties, if some subset—even infinite, but sufficiently “small”—of this set is subtracted from it, then the identity of the concept is, in a certain sense, preserved. As is revealed by the expression “it is permissible” (lat.: *excusabile*) in the text, Leibniz is perfectly aware that this identity is weaker than that secured by the complete concept in all its entirety. But once this way of denoting is permitted, then it seems to me that there is no need for the “essence in the narrow sense” to express that something contrary to the facts is possible in itself.

Surely in Peter’s complete concept, considered without all the properties from which the denial follows, some decrees of God are comprised. And if we subtract from this concept all the “premises,” as it were, from which the denial follows, associating the name “Peter” with what remains, then the sentence “it was possible in itself (i. e. independent from God’s decrees) that Peter did not deny Christ”

becomes perfectly intelligible. Of course, once the “essence in the narrow sense” is recognized as non-Leibnizian, the same happens with the idea of a “basic concept of a world” in Adams’ sense.

Concerning the “main” solution to the problem of contingency, I think that we have no grounds for rejecting, or even diminishing the importance of, Leibniz’s explicit claim that it lies in infinite analysis. Maybe this solution is not fully consistent or does not satisfactorily meet the standards of our logical and philosophical requirements, but we cannot overlook that, after 1686, it was considered by Leibniz “the” solution to the problem. And it seems to me that—from Leibniz’s point of view—the infinite analysis solution has some important virtues which I will mention briefly here.

Leibniz writes that the property of crossing the Rubicon follows from God’s free decrees and from the complete concept of Caesar, but that it is impossible to demonstrate (in a finite number of steps) that very fact. Hence, no logical contradiction follows from maintaining the validity of God’s decrees and affirming that Caesar does not cross the Rubicon. (As Leibniz explicitly says, not even God is able to demonstrate that in that case a contradiction arises.) As is easy to see, the infinite analysis solution permits the application of the “possible in itself” strategy, without any recourse to the proviso that the decrees of God have to be removed from the complete concept. And, what is more important, this solution weakens the *hypothetical necessity*. As we read in the *Theodicy*, the “necessity of this kind, which does not destroy the possibility of the contrary, has the name by analogy only.”¹³ Here Leibniz clearly states that the necessity operator involved in sentences like: “Necessarily (if God promulgated the decrees $D_1 \dots D_n$, then Caesar crosses the Rubicon)” does not refer to a necessity of the geometrical or metaphysical type. (Incidentally, the idea that only the metaphysical or absolute necessity excludes contingency is an old one, which can be traced back to Thomas: “...one cannot conclude that there is absolute necessity in created things, which is the only kind of necessity which excludes contingency.”¹⁴)

Even though the infinite analysis is considered by Leibniz the true solution to the problem of contingency, it is conspicuously absent from his texts addressed to an audience wider than that of the restricted circle of scholars. In my opinion this is justified by the fact that—as Leibniz writes—a perfect understanding of this solution requires some previous knowledge of mathematics. As a matter of fact, Leibniz mentions this solution only once in the *Theodicy*—in an *Appendix* to the main text.¹⁵ But I think that this is sufficient to show that he considered the infinite analysis solution not as an alternative, but as an integration to the solution offered

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by *hypothetical necessity*.

(c) *The twofold nature of the aggregates*. As a concluding remark, let me say something about the problem of corporeal aggregates. First of all, chapters 9 to 11 of Part III (Adams, 217 - 341) are of extraordinary importance for anyone interested in comparing Leibniz's philosophical views with those of Kant. Even though the comparison is not made explicit by the author, the reading of these chapters is very rewarding for understanding similarities and differences between Leibniz's and Kant's theory of knowledge.

One of the most relevant achievements of this part (and of the entire book) is surely the reconstruction of Leibniz's theory of phenomena. Adams rightly emphasizes that, for Leibniz, phenomena do not arise by means of a simple juxtaposition of perceptions, but that they are complex constructions of the mind. Phenomena are the objects of our scientific knowledge, and understanding contributes in an essential way to their construction. What Adams says about this part of Leibniz's philosophy sounds very convincing; I wonder, however, why he did not make use of one of the most important documents in which Leibniz discusses at length and in a clear way his theory of knowledge—I mean the letter to the Queen Sophie Charlotte *On What Is Independent of Sense and of Matter* (1702).¹⁶ Maybe this letter has the misfortune of being written for a queen, and consequently of being considered a text in which Leibniz attempts to popularize his ideas; but if such is the case, then it is easy to show that all this is mistaken. In fact, the letter shows how important the faculty of *imagination* is for Leibniz in the construction of phenomena. *Imagination* is something intermediary between sense-data (from the external senses) and concepts or ideas; it gives a first interpretation of the sense-data and works out the spatial figures of the objects perceived. In Leibniz's theory of knowledge, *imagination* plays the role that in the old philosophical tradition was played by *common sense*: it compares the information given by the external senses and "abstracts" the concepts of qualities which are perceived by two or more senses. The concepts of the *common sense*, as Leibniz observes, "are clear and distinct" and are "the objects of the *mathematical sciences*, namely, arithmetic and geometry."¹⁷ We can give a mathematical interpretation of physical phenomena, and in general we may apply mathematics to "reality," only because phenomena and reality are construed by means of imagination. If the objects around us have forms which approximately remind us of the figures of Euclidean geometry, this is due to the fact that imagination first attributed such forms to the objects. If we perceive the boundary of a given object as a continuous straight line, this is simply the product of the activity of our imagination, which represents as continuous and straight what

in fact is a complex aggregate of contiguous figures of different sizes and shapes.

Because we perceive the real world through the “spectacles” imposed by *imagination*, we cannot attain anything, in our experience, lacking in figure or in movement or in any other property worked out by the imagination. Thus, if we try to arrive at the last components of reality, we will never meet *monads*, but phenomena or “bits” of phenomena. For attaining monads, we have to leave the phenomenal world, construed by imagination *and* understanding, and rely upon the understanding only. As Leibniz points out in a letter to Des Bosses, monads “are not really ingredients but merely requisites for matter”:¹⁸ they contribute in an essential way to the production of the phenomenal world, but they are not “internal” to it.

It seems to me that the letter to the Queen Sophie Charlotte with its emphasis on the distinction between what pertains to senses and to imagination on the one hand, and what belongs to the understanding on the other, sheds some light on the problem of the nature of corporeal aggregates, which Adams discusses at length in part III of his book. As is well known, the problem arises from the fact that Leibniz states that real bodies are *phenomena* and, at the same time, aggregates of substances or monads. Some authors have remarked that, in such a case, we are dealing with two diverging explanations: if bodies are phenomena, then they are constructed by the knowing subject and are “mind-dependent”; if they are aggregates of monads, they are something real, independent of the subject and the mind. On this point I agree with Adams’ general conclusion that “we find in Leibniz not two competing analyses of the reality of corporeal phenomena, but one analysis in two or three layers” (Adams, 261). And I agree, too, with the following claim: “Phenomena are real, in a weak sense, if and only if they fit into a single scientifically adequate system of harmonious phenomena of all perceivers. Those phenomena, and only those, that are real in this weaker sense are also real in a fuller sense to the extent that there exist real monads that are appropriately expressed by organic bodies belonging to the system of phenomena that is at least weakly real” (*Ibidem*). My disagreement with Adams is only a question of emphasis: if his conclusions are true, it is not necessary to speculate about what determines the aggregation of monads which gives rise to a corporeal phenomenon. Because the realm of monads and that of phenomena belong to two different ontological levels, we can speak of “aggregation” in reference to monads in a *metaphorical* sense only. As Leibniz clearly states: “... to say that they (monads) are crowded together in a point or disseminated in space is to use certain fictions of our mind when we seek to visualize freely what can only be understood.”¹⁹ The solution proposed by Adams concerning the

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principle of aggregation is that “the aggregation of substances into bodies depends on the positions of the substances” (Adams, 250); and because the spatial position of the corporeal substance coincides with the spatial position of its organic body, “the grouping of substances into aggregates depends on the spatial appearance of the bodies” (Adams, 251). Clearly this account of the principle of aggregation is internal to the realm of phenomena: it refers to spatial appearances, and hence to the faculty of imagination; it cannot be assumed as an explanation of what happens at the level of monads. Monads are beyond imagination, but we are forced, in speaking of them, to use a vocabulary gathered from experience and hence infected by the imagination. As Richard T. W. Arthur emphasizes in a series of very interesting papers,²⁰ monads are not the last points at which we arrive by means of a virtually infinite process of the division of matter: monads *are not the components* of reality, in the same sense in which a brick is a component of a house. Monads maintain a strong analogy with the Kantian “thing in itself”, and if we consider Leibniz’s philosophy from the point of view of this analogy, there is no wonder that we are confronted with a conflict (the same as in Kant’s case) between phenomenalism and realism.

Insofar as Leibniz believes in a world of monads existing independently of the knowing subject, he is a realist; but insofar as he thinks that such a world is not accessible to us and that what we call “reality” is simply a coherent texture of appearances, he is a phenomenalist. These two ontological attitudes, however, do not coexist in Leibniz’s philosophy as two unconnected parts of a heterogeneous whole: the world of phenomena *arises* with the contribution of the mind *and* of monads. It is true that Leibniz claims that the world of phenomena would arise even if only a monad (the perceiving subject) and God existed. But I think that this is considered by Leibniz a contrary-to-fact hypothesis—as something to which he appeals in his attempt to draw a contrast with skepticism.

¹Benson Mates, *The Philosophy of Leibniz: Metaphysics and Language*, New York, Oxford University Press, 1986.

²Robert C. Sleigh Jr., *Leibniz and Arnauld: A Commentary on their Correspondence*, New Haven, Conn., Yale University Press, 1990.

³Manlii Severini Boethii, *De consolatione philosophiae*, Book V, 4, 10 - 11. For Leibniz’s text, cf. *Essays of Theodicy*, Ch. 30 - 31.

⁴Thomas, *In 4 Sententiarum*, Book 4, ds 38, q. 2, ar 2.a

⁵Thomas, *Summa contra Gentiles*, Book 1, cp. 67, n 10.

⁶G 2, p. 17

⁷Robert C. Sleigh Jr., *Leibniz and Arnauld*, p. 49

⁸Cf. Grua, p. 358

⁹Cf. G 4, p. 455

¹⁰G 1, p. 147

¹¹Grua, p. 358

¹²B. Mates, *The Philosophy of Leibniz*, p. 140, n. 9

¹³G 6, p. 386

¹⁴Thomas, *Summa contra gentiles*, book 1, chapt. 86, n. 5

¹⁵G 6, p. 414

¹⁶G 6, pp. 499 - 508

¹⁷G 6, p. 501

¹⁸G 2, p. 451 (transl. Loemker, p. 604)

¹⁹G 2, pp. 450 - 51 (transl. Loemker, p. 604)

²⁰Cf. for instance: Richard T. W. Arthur, "Russell's Conundrum: on the Relation of Leibniz's Monads to the Continuum," in J. R. Brown and J. Mittelstrass (eds.) *An Intimate Relation*, Kluwer Academic Press, 1989, pp. 171 - 201.

Review of Robert Merrihew Adams's *Leibniz: Determinist, Theist, Idealist
by Daniel Garber, University of Chicago**

Robert Merrihew Adams' new book, *Leibniz: Determinist, Theist, Idealist*,¹ is an extraordinary accomplishment. I am enormously impressed by the depth of Adams' scholarship, by his encyclopedic knowledge of Leibniz's philosophy, by the subtlety of his interpretations, and the sure eye he has for unraveling a philosophical argument. The fruit of many years of reading and careful reflection, it combines originality and imagination with a knowledge of the texts and manuscripts that is astonishing. It is a classic which will be read and discussed for many years to come.

But the book is an especial pleasure for me. A few years ago, a student of mine told me about a lecture on Leibniz he had attended at another university. He reported that the lecturer, Robert Adams, began by giving a summary of a rather bold and foolhardy reading of Leibniz that I had advanced, an argument for a radical discontinuity in Leibniz's thought between his middle years and his late with regard to the notion of body and substance. I was very eager to hear the rest, of course. He continued: "Then," Adams said, "I will show Garber's view to be completely in error." I was not in the least devastated. Indeed, I was greatly honored that a scholar whom I respected as much as I do Adams found my views significant enough to refute.

I am still pleased to find refutations of my work scattered throughout part III, the "idealism" section of the new book. But even though Adams' depth and erudition overwhelms my own original article, I still find that there are elements of my original case that are still worth defending. Not everything, by any means. Despite my own deep-seated prejudices, Adams has convinced me to give up an important element of my own earlier view. But I find that in refuting my own exaggerated distinction between Leibniz's middle and late metaphysics, Adams has overemphasized the continuities in Leibniz's position.

1. Garber and Leibniz: The Middle Years

Before discussing Adams' views in detail, let me begin with a brief summary of the views of mine against which Adams is reacting. The offending paper is called

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“Leibniz and the Foundations of Physics: the Middle Years.”² In that paper I attempted to argue for a real difference between Leibniz’s thought in the 1680s and 1690s or so (up to 1703 or 1704 perhaps), and his later thought. What concerned me there was Leibniz’s view of the physical world. In the early 1980s I had been working on Leibniz’s physical writings, trying to figure out how they fit into their historical context. What struck me as extremely interesting at the time (and now as well) was the fact that in these writings, there seemed to be little hint of the Leibniz so familiar to those who had learned their Leibniz in philosophy class, the idealistic Leibniz of the “Monadology.” It struck me as an interesting project to try to connect the two Leibnizs, and figure out where exactly the bodies physicists treat figure in his idealistic metaphysics, something about which there was relatively little literature at the time. (One of the few discussions was an excellent essay on Leibniz’s phenomenalism by Adams, which appears in revised form in the book.) I went back to a key text that involves both Leibniz’s metaphysics and aspects of his physics, the Correspondence with Arnauld. Reading carefully with this question in mind, I was surprised to discover something quite different from anything I had seen there before, when reading with different interests. At the center of the discussion was the corporeal substance, something understood not on the analogy of the Cartesian soul (unlike the later monads), but something more like a living animal, a soul connected with a body to form a genuine individual. Once I saw this in the Correspondence with Arnauld, I started seeing the same thing in many, many other places, from the early 1680s to the early years of the 1700s. Furthermore, the closer I looked, the harder it became to find traces of the monadological idealism that I was taught to read there.

My essay, “Leibniz and the Foundations of Physics” was an attempt to formulate this reading in more detail. The view I attributed to the middle Leibniz goes something like this. Let me begin with an argument from the Correspondence with Arnauld that Adams and I both acknowledge is fundamental:

I believe that *where there are only entities through aggregation, there will not even be real entities*; for every entity through aggregation presupposes entities endowed with a true unity.... I do not grant that there are only aggregates of substances. If there are aggregates of substances, there must also be genuine substances from which all the aggregates result. One must necessarily arrive either at mathematical points from which certain authors make up extension, or at Epicurus’s and M. Cordemoy’s atoms (which you, like me, dismiss), or else one must acknowledge that no reality can be found in bodies, or finally one must

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recognize certain substances in them that possess a true unity. [G II 96 (AG, p. 85), quoted in “Middle Years”, p. 31, Adams, p. 336]

Leibniz uses this argument to establish that the reality of bodies presupposes the reality of substances, genuine unities whose existence grounds the reality of bodies. Now, Leibniz uses a similar argument in the “Monadology” to introduce his monads:

The monad, which we shall discuss here, is nothing but a simple substance that enters into composites—simple, that is, without parts. And there must be simple substances, since there are composites; for the composite is nothing more than a collection, or *aggregate*, of simples. But where there are no parts, neither extension, nor shape, nor divisibility is possible. These monads are the true atoms of nature and, in brief, the elements of things. [Mon. § 1-3]

However, the substances to which this argument leads us in the Correspondence with Arnauld seem quite different. In the Correspondence with Arnauld, the focus is not on mind-like monads, but on corporeal substances, entities understood on the analogy of animals, not souls, creatures with both souls and bodies. Leibniz writes there:

Every part of matter is actually divided into other parts as different as the diamonds [of the Grand Duke and the Grand Mogul]; and since it continues endlessly in this way, *one will never arrive at a thing of which it may be said: ‘Here really is an entity,’ except when one finds animate machines whose soul or substantial form creates substantial unity independent of the external union of contiguity.* And if there are none, it follows that apart from man there is apparently nothing substantial in the visible world. [G II 77 (AG, p. 80)]

Though unified and constituting a genuine individual substance, each of these ‘animate machines’ is, in turn, made up of smaller parts. Leibniz writes about the human being:

...man...is an entity endowed with a genuine unity conferred on him by his soul, notwithstanding the fact that the mass of his body is divided into organs, vessels, humors, spirits, and that the parts are undoubtedly full of an infinite number of other corporeal substances endowed with their own entelechies. [G II 120]

As this passage implies, these parts are themselves corporeal substances, each of which has its own soul and its own body. What is it that unites the soul to the body, and makes it a genuine substance? The answer seems to be the hypothesis of concomitance, or, as Leibniz was later to call it, the hypothesis of pre-established harmony. When introduced in §33 of the *Discourse on Metaphysics*, Leibniz calls the doctrine “the unexpected illumination of this great mystery of the union of the

soul and the body.” There is every reason to believe that this was meant to hold for animate substances in general.

As Leibniz explained his conception of corporeal substance to Arnauld, there was a definite scholastic tinge to the discussion. These corporeal substances were conceived of as genuine Aristotelian substances, with the form being the soul, and the matter being the body. (Just how to understand the notion of matter at issue here will be a point of contention later.) These animate substances are found everywhere in nature, Leibniz holds. Writing again in the Correspondence with Arnauld, Leibniz notes:

I am very far removed from the opinion which states that animate bodies are only a small part of the others. For I believe rather that everything is full of animate bodies, and to my mind, there are incomparably more souls than there are atoms for M. Cordemoy, who makes a finite number of them, whereas I maintain that the number of souls or at least forms is quite infinite, and that since matter is endlessly divisible, one cannot fix on a part so small that there are no animate bodies within, or at least bodies endowed with a basic entelechy or (if you permit one to use the word ‘life’ so generally) with a vital principle that is to say corporeal substances, about which it may be said in general of them all that they are living. [G II 118]

In “Leibniz and the Foundations” I summarized the view I found in the Correspondence with Arnauld as follows:

In this period ... we find, I think, not a world composed of souls alone, but a world whose principal inhabitants are corporeal substances understood on an Aristotelian model as unities of form and matter, organisms of a rudimentary sort, big bugs which contain smaller bugs, which contain smaller bugs still, and all the way down. [“Middle Years”, p. 29]

Once alerted to this seemingly different picture, I found it everywhere I looked in Leibniz’s writings in what I had dubbed Leibniz’s middle years. I want to emphasize that I did not claim that it was found absolutely everywhere; there were serious strains that looked a lot like monadological idealism to me in those same years, something that gave me real pause. But this other view was really there too, and quite prominent.

However, it turned out to be rather tricky business to specify how exactly the view in the middle years differed from the later view of the “Monadology” and other writings from the later years. One cannot use the bug-in-bug view to differentiate the middle years from the later years; though it makes a striking appearance in the Correspondence with Arnauld, the pan-animism (if you can dub it that) is something

that follows Leibniz through all of his writings, and makes an appearance, though brief, even in the “Monadology”. But it still struck me that something different was going on in the middle writings, and that there was a significant change somewhere around 1703 or 1704. After much gnashing of teeth and deep reflection, I finally arrived at the following formulation:

Leibniz’s later metaphysics involves two significant differences with respect to the metaphysics of the CA [i.e., Correspondence with Arnauld]. In the CA, I have argued, Leibniz recognizes two distinct and genuinely different varieties of substance; there are minds, souls, forms, entelechies, immaterial substances understood on analogy with the immaterial “self” we each find within, and corporeal substances, forms or souls united to bodies, and understood on the model of living things. One can say, in fact, that in the CA, at least, Leibniz’s main interest is in the latter, the animate and corporeal unities that ground the reality of the world of bodies; it is the corporeal substances, and not their forms or souls that may be considered “the true atoms of nature,” to use Leibniz’s later phrase. The position is significantly different in Leibniz’s later writings. There the clear emphasis is on the simple substances, the monads. There are complex collections of monads which constitute living things, to be sure. But Leibniz is no longer certain that they are genuine substances, and it no longer seems to be a central part of his doctrine that they must be substances and that such corporeal substances must ground the reality of the bodies of everyday experience.... A second difference involves the notion of matter.... In the period of the CA and the DM [i.e., Discourse on Metaphysics], Leibniz seems to recognize the existence of the Scholastics’ primary matter, a constituent of corporeal substance distinct from the form, that with the form goes to constitute the corporeal substance. But in the later view, only the forms remain: everything there is is mental in nature, and everything that there is is built up out of these minds, these monads, these “true atoms of nature”. Consequently, in the later view, even the “matter” associated with a form must be reinterpreted mentalistically. [“Middle Years”, pp. 63-5] That, in any case, is what I argued then.

2. Adams on the Attack

But Adams disagrees. He writes:

How are bodies constructed out of simple substances and their properties? ...Many of Leibniz’s best interpreters have seen [in Leibniz’s writings] irreconcilable theses, for which they have tried to account in terms of change of mind or

one or another form of permanent tension. What I propose, by contrast, is a unitary interpretation, a metaphysical scheme to which, in its essentials, I believe Leibniz adhered throughout the last thirty years of his life." [Adams, p. 217]

While I am very flattered to be included among "Leibniz's best interpreters," I am fully aware that this is just a set-up for a powerful argument against the view that I expressed. According to Adams, Leibniz holds that "bodies must be reducible, metaphysically, to simple, perceiving substances and their perceptions and appetites." But, he continues:

I disagree with Garber's interpretation. More precisely, I believe that the Aristotelian elements that are undeniably present in Leibniz's thought are not inconsistent with his monadological theories, but are part of them, and that there is no major change from his middle to his later years on this point. [Adams, p. 308] In particular, in chapters 11 and 12 Adams conducts a vigorous campaign to establish that Leibniz's corporeal substances are fully interpretable in the world of the monadology, and that primary matter is not in any way distinct from the monad, even in the period of the Correspondence with Arnauld, but that it is just the passive aspect of the non-extended and mind-like individual substance, its confused perceptions.

In addition, Adams is somewhat suspicious of the distinction I draw between the middle years, where considerations concerning corporeal substance seem to be quite important to Leibniz, and the later writings where they seem to be somewhat less prominent. I had wanted to argue that this constitutes a real shift in Leibniz's thought. Adams isn't so sure. He writes:

The concept of corporeal or composite substance, while by no means absent from Leibniz's later writings outside of the Des Bosses correspondence, is noticeably less prominent there than in his writings of the 1680s and 1690s about the philosophy of body.... I believe that [this is]...best explained in terms of a distinction between what is autonomous and what is heteronomous in Leibniz's rehabilitation of Scholastic Aristotelian ideas.... I think Leibniz never had a deep personal commitment to the view that there are corporeal substances, one per se. His attempt to find a place for that idea in his philosophy was heteronomous, an accommodation to traditionalist concerns of others, especially Roman Catholics. So when he found that those others did not feel their concerns satisfied by his account of corporeal substance, he had little reason to insist on it. [Adams, pp. 306-7]

For Adams, then, the change in Leibniz's philosophy that I call attention to is simply a consequence of the change in the external demands on his thought; though Adams

doesn't deny that Leibniz tries to find a place in his philosophy for corporeal substance, his view is that this does not represent a genuine commitment to the notion, early or late. In this way, Adams sees Leibniz's basic view, early and late, as a kind of idealism that remains basically unchanged throughout.³

This is where the debate stands. In the remainder of this essay, I would like to discuss Adams' position, and try to figure out what is what. In general, I am convinced by his discussion of primary matter. Though there are still some passages on that that I find puzzling on his reading, I think that he is probably right, and that I was probably wrong on that question.⁴ Which is to say that the earlier view, in which Leibniz emphasizes corporeal substance, is not inconsistent with his later idealism. Which is to say that whatever distinction there might be between his "middle" view and his later view, it is wrong to characterize it in terms of the distinction between an Aristotelian realism and an idealism: idealism prevails throughout. Probably.

On the other hand, despite Adams' careful refutation of my view, I still persist in believing that there is a significant difference between Leibniz's middle years and his later years, though perhaps not exactly the difference I once thought that I saw. I would claim that Adams does not fully appreciate the philosophical centrality of the notion of corporeal substance in his middle years. Though corporeal substances may have been, as Adams claims, fully reducible to non-extended, mind-like individual substances (monads), corporeal substance was, I shall claim, quite central to the metaphysics of the middle years. Leibniz's metaphysics changes, I claim, when the close link between soul and body is called into question, and corporeal substances become a problem for Leibniz's thought, rather than a solution.

3. Corporeal Substance as Foundational

The notion of corporeal substance had an important role to play in Leibniz's philosophy in the 1680s and 1690s, I claim; though ultimately reducible to unextended individual substances, perhaps, the level of corporeal substance nonetheless provided a crucial element in Leibniz's account of the world of extended things, I would argue. This role comes out in an interesting text that neither Adams nor I have discussed in print, Leibniz's reading notes on Gerauld de Cordemoy. The notes were taken in 1685, according to the editors of the *Vorausedition*, and Cordemoy was much on Leibniz's mind while writing the *Correspondence with Arnauld*, as evidenced in the references to him in the above quotations.

First, it will be helpful to make a few remarks about Cordemoy's position. Though

a follower of Descartes in most respects, Cordemoy was an atomist as well, something as puzzling to his contemporaries as it is to us. Basic to Cordemoy's view is a distinction between body or bodies on the one hand, and matter on the other. In his *Six discours sur la distinction et l'union du corps et de l'âme* (1666),⁵ Cordemoy writes:

Bodies are extended substances.... Since each body is only one single substance, it cannot be divided: its shape cannot change, and it is so necessarily continuous, that it excludes every other body. [*Six discours*, pp. 95-6]

Matter, on the other hand, is something quite different:

Matter is an assemblage of bodies. Every body, considered as composing this assemblage, is what one properly calls *a part of matter*.... Since each body cannot be divided, it can't have parts: but since matter is an assemblage of bodies, it can be divided into as many parts as there are bodies....Every mass is a collection of several substances, and not a substance;...it has no extension of its own, but only appears to have it, because every body which composes it, has extension. [*Six discours*, pp. 96-7.]⁶

The kind of indivisibility that Cordemoy has in mind is *physical* indivisibility: his bodies, his extended substances are indivisible in the sense that they cannot be split. They are atoms in the classical sense.

It is obvious how close this is to Leibniz's view in the mid-1680s, in a sense. Extended stuff is an aggregate of substances, corporeal substances, which by virtue of being substances are genuine unities, and genuinely indivisible. But there are crucial differences as well.

Leibniz summarizes Cordemoy's view as follows: "It is true that body is an extended substance, but false that matter is a substance. For each and every substance in itself cannot be divided."⁷ Leibniz's comment on this summary shows his appreciation for Cordemoy's insights: "The excellent gentleman saw the truth confusedly and through a cloud, but could not explain it [*demonstrare*] clearly." (VE, p. 696) On Leibniz's view, Cordemoy has correctly observed that matter is just an aggregate of substances, substances that have true unity. But Leibniz thinks he was mistaken in holding that the unity derives from physical unsplitability. Rather, the unity derives from the soul or entelechy, which unites the substance and makes of an extended machine a genuine individual. Thus Leibniz makes the following remark about Cordemoy:

Indeed, he failed in the fact that he did not recognize that in corporeal substance there is something else besides extension, from which the very notion of substance arises, which extension alone cannot give. This indeed is the power or

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force [*potentia seu virtus*] of acting and being acted upon, in accordance with the widely received axiom that actions pertain to supposita. [VE, p. 696]

This seems to be a reference to the kind of view Leibniz presents in the Correspondence with Arnauld, the view in accordance with which the genuine unities, the corporeal substances that ground the reality of the world are “animate machines whose soul or substantial form creates substantial unity independent of the external union of contiguity,” as he writes there (G II 77 [AG, p. 80]). It should be noted here, that in the comments on Cordemoy, as well as in the later view in the Correspondence with Arnauld, Leibniz isn’t denying that there is a sense in which corporeal substances are extended; his point is simply that they must contain something *besides* extension in order to be genuine substances.

Also interesting is another comment. Cordemoy writes that “[mass] has no extension of its own, but only appears to have it, because every body which composes it has extension.” On this sentence from Cordemoy, Leibniz adds the following comment:

It is notable that first the ordinary Cartesians, who call every extended thing divisible, then the semi-Gassendist Cordemoy, who judges that every substance is indivisible, and truly one, appeal to ideas, perhaps both of which are true, on my view. For if all organic bodies are animated, and all bodies are either organic or collections of organic bodies, then it follows that all bulk [*molis*] is divisible, but that substance itself can neither be divided nor can it be destroyed. [VE, p. 696]

The meaning of this comment is not obvious, and calls for some unraveling. Leibniz, I think, is here comparing a view like the one I outlined above in the Correspondence with Arnauld with the views that he finds in Cordemoy and the Cartesians. Like the Cartesians, Leibniz wants matter to be infinitely divisible. Yet, at the same time, like Cordemoy, he wants matter to be made up of genuine substances that are genuinely unified. These genuinely unified substances are the organic bodies he remarks on in the quotation, organized bodies that are connected with souls. Because they are connected with souls, we can infer, they constitute genuine individuals. But yet, at the same time, insofar as their bodies are made up of smaller parts, smaller organisms (corporeal substances), they can be divided still further.

But this passage also shows us something else very interesting about Leibniz’s position. Leibniz does *not* seem to reject the view of Cordemoy’s that he cites and comments on here, that the extension of a mass derives from the extension of the substances (bodies) that make it up. As I read these notes, Leibniz agrees with Cordemoy that matter must be made up of extended substances, that extension must

have extended parts, but disagrees with Cordemoy only about what makes an extended substance a genuine substance. Like Cordemoy, I think that he *also* wants mass to be made up of extended substances that are, at the same time, genuinely unified and genuinely indivisible. (The precise sense in which Leibniz's corporeal substances are extended is somewhat delicate, and will be discussed below.)

This last point, puzzling though it is, was important to Leibniz. I think that it was evident to Leibniz (at least in the mid-1680s) that extension cannot be made up of non-extended things, like points (cf. G II 96 [AG, p. 85]); extension must be made up of extended parts. But these parts must also be genuine unities, and thus, in a sense indivisible. This Cordemoy got right, in Leibniz's view. What he got wrong was the idea that mere physical unsplitability is enough to make an extended atom a genuine corporeal substance. But, one might ask, how can Leibniz have a metaphysical atom that is both genuinely one and thus indivisible, yet, at the same time, genuinely extended and thus divisible? This would seem to be the most blatant of contradictions.

Consider such a substance, a person, for instance, or a worm, say. Such an animated substance is a genuine unity, for Leibniz. It is also genuinely indivisible, in one sense. Arnauld asks about the worm that is split in two, yet each part of the worm appears to remain animate. If the worm is a genuine corporeal substance, then this would seem to be a case of a substance that is split into two substances. Leibniz answers:

As regards an insect which one cuts in two, the two parts do not necessarily have to remain animate, although a certain movement remains in them. At least the soul of the whole animal will remain only in one part. [G II 100 (AG, p. 88)]

In that way, the corporeal substance is indivisible in one sense; *qua* substance, it cannot be divided into parts that are themselves substances as well. But, at the same time, the *body* of a corporeal substance is itself made up of other corporeal substances, and *it* can be divided. So, when we consider the body of a corporeal substance, independent of its soul or entelechy, that corporeal substance is divided into smaller parts, indeed, divided to infinity. Thus one can say about a corporeal substance that there is a sense in which it is indivisible, and a different sense in which it is not; the indivisibility of corporeal substance is what grounds the reality of body in general, while the divisibility is what grounds the extension of body.

Understood in this way, there is obviously room for considerable confusion. Leibniz attempts to clean things up a bit in a very interesting document from 1690, some comments on objections the Italian philosopher Michel Angelo Fardella made to Leibniz's views, probably in conversation. Let me quote a particularly crucial

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passage. I begin with the objection from Fardella that Leibniz takes himself to answer:

When dealing with a multitude of stones ABC, either stone A or B or C must be understood first. But it is not the same with a soul which, with other souls, does not constitute body. And it seems that there is some difficulty in the argument that, given that there are bodies composed of substances in the world, there must necessarily be something which is a single indivisible substance. [VE, p. 2155 (AG, p. 104)]

Leibniz answers:

I do not say that the body is composed of souls, nor that body is constituted by an aggregate of souls, but that it is constituted by an aggregate of substances. Moreover, the soul, properly and accurately speaking, is not a substance, but a substantial form.... [VE, p. 2156 (AG, p. 105)]

It seems that Fardella understood Leibniz to be saying that the aggregate argument leads us to hold that bodies are aggregates of souls or soul-like entities, something that Leibniz wanted to deny. (This, by itself, is interesting evidence for Adams' claim that Leibniz was an idealist even in this period. It is not implausible to suppose that there is some basis for Fardella's misunderstanding in what Leibniz may have told him in conversation.) Leibniz continues:

Further, although the aggregate of these substances constitutes body, they do not constitute it as parts, just as points are not parts of lines, since a part is always of the same sort as the whole. However, the organic bodies of substances included in any mass of matter are parts of that mass. So in a fish pond there are many fishes and the liquid in each fish is, in turn, a certain kind of fish pond which contains, as it were, other fishes or animals of their own kinds; and so on to infinity. And therefore there are substances everywhere in matter, just as points are everywhere in a line. And just as there is no portion of a line in which there are not an infinite number of points, there is no portion of matter which does not contain an infinite number of substances. But just as a point is not a part of a line, but a line in which there is a point is such a part, so also a soul is not a part of matter, but a body in which there is a soul is such a part of matter. [VE, p. 2156 (AG, p. 105)]

Leibniz is clearly insisting that bodies are not aggregates of souls. But what is his positive point?

Leibniz is arguing here that individual corporeal substances should not be considered as parts of the aggregate that constitutes a body. As he writes in an earlier part of the same text:

One must not infer that the indivisible substance enters into the composition of

body as a part, but rather as an essential, internal requisite.[VE, p. 2154 (AG, p. 103)]

Being indivisible, the substance is of a different kind than the body, which is divisible, and thus the substance cannot be a part of the body. On the other hand, the organic body associated with a corporeal substance is an aggregate, and thus is a genuine part of the larger body. In this way the divisibility of the organic body of a corporeal substance grounds the divisibility and thus the extension of the body and is a part of it, while the unity of the corporeal substance as a whole grounds the reality of the aggregate, and enters as a requisite, and not a part. The indivisibility and divisibility of the corporeal substance, somewhat confused in the Correspondence with Arnauld, are clearly distinguished in the notes on Fardella.

In these passages Leibniz, with apparent carelessness, uses the terms 'substance' and 'soul' almost interchangeably. Nor is it really important that he distinguish them carefully in this context. There are corporeal substances scattered throughout a body, and there are souls scattered throughout; indeed, it is because every corporeal substance has a soul that there are souls everywhere in body. But it is important here that each soul in the body be attached to its own organic body and make up a corporeal substance. Souls by themselves cannot make up a body, nor can organic bodies have reality without souls, substantial forms to give them unity (or unities) at some level. But joined with one another to form a corporeal substance, the soul (form) joined with its organic body can ground both the unity and the extension of bodies. In this way it is the *corporeal* substance, with its soul *and* its body, and not just substance as such that is important to Leibniz in this period. The fact that the corporeal substance is on the one hand a genuine unity and thereby indivisible, yet in an other sense extended and divisible, made it a perfect building-block for Leibniz's conception of the physical world. With the corporeal substance one could have one's cake and eat it too; one can have genuine unities that ground the reality of the world, without giving up infinite divisibility, and without making the implausible claim that one could construct extension out of non-extended points or souls.

4. Corporeal Substance and Extension

Before continuing with my story, and discussing the way in which Leibniz's thought changes later in his career, I must digress briefly and touch on a central question that my account of the middle years raises: the way in which corporeal substances are extended for Leibniz, and the way in which they are not.

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When I talk of corporeal substances as being extended for Leibniz, I certainly don't mean it in a Cartesian sense. Extension isn't a basic property, an attribute of substance for Leibniz; indeed, as we shall see, there is an important sense in which it isn't a property at all. In the *Discourse on Metaphysics*, Leibniz writes:

It is even possible to demonstrate that the notions of size, shape, and motion are not as distinct as is imagined and that they contain something imaginary and relative to our perception, as do (though to a greater extent) color, heat, and other similar qualities, qualities about which one can doubt whether they are truly found in the nature of things outside ourselves. That is why qualities of this kind cannot constitute any substance. [*Discourse* §12; cf. G II 99 (AG, p. 87)]

In this way, Leibniz suggests that just as the mechanists resolved color, warmth, and sound into size, shape, and motion, he, Leibniz, will resolve these later notions into something more basic still. Leibniz presses a similar theme fifteen years later in an important note he wrote in May 1702:

I believe that the nature of body does not consist in extension alone; in unraveling the notion of extension, I noticed that it is relative to something which must be spread out [*extendi*], and that it signifies a diffusion or repetition of a certain nature....For, since extension is a continuous and simultaneous repetition (just as duration is a successive repetition), it follows that whenever the same nature is diffused through many things at the same time, as, for example, malleability or specific gravity is in gold, whiteness is in milk, and resistance or impenetrability is generally in body, extension is said to have place. However, it must be confessed that the continuous diffusion of color, weight, malleability, and similar things that are homogeneous only in appearance is merely apparent [diffusion], and cannot be found in the smallest parts [of bodies]. Consequently, it is only the extension of resistance, diffused through body, that retains this designation on a strict examination. [G IV 392-3 (AG, p. 251); cf. G IV 467]

One can talk about a body being extended, for Leibniz, just as one can talk about a sweater being red. But just as the color of the sweater is resolved into something more basic, the texture of a surface that allows it to reflect light in a particular way, perhaps, so extension for Leibniz is resolved into something more basic, the diffusion of resistance.

If Adams is right, as I think that he probably is, this resistance, and the extension that its diffusion gives rise to, is ultimately grounded in the passivity, i.e., the confused perception of non-extended individual substances. (See Adams, chaps. 11-12, *passim*.) How exactly this can be is something of a mystery. This question is what led me originally to believe that Leibniz must endorse a conception of matter

that took him beyond his idealism; I assumed that if corporeal substances were genuinely extended, then there must be more to them than non-extended individual substances. *That* Leibniz was committed to such a reduction is quite plausible; *how* exactly he thought that such a reduction could be accomplished is a somewhat murkier, though not insoluble problem. Adams offers some interesting suggestions about how it might be done. (See esp. Adams, chapt. 13 § 2.) But a full examination of the issue would take us too far afield, and must await another occasion.⁸ Despite the complexities of the case, though, I think that it is proper to talk about corporeal substances as being extended for Leibniz, as long as we realize that this cannot be understood in any simple or literal sense.

5. *The World Well Lost*

I have tried to establish the philosophical significance of corporeal substance for Leibniz's philosophy in his middle years, the role that it plays in his conception of body. But, I would argue, this changes in later years, when the notion of corporeal substance is called into question.

As Adams well knows, Father René-Joseph de Tournemine wrote a little article which appeared in May 1703 in the journal he edited, the *Mémoires de Trévoux*. (Cf. Adams 295f.) There Tournemine referred to the two-clock example that Leibniz liked to use to illustrate his pre-established harmony. He wrote:

This correspondence, harmony, does not bring about either union or essential connection. Whatever resemblance one might suppose between two clocks, however justly their relations might be considered perfect, one can never say that the clocks are united just because the movements correspond with perfect symmetry. [Quoted in AG, p. 196]

Adams certainly takes account of this event, and Leibniz's reaction. Adams emphasizes how Tournemine's criticism transforms Leibniz's discussion of unity. That it does. But I would like to point out another related consequence.

As I noted earlier, what holds body and soul together for the animate body that constitutes a corporeal substance, for Leibniz, is pre-established harmony. Tournemine's argument, thus, calls into question for Leibniz the very status of corporeal substance, and makes problematic what Leibniz had almost taken for granted in his earlier writings, the fact that non-extended, individual substances (monads since the late 1690s) can join together to form genuine complex corporeal substances. This does not change his account of organisms, and the picture of a world of bugs within bugs, all the way down; this, in a way, persists to the end of

his life. But what is called into question, or at least made problematic in a way in which it wasn't before, is the claim that such organisms, organic bodies connected with souls, are themselves genuine substances, and thus capable of grounding the existence of the aggregates that constitute bodies. Remember, once more, the opening of the "Monadology":

The monad, which we shall discuss here, is nothing but a simple substance that enters into composites—simple, that is, without parts. And there must be simple substances, since there are composites; for the composite is nothing more than a collection, or *aggregate*, of simples. But where there are no parts, neither extension, nor shape, nor divisibility is possible. These monads are the true atoms of nature and, in brief, the elements of things. [Mon. §§ 1-3]

Unlike the parallel passage in the Correspondence with Arnauld, this argument now takes us not to corporeal substances, but directly to monads.

This important change is also reflected in the discussions in the Des Bosses correspondence. One of the central preoccupations of the correspondence is the notion of the corporeal substance. Leibniz there recognizes clearly that harmony isn't enough, and discusses with Des Bosses what would need to be added to a collection of monads to transform it into a genuine complex substance. Leibniz seems clearly to recognize that this is a very significant problem for his metaphysics, and that without the reality of the corporeal substance, the reality of the physical world is at stake. In the last year of his life, he wrote to Des Bosses:

You say that bodies can be something other than phenomena, even if they aren't substances. I believe that unless there are corporeal substances, bodies disappear into phenomena. And aggregates themselves are nothing but phenomena, since things other than the monads making them up are added by perception alone, by virtue of the very fact that they are perceived at the same time. Furthermore, if only monads were substances, then it would be necessary either that bodies are mere phenomena, or that the continuum arise from points, which, it is agreed, is absurd. Real continuity can arise only from a substantial bond. If nothing substantial existed beside monads, that is, if composites were mere phenomena, then extension itself would be nothing but a phenomenon resulting from simultaneous and mutually ordered appearances, and by virtue of that very fact, all of the controversies concerning the composition of the continuum would cease. [G II 517 (AG, p. 203)]

There is a lot packed into this passage, too much to try to tease out now. But it is clear to me that from Leibniz's point of view, the elimination of corporeal substances calls into question the reality of the world of extended things. It is not entirely clear

why this should be so. In the middle years Leibniz held that because of the harmony between soul and organic body, a corporeal substance constitutes a genuine substance. In the later years, even if Leibniz may deny that the harmony among the substances in question is sufficient to constitute it as a genuine complex substance, the harmony remains, and whatever relations there were among the substances construed as constituents of a corporeal substance are still there when Leibniz later comes to construe the same collection as an aggregate. But when the reality of the link between soul and organic body is called into question, Leibniz also calls into question the reality of the extension that results from the relations between soul and organic body. While the reasons are obscure, Leibniz seems to have held that if the connections that bind together the substances in the organic body are merely phenomenal, then so is the diffusion of passive force that constitutes the extension. That is to say, the reality of extension in the physical world depends on the reality (i.e., substantiality) of genuine individuals that are extended, or, at least, have bodies that are extended and divisible. In his correspondence with Des Bosses, Leibniz considers and develops the notion of a *vinculum substantiale*, a substantial chain or bond, as a means to address the question of complex substance. His claim is that this *vinculum substantiale* is what we need to add to the collection of monads in order to make of them a genuine corporeal substance. I quite agree with Adams (and many others) that there is no unequivocal evidence that Leibniz adopted this notion as his own (See Adams, pp. 299ff.). But, at the same time, I think that it is clear that he saw the problem it addresses, the unity of the corporeal substance, as his own, and that it was something that worried him.

Let us now return to Adams' assessment of the notion of corporeal substance in Leibniz's philosophy. Is it a mere "accommodation to traditionalist concerns of others, especially Roman Catholics," as Adams suggests? [Adams, p. 307] I find it very difficult to question the centrality of the notion of corporeal substance in the metaphysics of his middle years, as I have tried to argue earlier; it seems too central to his account of the world of extended bodies for it to have been a mere "accommodation" to the prejudices of others. Furthermore, the notion of corporeal substance is central to too many texts, letters, private notes, and published writings in the middle years to believe that it is just something that Leibniz held in deference to his correspondents. Indeed, in one of the most important texts from this period, the Correspondence with Arnould, Leibniz insists on the necessity of recognizing corporeal substance against the explicit objections of the Catholic Cartesian Arnould; it is difficult to see in what sense Leibniz might be accommodating his views to those of his Catholic correspondent. The situation is somewhat different

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in his later writings, particularly the correspondence with Des Bosses. Des Bosses certainly was Catholic, indeed, a Jesuit, and Adams' reading cannot be altogether dismissed. But as I read this and other letters of the period, Leibniz was profoundly disturbed at the idea of having to give up the reality of the physical world, and is seriously looking for some way to reconstitute the notion of corporeal substance. Even if we don't want to attribute to Leibniz the obscure and deeply problematic doctrine of the *vinculum substantiale*, I think that we still must recognize that Leibniz took seriously the problem that it was supposed to solve, the reality of the corporeal substance and the consequent reality of the world of extended physical objects. But even if Adams is right in holding that Leibniz was not, himself, wedded to the reality of the world of bodies in the Des Bosses letters, I would argue that this is an attitude that characterizes his later views, and that this attitude represents a significant change from his earlier years, where the reality of corporeal substance is quite central to his metaphysics and to his view of the physical world.

Adams is almost certainly right in holding that there is at least one important sense in which Leibniz's metaphysics doesn't change from early to late; Leibniz was an idealist both in his middle years, and in his later writings. Leibniz may have been an idealist always, but it doesn't follow from that that there weren't important changes in his metaphysics from middle to late. Despite the very compelling case Adams has made in his book, I still hold that it is important to recognize the different and more realistic attitude Leibniz took toward the world of extended bodies in his middle years and distinguish it from the less realistic and apparently more other-worldly metaphysics of the "Monadology." Though I concede that even this earlier and more realistic view is ultimately grounded in his idealistic metaphysics, I would still insist, as I did in my earlier paper, that "at least when it first emerged, Leibniz's mature physics was intended to describe the world as it *really* is.... It is only later in Leibniz's life, after he has put aside his serious work in physics that his science loses its grip on reality." ["Middle Years", p. 99]

¹Oxford: Oxford University Press, 1994. References to the book will be given in the text as "Adams." As much as possible, I will also give references to Leibniz in the text, with the original language followed by an English translation, when available. The abbreviations will be as follows:

AG: Leibniz, Gottfried Wilhelm (1989). *Leibniz: Philosophical Essays*, ed. and trans. R. Ariew and D. Garber. Indianapolis, In. and Cambridge, Mass.: Hackett.
G: Leibniz, Gottfried Wilhelm (1875-90). *Die philosophischen Schriften*, (7

vols.) ed. C. I. Gerhardt. Berlin: Weidmannsche Buchhandlung. [repr. Hildesheim: Olms, 1978].

VE: Leibniz, Gottfried Wilhelm (1982-91). *Vorausedition zur Reihe VI — philosophische Schriften — in der Ausgabe der Akademie [der Wissenschaften] der DDR [Berlin]* (10 vols.). Münster: Leibniz-Forschungsstelle der Universität Münster.

²In K. Okruhlik and J. Brown (eds.) (1985), *The Natural Philosophy of Leibniz*. Dordrecht: D. Reidel. References to this article will be given in the text as “Middle Years”.

³This comes out quite explicitly in Adams, pp. 335-6, where Adams assimilates the position Leibniz takes on the argument from complexes to simples in the Correspondence with Arnauld (G II 96 [AG, p. 85]) with the similar, but on my view, rather different argument in § 2 of the *Monadology*.

⁴What still gives me pause here is certain passages in the Fardella notes, to be discussed in more detail below. In a passage I quote below, Leibniz talks about souls being in bodies as points are in lines. For Leibniz, points are the boundaries of line segments, and are of a different sort than the lines that they bound. This would seem to imply that souls are something of a different sort than the bodies that they serve to individuate. But I am now reasonably convinced by Adams’ argument that this is misleading, and that Leibniz did not intend it to undermine his basically idealistic position.

⁵The *Six discours* can be found in Cordemoy, Gérald de (1968). *Oeuvres Philosophiques*, ed. P. Clair and F. Girbal, Paris: Presses Universitaires de France. References will be given in the text as “*Six discours*.” Leibniz’s notes can be found in VE 695-7. According to the editors of the VE, Leibniz read Cordemoy in Latin translation, in Cordemoy, *Tractatus physici duo* (Geneva, 1679).

⁶By ‘mass’ Cordemoy means here an assemblage of bodies that are intertwined with one another, and (almost) at rest with respect to one another so that they cannot be detached from one another; cf. *Six discours*, p. 96. Cordemoy distinguishes a mass from a heap (*tas*) or a liquid, but all three are varieties of matter.

⁷Leibniz paraphrases this in VE, p. 695. In Leibniz’s paraphrase, he substitutes ‘matter’ for ‘mass’, perhaps following the Latin version of Cordemoy’s text, which I have not been able to consult.

⁸This will be discussed in more detail in Garber, “Leibniz on Matter and Form”, forthcoming in *Early Science and Medicine* vol. 2 no. 3 (1997).