Response to Carriero, Mugnai, and Garber

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John Carriero, Massimo Mugnai, and Daniel Garber have all contributed significantly to our understanding of Leibniz. I am honored to have my book discussed by such distinguished Leibniz interpreters, and their present reviews all push me in ways that I find instructive. I will first discuss issues pertaining to contingency, responding to Carriero's review and most of Mugnai's; then issues about bodies, responding to Garber's review and the last part of Mugnai's.

1. Contingency

In my book (p. 22f.)[1] I treat the "possible in its own nature" account as "the innermost and surest bastion of Leibniz's defenses against the denial of contingency," treating the infinite analysis account, by comparison, as merely "the outer walls." Both Carriero and Mugnai argue, in different ways, that the former account is more problematic, and the latter more successful, than I have indicated. Most of what they say in their arguments seems to me right and illuminating, but the "possible in its own nature" solution still seems to me the more successful of the two in relation to Leibniz's most important aims. I am persuaded that *neither* is plausible as an account of *contingency*, but I think the "possible in its own nature" account contains features that do help Leibniz to maintain important theses about divine voluntary choice.

1.1 Internal Possibility and Contingency

Carriero is certainly right that the distinction between internal and external modalities was not invented by Leibniz, and in particular that Spinoza (who also did not invent the distinction) denies the internal necessity of finite things. Carriero rightly infers that denying the internal necessity of finite things could not be viewed in the historical context as sufficient for avoiding a necessitarianism as strong as Spinoza's. This is a point to which I did not give the attention it deserves in my book. Perhaps Leibniz did not give it the attention it deserves either, although he knew of Spinoza's acceptance of internal modalities, as I will show below.

Leibniz believed, rightly or wrongly, that his way of denying internal necessity averted the worst consequences of necessitarianism. At least he believed it until the

mid-1680s, when reflection on his conceptual containment theory of truth prompted the development of the infinite analysis theory of contingency; but in fact he still relies on the main features of the "possible in its own nature" account in his *Theodicy* of 1710 (p. 19f.). Above all, he thought his denial of internal necessity preserved the reality of choice in God, and hence the reality of final causation and an explanatory role for value. This one of all the internally possible worlds exists *because* God chooses it; and God chooses it *because* it is the best and *in order* to create the best—all of which Spinoza denied, and all of which presupposes that there is a plurality of internally possible worlds for God to choose among.

This point exemplifies the "reasoning from choice to internal possibility" that Carriero rightly says I have emphasized. Reasoning in the other direction, from internal possibilities to choice, is certainly present in Leibniz, however, for instance in the *Theodicy*, where he says that

> This cause [of the existence of the world] must also be *intelligent* [as well as necessary and eternal]; for since this world which exists is contingent, and an infinity of other worlds are equally possible and equally demand existence, so to speak, as well as it, the cause of the world must have had a regard or relation to all those possible worlds, to determine one of them. And that regard or relation of an existing substance to mere possibilities cannot be anything but the *understanding* that has the ideas of them; and determining one of them cannot be anything but the act of the *will* that chooses. And it is the *power* of that substance that renders the will efficacious. The power tends to *being*, the wisdom or understanding to *the true*, and the will to *the good* (T 7).

Similar reasoning, neither as concise nor as explicit on some points, is found in Leibniz's little essay "On the Radical Origination of Things" of 1697. There he adds an attack on the idea of an impersonal "metaphysical mechanism" that could select the best from among many possible worlds and determine its actualization in preference to that of any other, without the intervention of any mental activity.[2] His attack is based on the point that whereas causes must really exist,

> possibilities or existences, prior or additional to existence, are imaginary or fictitious; therefore no reason of existence can be sought in them. I reply that neither those essences [of merely possible things], nor what are called eternal truths about them, are fictitious, but they exist in a certain region of ideas, so to speak, namely in God himself (G VII,304f./L 488).

Do these arguments create an "irresistible pressure," as Carriero denies, to affirm a voluntary rather than nonvoluntary mechanism to explain the selection of one from among many internally possible worlds? Probably not. I find Leibniz's

arguments very plausible on this point, but few pressures in metaphysics are irresistible. Given Leibniz's occasional use of the language of emanation, indeed, and his sympathy for the Platonic tradition, in which impersonal mechanisms and emanationist ideas have played a prominent part, his scorn for impersonal mechanisms in this context might seem a little surprising (if also theologically predictable in another way). For better or for worse, however, Leibniz seems to have been attracted only to the personalistic or mentalistic forms of the Platonic tradition. For instance, he never shows serious interest in views about the ontology of abstract objects that are not broadly nominalist or conceptualist. So while Leibniz's anti-Spinozistic inference from a plurality of internally possible worlds to teleology and divine volition seems plausible to me, he may not have given a conclusive justification for it.

It remains true, however, that Leibniz does not differ from Spinoza in the acceptance of internal modalities as such. This is an important point, and Carriero's paper helps to bring it into focus. If there is a difference in what they believed about internal modalities, it can only be that Leibniz recognized a much *richer* array of internal possibilities than Spinoza did. I think there is such a difference between them, though I take myself to be in disagreement with Carriero on that point. The key text here is proposition 16 of part I of Spinoza's *Ethics*: "From the necessity of the divine nature there must follow infinite things in infinite modes (that is, everything that can fall under an infinite intellect)." I take this (though Carriero doesn't) to imply that everything possible necessarily exists, and necessarily so; and I think Spinoza's account of infinity (*Ethics* I, defns. 2 and 6) supports this reading. Leibniz read Spinoza in this sense too, at least in the last decade of his life, when he wrote, commenting on *Ethics* I, prop. 16: "This view is quite false, and makes the same mistake that Descartes insinuated, that matter successively accepts all shapes" (AG 277).

On this version of Spinoza's view, if there are alternative internally possible orders of things, they differ from the actual world only by subtraction, by containing *less* than *everything* conceivable by an infinite intellect. In that case, arguably, the actual world could have been produced by God by an impersonal mechanism, so to speak, simply emanating *everything* possible, without any need for voluntary choice. Leibniz, on the other hand, believed in a much richer variety of things internally possible—too rich for any coherent world to contain *everything* internally possible. As we have seen, he argues that such richness makes divine volition a necessary condition of the creation of anything finite; that is the argument he would

doubtless press on Spinoza if convinced that Spinoza's realm of the internally possible was indeed as richly varied as his own.

There is a major point, however, that I think must simply be ceded to Carriero. The "possible in its own nature" solution, in its historical context, has very limited potential as an account of *contingency*. For with regard to *contingency*, it does not distinguish Leibniz's position from Spinoza's, and Leibniz knew that it doesn't. This is evident in a document of about 1678, which contains, a page later, one of Leibniz's early formulations of the "possible in its own nature" account; he is commenting here on proposition 29 of part I of Spinoza's *Ethics* ("In the nature of things there is nothing contingent, but everything is determined by the necessity of the divine nature to exist and act in a certain mode"). Leibniz objects,

> The matter depends on the definition of *contingent*, which [Spinoza] has not given anywhere. I, with others, take the contingent for that whose essence does not involve existence. In this sense particular things will be contingent according to Spinoza himself, by prop. 24.

Leibniz goes on here to sketch a much stronger, noninternal, indeterminist sense of 'contingent', and agrees with Spinoza that nothing is or can be contingent in that sense (G I,148/L 203f.). In 1678 Leibniz, rightly or wrongly, takes the standard sense of 'contingent' to be a weak, internal one. Contingency in that sense can serve him only in the same way it can serve Spinoza, as a way of distinguishing dependent from independent being.

What it cannot do is establish the contingency of the divine creative action. For what is not internally necessary can be produced by a necessary action, as Carriero argues—and as Leibniz himself assumes in early statements of the "possible in its own nature" account, where the claim is precisely that something (internally) contingent can follow from something necessary (pp. 12-18). (This claim is *not* front and center later, where the *Theodicy* draws on the "possible in its own nature" account.)

Leibniz does see this account as contributing something important to the theory of divine action, by virtue of the plurality of possible worlds. What it may help him to establish, however, is not *contingency* of the divine action, but rather its voluntary, goal oriented, value governed character. It helps him to deny, against Spinoza, that things happen by "a blind necessity" (T 173); but the emphasis there falls on *blind*. What he is denying is that things happen without the intervention of will and the influence of value. In other words, the contribution of the "possible in its own nature account" to Leibniz's theory of action may have, in Carriero's words, "rather little to do with contingency."

1.2 Complete Concepts and Causality

One of Carriero's arguments for preferring the infinite analysis account of contingency to that in terms of internal modalities is that "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." Now the "possible in its own nature" account was not originally devised to deal with problems arising from Leibniz's conceptual containment theory of truth, but with a more essentially theological problem that antedates the containment theory in his thought, and that holds the center of the stage in the *Theodicy*, a problem arising from the apparent necessity with which an essentially good God would choose to create the best possible world. But the "possible in its own nature" account is not so lacking in resources for dealing with conceptual containment issues as to justify Carriero's claim that such issues "make it appear as if this world is the only *internally* possible world" (emphasis added).

I have emphasized (pp. 42-46) that Leibniz's theory implies that the actual existence of those things that actually exist is contained in their individual concepts. The crucial question at this point is *how* it is contained there, and I have cited several texts to show that according to Leibniz "existence is contained in the concepts of existing things, not directly, but by virtue of the factors that determine God to create those things" (p. 43). Existence is "contained" in the concepts of created things, in other words, not as one of the core properties that define the natures of those things, but as something that follows from their definitive properties when they are related to alternative possibilities and to the wisdom and goodness of God. The "core" properties here correspond to what I have called the "basic" concept of a possible world, in my version of the "possible in its own nature" account (p. 14). Actuality is contained in the *complete* concept of the best possible world and nonactuality in the *complete* concepts of all the others, but neither actuality nor nonactuality is contained in the *basic* concept of any possible world. That is precisely how, on this account, all the worlds are to remain internally possible, and none is to be internally necessary.

This raises issues about the structure of Leibnizian complete concepts, however, on which I may be in disagreement with Mugnai as well as Carriero. Mugnai rightly observes that there is nothing explicit in Leibniz's writings that corresponds precisely to my terminology of "basic" concepts. He cites an interesting text of about 1695 (Gr 358) in which Leibniz seems to suggest an alternative way of

specifying a narrower set of Peter's properties from which something contained in his complete concept (his denying Christ) does not follow. In this text Leibniz does not suggest that this narrow set of properties constitutes an "essence" or "basic concept" of any sort.[3] What he does suggest, however, on a strict interpretation of the text, is an unacceptably flexible procedure for specifying the relevant set of properties. What he says (in Benson Mates' translation which Mugnai uses) is that "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."[4] If we are trying to determine whether a particular property belongs to an individual by internal necessity, or whether there is an interesting sense in which that individual might have failed to have that property, are we really entitled simply to subtract from the individual's complete concept all "those attributes ... from which the [property] does not follow"? That procedure seems to me much too arbitrary and *ad hoc* to assure us of any interesting sort of possibility. If Leibniz is to have interesting internal modalities, he needs a fixed procedure for specifying which attributes count in determining the internal modalities; and that is exactly what my definition of "basic concepts" was intended to provide. But maybe I am not in deep disagreement with Mugnai here, since he agrees that the concepts I propose "seem to fill a gap in Leibniz's metaphysics."

I may disagree more deeply with Carriero about the structure of complete concepts—though not, perhaps, in the point I have already made, that actual *existence* is contained in the concepts of created things only by virtue of the goodness and wisdom of God. That is a point that seems to me clearly implied in the texts, and consistent, so far as I can see, with the central features of Carriero's account. However, I am inclined now to make a similar point about some properties other than existence; and here I will say some things that I think are neither contained in my book nor consistent with Carriero's interpretation of Leibniz.[5]

I begin with a passage in Leibniz's remarks on Arnauld's letter of 13 May 1686. Trying to maintain the freedom of God, not only in choosing a world, but also in governing the course of events within the world, Leibniz claims that "the connection between Adam and [later] human events is not independent of all the free decrees of God," but rather depends on "a few primitive free decrees that can be called laws of the universe, which regulate the consequences of things, and which, being joined to the free decree to create Adam, bring about the result" (LA 40). Since he holds that the connection in question is contained in the concept of Adam even when Adam is merely conceived as a possibility, Leibniz grants that the connection, like the possibility of Adam, is not dependent on any *actual* divine decree; but he

maintains that "possible individual concepts include some *possible* free decrees" of God (LA 40, emphasis added).

We may well wonder how divine decrees that are merely possible can be relevant to the freedom of God. In answering this question it will be helpful to consider *which* possible divine decrees are included in a possible individual concept, and why. I take it the decrees in question are the laws that God *would* decree if creating the individual in question. Which laws would those be, and why would God choose them? The obvious Leibnizian answer is that they would be the *best* laws to choose on the assumption of the existence of that individual, and that God would choose them *because* of that superiority. The choice would thus be an expression of, and dependent on, God's wisdom and goodness; and the dependence of outcomes on God's wisdom and goodness is precisely what Leibniz wished primarily to maintain in denying "blind" necessity.

What the appeal to possible divine decrees is supposed to place within the scope of God's freedom, however, is not just the choice of the decrees, but certain "connections" within the created world, such as "the connection between Adam and [later] human events." How can the possible divine decrees accomplish that, even supposing they are free? They can, I think, only if they are sufficiently distinct from the items to be connected. In the individual concept of Adam, for example, Leibniz will have to distinguish the laws it includes, which God would decree for the world if God created Adam, from some more narrowly essential set of Adam's "core" predicates, if I may put it so, which are to be connected, by the laws, to succeeding events, from which again the core predicates must be distinct. These distinctions are what Leibniz needs if he is to claim that it is God's free decrees that determine the connection between Adam and the succeeding events. Both the laws and the succeeding events will be "included," in the broadest sense, with the core predicates, in the individual concept of Adam; but the concept will be constructed in the following way. Begin with the core predicates, plus the wisdom and goodness of God and the range of possibilities open to God. They determine a set of laws, which are the best to choose on the assumption that the core predicates are being actualized; add those laws to the individual concept. The laws and the core predicates determine the succeeding events; add them too to the individual concept, completing it.

What are the core predicates? As Mugnai points out, Leibniz does not actually give us such a construction. The most manageable conjecture might identify Adam's core predicates with a complete, nonrelational characterization of one of his instantaneous states—presumably the first one, if he was created in time. The

connection of this initial state with (1) Adam's later states and (2) the existence and states of other created substances will depend on God's (actual or possible) free decrees, and hence on God's wisdom and goodness.

This account requires Leibniz to deny that the connections of Adam's intial state with his later states and with other created substances are so direct and so strongly conceptual as to be independent of God's wisdom and goodness, and God's choices. He must hold that creating Adam's initial state (1) without any of his later states, and (2) without any of the other created substances of our world, was among the internally possible options available to God, and was rejected only because of the disharmony involved in it. That it was Leibniz's view that God did in this way have the option (2) of creating a substance without the other substances that would harmonize with it, I have argued in the third chapter of my book (pp. 102-6). Whether God had the similar option (1) of creating a substance's initial state without the later states that harmony demands is a more difficult question, to which I did not give as clear an answer as I might have in my book (pp. 99-102). With one qualification, I will now say that Leibniz should and would have answered it in the affirmative.

Here we confront the issue of the relation between conceptual and causal connection in Leibniz, which Mugnai rightly raises. In my book I spoke (perhaps incautiously) of "the coalescence of conceptual and causal connections ... in the notion of *substantial form*" (p. 78). I think it is clear that Leibniz supposes each substance to contain, in all its instantaneous states, a concrete version of its individual concept. This concretization of the individual concept is to be found in the substantial form, and more broadly in the primitive forces of the substance. Leibniz conceives of the primitive forces, moreover, in terms of laws that govern the succession of the substance's internal states. Their force is certainly *causal*, and I think they must be among the laws that are included in the individual *concept* of the substance; so there is a link here between causal and conceptual connections. But is the causal connection therefore (in Mugnai's words) "the same that subsists between premises and conclusion in a deductive argument"? Is it (as that would suggest) so strong as to deny God any internally possible option of creating a substance's initial state, complete with its primitive forces, without the succeeding states that those forces would naturally cause?

The latter is very similar to the question that I would raise in response to Carriero's thesis that "we cannot intelligibly consider Caesar apart from the laws of the universe into which he enters" because so little would be "left when we extracted the laws from Caesar." On my interpretation Carriero's interesting and plausible

point is accommodated inasmuch as the laws are incorporated in the primitive forces that consitute Caesar's substance and are present in every one of his temporal states. I think we must distinguish, however, between the laws being incorporated concretely in the substance's primitive forces, and their being actually followed in the succession of the substance's states. Given that the primitive forces of the creature are defined by certain laws, is it impossible for God to obstruct or frustrate those forces by causing states to succeed otherwise than as the laws demand? Even granting (as I think Leibniz would) that the created substance could not exist at all if its primitive forces were *always* frustrated, does it follow that God cannot *ever* frustrate them? May it not be that in each case, considered by itself, God can frustrate those forces, so that all the connections depend on God's choices?

Leibniz addressed such questions in 1706, in a discussion of God's concurrence with the actions of creatures, in his first letter to Bartholomew Des Bosses:

> I acknowledge that God's concurrence is so necessary that, however much power [*virtus*] of the creature is posited, the action would not follow if God withdrew the concurrence. ... Nevertheless I do not see how this would reduce the power to a bare faculty; for I judge that in the active power there is a certain *demand* [*exigentia*] for action and therefore for divine concurrence for action [and that the demand,] though resistible, is founded in the laws of nature constituted by divine wisdom (G II,295).

This implies, I think, that the efficacy of the primitive forces contained in any state of a created substance, in producing later states of that substance, depends on God's acting, in accordance with divine wisdom, to concur with the created forces; and that, were it not for the divine wisdom and goodness, God could "resist" the "demand" to concur with the law-conforming created powers, and could produce instead some internally possible alternative that would still begin with the same initial state. If so, the link between succeeding states of a single substance must be weaker than that between premises and conclusion of a valid deductive argument.

I am not sure there is any textual evidence that cannot be reconciled with this interpretation of Leibniz. We must bear in mind that he certainly did hold that God's wisdom and goodness normally preclude the unnatural or disharmonious sequence of states that would result from God's resisting the causal "demands" of the primitive forces of creatures. The constraints of divine wisdom and goodness are strong constraints for Leibniz, surely sufficient to ground claims about what "would" happen, and probably in some contexts about what "can" happen.

There is one way, however, in which this interpretation may need to be qualified. As I noted in my book, there are grounds in Leibniz's system that might lead one

to "suppose that God's causing a substance to have any state not following from its primitive forces and previous state would be counted by Leibniz as annihilation" of that substance (p. 102). More broadly, it is much clearer in the Leibnizian scheme of things that the connections between succeeding states of a substance are loose enough to depend on God's choices, and hence on God's wisdom and goodness, than that the connection between those states and the individual identity of the substance is loose enough to depend similarly on God's will. Indeed it is hard to see how the latter connection can be that loose, given that for Leibniz the identities and nonidentities of individuals are never primitives that God could combine in various ways with other primitives, but rather are constructed logically from other properties of the individuals, including their temporal states.[6] Leibniz may not see this point, however, when he speaks of "the connection between Adam and human events"—a connection not merely among events, but between an individual substance and events—as depending on God's free decrees (LA 40).

1.3 Infinite Analysis

This is not to deny that the connections between created individuals, as such (or their identities), and their temporal states are contingent according to Leibniz's theory of infinite analysis. This is indeed one of the theory's explicitly intended consequences (G I,74). According to Carriero the theory works better in generating this consequence than in rendering the bestness of the best possible world contingent. He has not persuaded me on that point. Infinity enters at two stages in the comparative evaluation of possible worlds. Carriero focuses on the second stage, at which there are infinitely many worlds to be compared. He rightly notes that any suboptimal world may be eliminated after finitely many comparisons. He thinks far too many worlds will lose in this way the contingency of their nonexistence. But there remains the first stage, at which each possible world must be assigned its own value, or must at least be adequately comprehended for evaluative comparison with other worlds. This comprehension seems to require an infinite analysis, in typical cases. For value is a holistic property of worlds, to which every detail is relevant; and all the worlds in which Leibniz is seriously interested are infinitely complex. Since, for example, crossing the Rubicon is not a similarly holistic property of Caesar, it seems to me less evident that such actions will not emerge after a finite analysis of a substance's individual concept. What Leibniz needs is an understanding of individual concepts, and analyses thereof, that will show why an infinite analysis would be required to derive free actions from the individual concepts of

voluntary agents.

Carriero proposes such an understanding, and up to a point I think it is both plausible and illuminating. He suggests identifying the complete concept of Caesar with "a complete physical blueprint of Caesar's body" (at some time prior to his crossing of the Rubicon, I presume). In a Leibnizian mechanistic physical universe Caesar's crossing of the Rubicon can be proved from such a blueprint, but only by an infinitely complex physical argument. In this way, with an apt choice of structure for individual concepts, the infinite analysis theory can render voluntary choices contingent.

I am less content, however, with Carriero's interpretation of analyses as "infinite series of physical arguments," in which each successive stage is a better "approximation" of the concept under analysis. It does fit some of Leibniz's mathematical analogies, in which he likens infinite analyses to series that approach, but never reach, a limit, as Carriero notes. But I think it does not fit Leibniz's presentation of analysis as such, which is in terms of the substitution of (more explicitly complex) equivalents for the terms of the proposition to be proved (G I,56-64; FC 181f./L 264f.; cf. C 68; G I,44). Particularly telling is Leibniz's statement that for the infinite analysis theory to work, "it is necessary that some [formally] incomplex terms can be analyzed continually in such a way that one never arrives at terms that are conceived through themselves" (G I,63). Terms conceived through themselves are surely the supposed primitive predicates from which all others are constructed by logical operations, and analysis here is surely a process of substituting for single, implicitly complex terms their formally complex logical constructions from simpler terms. In such an analysis there is no room for *approximation* of the concept under analysis. The substituted terms must be *precisely* equivalent to those they replace, and each step in the analysis, if true at all, must be *precisely* true.

I find it hard to doubt that this is what Leibniz meant analysis to be when he was thinking about analysis as such. I grant, however, that it may not mesh well with some other strands in his thought. It leaves as much obscurity as ever in Leibniz's suggestions of analyses infinitely approaching perfect demonstration as curves may infinitely approach their asymptotes. And, even aside from problems of infinity, it is not obvious that the assignment of values to possible worlds could be a process of replacing terms with more fully analyzed equivalents.

Leibniz left us no more than sketches of his theory of infinite analysis. Very likely we will never be able to give a wholly satisfactory account of it. But the difficulties that confront us in trying to figure out how it would work are not, I think, the deepest ground of objection to it. What is most profoundly unsatisfying about it is that as

a proof-theoretical account, it is not plausibly relevant to the issues of divine and human freedom with which Leibniz is usually concerned when he is proposing the theory. Those issues demand a theory that has something to say about what (if anything) determines action and choice. The infinite analysis theory either has nothing to say about that, or else suggests conceptual containment as an answer, an answer which is not in itself any help to one who is trying to maintain divine or human freedom. The "possible in its own nature" account, on the other hand, at least meshes with Leibniz's attempts to render many facts dependent on God's choices and ultimately on the divine wisdom and goodness. It thus has more of a metaphysical payoff than I see in the infnite analysis theory, though I now think that *neither* theory is very plausible as an account of what we intuitively mean by *contingency*.

2. Bodies

Like those of Carriero and Mugnai, Daniel Garber's comments contain, predictably, much that is interesting and illuminating—for instance, the fascinating discussion of the extension of corporeal substances and, in connection with it, Leibniz's comments on Cordemoy. It is evident that the extent of disagreement between us is much reduced; but there remain some divergences in our interpretations that may be worth exploring here.

2.1 Substantial Unity

It is clear that Leibniz's response to Tournemine marks some change in his treatment of corporeal substance; the earliest documents for this response come from early in 1706 (p. 295). In the remaining decade of Leibniz's life we find at least three significant developments in his philosophy of body. (1) In several important places he concedes, as he had never done before, that his preestablished harmony cannot ground a true substantial unity for corporeal substance. (2) He frequently (and famously) analyzes bodies as aggregates of monads, or *simple* substances, without reference to corporeal substances, as he had rarely done before.[7] In Leibniz's last years he gives more attention to monads, and less to corporeal substance as such. (3) In several of the later contexts he also invents and entertains theories about metaphysical bonds of union which Garber and I and most other Leibniz scholars think were never part of Leibniz's own philosophy, but which he

may have regarded as rationally admissible speculations for theologies that required them.

It is possible that I have underestimated the importance of this family of changes, as Garber argues. The evidence of change is messy, however; and I am not sure. It is difficult to ascertain what Leibniz really thought, early or late, about substantial unity. We still find affirmations of "corporeal" or "composite" substances in some writings of his later years (such as G VII,501 and PNG 3, from 1711 and 1714). What could he have meant by these affirmations, if he was sincere in denying, in the later years, that there could be corporeal substance without mysterious metaphysical bonds of union, and if he never really believed in the latter, as Garber and I and others hold?

Leibniz's reaction to Tournemine also strikes me as perplexing. Why would Tournemine's brief critique have produced a dramatic change in Leibniz's views about body? His regard for Tournemine's thought was limited (G II,281), and Tournemine's criticism was not powerfully argued. Tournemine did have a good point, nonetheless. Seizing on Leibniz's striking (and now famous) analogy of synchronized clocks as a model for the preestablished harmony, Tournemine objects, "Whatever resemblance one might suppose between two clocks, ... one can never say that the clocks are united just because the movements correspond with perfect symmetry" (AG 196). One way of sensing the force of this objection is to note how similar it is to Leibniz's own manner of arguing against the substantiality of corporeal aggregates by pointing out that putting two diamonds in physical contact cannot make one substance of them (LA 76). In Leibniz's thinking about substantial unity it is crucial to distinguish the true or *per se* unity of substances from the weaker, merely accidental unity of aggregates. In Leibniz's preestablished harmony, however, and more broadly in his fundamentally monadological philosophy, as I put it in my book,

> there is no way for the unity of a corporeal substance to be anything over and above the system of relations among perceptions of simple substances. But aggregates, too, are united by relations among the perceptions of substances, according to Leibniz ... So on this line of thought it might seem that the unity of a corporeal substance is of the same kind as the merely accidental unity of an aggregate (p. 293).

This is a serious problem, and arguably fatal to any attempt to domesticate composite corporeal substance into the framework of the monadology. In my book I probably underrated its gravity and overrated Leibniz's chances of defeating it.

Still he is not without resources in this matter. The unity of a corporeal substance and the unity of a corporeal aggregate, such as a rock or a chair, must both be viewed by him as metaphysically constructed from relations among the (harmonious) perceptions of simple substances, and will thus have a fundamental, and perhaps disturbing, metaphysical similarity. But the constructions will also be importantly different in the two cases, chiefly because the corporeal substance will be "dominated," as the aggregate will not, by a single monad or substantial form. As a result the unity of a corporeal substance will have properties important to Leibniz that the unity of an aggregate will not have. The most significant of these properties, perhaps, is that it is naturally possible—that is, consistent with the world's harmony—for aggregates to be dissolved,[8] but not for a corporeal substance to be dissolved, so that in this sense corporeal substances are naturally indissoluble.

Perhaps we should not think that these differences in the construction of different types of corporeal unities are sufficient to constitute a *per se* or true substantial unity of any corporeal construction. But Leibniz had presumably thought that some such differences of construction would accomplish just that when he claimed that corporeal substances are united by their substantial forms or dominant monads (e.g., LA 77; G II,252). These constructions and their resulting properties remain available to Leibniz in his last years. There is even some evidence from 1714 of an attempt to ground substantial unity in them (p. 306; PNG 3). For the most part, however, his old constructions of substantial unity in bodies simply drop from sight in the later years, without any detailed critique of them— and without any detailed attempt to defend them. What would have led Leibniz to change his mind on this point? Surely the fundamental problem had not escaped his attention; surely he did not first learn of it from Tournemine. Perhaps he had underrated its gravity, and further reflection on the problem in the course of preparing a reply to Tournemine led him to see for the first time how formidable it is, as Garber has suggested to me. Perhaps.

The alternative explanation proposed in my book for the change in the tune Leibniz sang about bodies is that his interest in corporeal substance "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" (p. 307). Garber objects to this diagnosis. I will discuss it here, first as it applies to Leibniz's thought in 1706 and after, then as it applies to his thought before 1706.

It still seems to me very difficult to affirm Leibniz's seriousness about corporeal substance in the later years. He more or less tells Des Bosses that he is not very

serious about "substantial bonds," and that he does not need such a hypothesis because his eucharistic theology does not require it (G II,499,399). And, as I have noted, he continues sometimes to affirm what looks like his old doctrine of corporeal substance, though in other places he has repudiated one of its essential foundations. This is not to say that he no longer wanted, as most idealists do, to espouse a measure of realism about bodies. But this measure of realism is not conceived in terms of composite corporeal substances, but in terms of the well-founding of corporeal phenomena in the substantiality of the monads of which they are aggregated. Thus in the reading notes that Leibniz made in his last years in his copy of Berkeley's *Principles*, in urging on the Irish philosopher a more realistic way of thinking (or at least of talking) about matter, he makes no appeal to his old theory of corporeal substance, but rather states that Berkeley "ought to have gone on further, namely to infinite Monads, constituting all things, and to their preestablished harmony," so that he could say that matter is "a result of substances" (p. 224).

It is probably not important to Garber to deny what I have just said about the later years. His main point in objecting to my diagnosis of the change in Leibniz's treatment of bodies is that he thinks that Leibniz's affirmation of corporeal substance before 1706 was sincerely and autonomously motivated. He may be right about that. Leibniz certainly seems to have a lively personal interest in corporeal substance in many writings, public and private, before 1706; and he makes it central to important discussions in his middle years. On the other hand, it is well known that the *Discourse on Metaphysics* and Leibniz's letters to Arnauld, and especially their preliminary drafts, contain much hesitation about the idea of corporeal substance.[9] The first presentation of the idea to Arnauld, indeed, begins tentatively, with an *if*: "If the body is a substance and not a mere phenomenon like the rainbow, nor a being united by accident or by aggregation like a pile of stones ..." (LA 58).

Garber rightly points out that Arnauld, as a Cartesian, was not interested in buying Leibniz's account of corporeal substance and its unity, and thus could hardly have been the source of a Catholic pressure for Leibniz to accommodate in this matter. But Leibniz makes his interest in accommodating Catholic theology quite explicit to Arnauld as a motive for preferring his account of corporeal substance, noting that "the [fifth] Lateran council declares that the soul is truly the substantial form of our body" (LA 75).

To classify Leibniz's interest in corporeal substance and its per se unity as heteronomous, is not necessarily to deny that he believed what he said in proposing a construction of such substances and their unity within the framework of his thought. Such constructions were available to him, both before and after his ex-

change with Tournemine. Early and late, he had no reason to think them impossible in themselves, or inconsistent with the main features of his philosophy. The serious question about them, about which he *may* have changed his mind in 1706, or thereabouts, is whether they are adequate to ground a true substantial unity. If that question had been personally important to Leibniz, I find it hard to believe that he would not have subjected the constructions, and arguments for and against their adequacy, to a searching analysis. I know of no such searching examination in his work, before or after 1706.

2.2 Realism

The question of the realism or nonrealism of Leibniz's philosophy of physics is very interesting, partly for its metaphilosophical ramifications. It is not a question that Leibniz himself asks. He does sometimes, especially in his letters to Des Bosses, put issues in terms of the the reality of bodies or of other items involved in the discussion. But it would be anachronistic to attribute to him explicit views about the realism or antirealism (or nonrealism) of a philosophical position.

If we are going, nonetheless, to discuss the question of realism in Leibniz's thought about bodies, as I think we should, it will be important for us to try to be clear about what we mean by it. Realism is often contrasted with idealism, and that may lead some to suppose that any position that treats all facts about bodies as metaphysically constructed out of, or reducible to, facts about minds or mind-like entities is *ipso facto* no form of realism about bodies. In that sense of realism, of course, I do not think that Leibniz was a realist about bodies at any time in his mature years, from 1686, or earlier, to his death. In a broader sense of 'realism', however, in which it primarily requires a reference to realities outside of *our* minds, and facts obtaining independently of our opinions, I agree with Garber that there is an important realist aspect in Leibniz's philosophy of physics; but I do not see anything in the changes in his later thought about corporeal substance that requires him to give up much of that realism about physics.

The most obvious strand of realism, in this broader sense, in Leibniz's mature philosophy of body is the postulation of "infinite Monads," as he put it in his notes on Berkeley, and the "well-founding" of corporeal phenomena in their construction from those ultimately real monads.[10] Is there more than this strand of realism in the thought of Leibniz's middle years? In particular did he then see physics as studying anything that is more than a well-founded phenomenon? What would it be?

Not *inorganic* bodies. They are mere aggregates, and hence no more than well-

founded phenomena, in all of Leibniz's mature thought. What about *organic* bodies? Considered as not including its dominant monad, but uniting with it to form a corporeal substance, an organic body too is a mere aggregate (G IV,396/AG 252f.) and hence a well-founded phenomenon in all of Leibniz's mature thought, except perhaps where he is toying with the idea of substantial bonds. *Extension* and its modes are certainly studied by Leibnizian physics, but Garber agrees that it is already Leibniz's view in the middle years that they "include something of the imaginary" (DM 12). Even if corporeal substances are among the extended things for Leibniz, as Garber argues persuasively that they are, that will not lift extension out of the class of mere well-founded phenomena; for on Garber's account it is in respect of their organic bodies that the corporeal substances are extended, and the organic bodies themselves, as such, are mere well-founded phenomena, as I have just pointed out. Quite apart from the theory of corporeal substance, Leibnizian extension already has as strong a foundation in reality as the organic bodies, by being grounded in the repetition of the passive force of monads (p. 326f.).

Forces, Garber has stated, "are at the foundation of Leibniz's conception of what is real in the world."[11] I agree. The forces studied by physics are "relegated" by Leibniz "to the phenomena" (G II,275), but he regarded them nonetheless as *modifications* of the ultimately real primitive forces in monads. How this can be is a difficult question which I have discussed at length in my book (pp. 378-89), but I believe it is at least a major part of what makes forces the most real of physical properties for Leibniz—and that this source of reality is available to the monadology with or without corporeal substance. Indeed it had better be available apart from corporeal substance if it is to serve as a basis for realism about physics, for the forces most often measured by physicists belong to *inorganic* bodies, and hence not to corporeal substances as such.

No doubt *corporeal substances* themselves, if they are part of Leibniz's philosophy, are more than well-founded phenomena; and the way Leibniz writes about corporeal substance, both to Arnauld and to Des Bosses, suggests that he thought it would add in some way to the reality of bodies. It is not clear to me why this should be so in the philosophy of the middle years. The bodies as such, as distinct from the complete corporeal substances, remain phenomena. Why should they get more reality from being constituents of corporeal substances than from being founded in monads? But in any event the reality of corporeal substance seems of limited relevance to realism in physics, since corporeal substances as such are not what physics studies (LA 98). I remain unconvinced that corporeal substance makes more than a minor difference to the degree of realism of Leibniz's philosophy of

physics.

The topic of realism arises in a somewhat different way in Mugnai's review. I agree with him that "insofar as Leibniz believes in a world of monads existing independently of the knowing subject, he is a realist"; but I do not see a strongly contrasting way in which Leibniz "thinks that such a world is not accessible to us." Leibnizian monads are certainly antecedents of Kantian noumena, as Mugnai suggests, but there is a large disagreement between Leibniz and Kant regarding the knowability of things in themselves. Leibniz ascribes to us a much richer and more metaphysical self-knowledge than Kant will allow, and he explicitly treats this self-knowledge as a basis for knowledge of (monadic) substance in general. To be sure, our knowledge of *other* monads is mediated by our knowledge of their (phenomenal) bodies, but I do not see that Leibniz regards that as derogating from the reality of what we know in knowing what we do know about the other monads. And while I agree with Mugnai that the aggregation of monads is a feature of the phenomenal rather than of the monadic realm, I don't see how that dispenses Leibniz from the obligation of specifying a principle for determining the aggregation, since what he says about aggregation is very seriously meant as *true* regarding the phenomenal realm.

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[1]Unless otherwise identified, parenthetical page references in the present essay are to Robert Merrihew Adams, *Leibniz: Determinist, Theist, Idealist* (New York and Oxford: Oxford University Press, 1994). The works of Leibniz are referred to by the same abbreviations, and on the same principles, as in my book; I generally follow rather standard practice.

[2]Cf. David Blumenfeld, "Leibniz's Theory of the Striving Possibles," *Studia Leibnitiana,* 5 (1973): 163-77.

[3]The same document, however, contains a passage in which Leibniz says "The complete concept of an individual contains essential as well as existential [things]" (Gr 354)—implying that the class of "essential" properties of a thing is typically narrower than the class of those contained in its complete concept.

[4]Benson Mates, *The Philosophy of Leibniz: Metaphysics and Language* (New York: Oxford University Press, 1986), p. 140, n. 9. The words I have enclosed in brackets are not in the Latin text; they are correctly supplied by Mates.

[5]The substance of the following account is presented, in somewhat different terms, in my review of Robert C. Sleigh, Jr., *Leibniz and Arnauld: A Commentary on Their Correspondence* (New Haven: Yale University Press, 1990), forthcoming in *Noûs*.

The development of my views on this subject is largely due to reflection on Sleigh's book and on Carriero's work, to which I am very much indebted in my disagreement with him.

[6]This point is discussed more fully in my review of Sleigh's *Leibniz and Arnauld*, forthcoming in *Noûs*.

[7]One text from 1695 which can be read as expressing this analysis is G IV,491/AG 146.

[8]The harmony of a particular world-order may of course require some particular aggregates to remain forever united, but that will not be a consequence of the general principles of aggregation, as the natural indissolubility of corporeal substances is supposed by Leibniz to be a consequence of the general principles of unity of corporeal substances as such.

[9]This is well documented in Sleigh, *Leibniz and Arnauld*, pp. 101-9. Sleigh (p. 115) also relates Leibniz's treatment of corporeal substance to his interest in accommodating Roman Catholic theology.

[10]In this construction (as I have argued in my book, pp. 241-43) the bodies can be regarded as aggregates of monads, and the monads as elements (though not as parts) of the corporeal aggregates.

[11]Daniel Garber, "Leibniz and the Foundations of Physics: The Middle Years," in Kathleen Okruhlik and James Robert Brown, eds., *The Natural Philosophy of Leibniz* (Dordrecht: Reidel, 1985), p. 90.