Leibnizian Materialism*

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ABSTRACT: In this paper, I argue a position that has almost never been held: that Leibniz was a materialist. At the conclusion of my article, I consider whether the difficulty of reconciling Leibniz's materialism with other texts where he appears to be an idealist is best explained by Glenn Hartz's idea of "theory pluralism," concluding that there is instead a Leibnizian idea of "theory reconciliation" which does a better job.

RÉSUMÉ : Dans cet article, je défends la thèse insolite selon laquelle Leibniz était un matérialiste. Après avoir examiné, en conclusion, si la difficulté de réconcilier le matérialisme de Leibniz avec d'autres textes où il semble être idéaliste est bien expliquée par l'idée de «pluralisme des théories» de Glenn Hartz, je propose que l'idée leibnizienne de «réconciliation théorique» convient mieux à la situation.

I shall not be unique in arguing that Leibniz was some kind of materialist,[1] but I will be lonely. Bertrand Russell, in his *Critical Exposition of the Philosophy of Leibniz,* depicts him as going through an early materialist phase, but soon getting over it.[2] Margaret Wilson found Leibniz surprisingly sympathetic toward a materialist theory of mind, and was later supported in that view by Catherine Wilson.[2] Glenn Hartz finds that Leibniz illuminates materialism in his criticisms of it.[3] However, none of them go so far as to call him a materialist

* I shall refer to Leibniz's works by their page numbers in *Die philosophischen Schriften*, (Berlin, 1875-1890; reprint, ed. C. I. Gerhardt, 7 vols., Hildesheim, DE: Olms, 1972), abbreviated "GP."

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of any kind. The usual view, especially of the mature Leibniz, goes quite the other way. Donald Rutherford expresses it succinctly:

> Leibniz's late writings defend the thesis that, at the deepest level, the created world is composed solely of monads and their individual modifications. On this account material things do not form part of his fundamental ontology.[4]

An even stronger thesis is occasionally argued to the effect that the absence of material things from Leibniz's fundamental ontology is not merely a fact but a necessity.[5]

It is true that philosophers including Daniel Garber, Glenn Hartz, and Pauline Phemister have recently been successful in showing that Leibniz had a deeper commitment to bodies than Rutherford et al. let on, one that did not go away in his later philosophy.[6] I think of these philosophers as allies in what I want to argue here, though they might disagree because their work has a different emphasis. They have been challenging the idealistic view represented by the Rutherford passage above, and drawing attention to the mature Leibniz's realism about bodies. But once again none of them has considered Leibniz to be in any sense a materialist.

The word "materialist" acquired its philosophical meaning during the period of Leibniz's intellectual maturity and partly through his efforts to clarify it. It first came into use around the end of the seventeenth century[7] and Leibniz picked it up early. To judge by the Gerhardt edition of his philosophical works, still the largest fully searchable collection,[8] he applies the term to philosophers who held materialist views, rather than to the views themselves. Though I have found no occurrence of the abstract noun "materialism" in his writings,[9] I shall nevertheless use "materialism" here to describe what Leibniz means by wordy equivalents such as "the doctrine of the materialists" or "the sentiment of the materialists" (see, e.g., GP 6, 519).

There is a kind of materialism Leibniz rejects, the kind he attributes to Epicurus and Hobbes. In a response he wrote to some of Pierre Bayle's criticisms of the pre-established harmony, he refers to it as the "*mauvaise doctrine*" that the soul is material (GP 4, 559).

However, in the same place Leibniz reports without apparent disapproval how Epicurus and Hobbes have pushed all the way up to men what the Cartesians say about beasts, namely that they are only bodies or automata. It is unclear how Leibniz can be both critical of those who call the soul material and neutral about the claim that men are *only* bodies. But he puzzles the reader even further by conceding that "these materialists have indeed shown (*fait voir*) that whatever men accomplish with all their human reason is in the body no more than a play of images, passions and motions."[10]

One can't help wondering why Leibniz speaks so positively of something he calls a "*mauvaise doctrine*." This is one of the puzzles I would like to explore in the present paper. It will take us into the heart of both Leibniz's metaphysics and contemporary critical discussions of it.

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The same ambivalence about materialism turns up in other places. Leibniz tells Queen Sophie Charlotte, also in 1702, that the doctrine of the materialists threatens "to destroy along with intelligence and order not just the natural immortality of the soul but even the existence of the divinity." *Mauvaise doctrine* indeed! Yet Leibniz is quick to add that these dire consequences will come to pass only if materialism "gets out of hand" ("*si [cette doctrine] est poussée et outrée*," GP 6, 519). Which surely implies the existence of some acceptable, because moderate, form of materialism.

In another comment on Bayle, still from the year 1702, Leibniz gives an indication of what moderate, and thus acceptable, materialism would be like. It would be inspired by the Democriteans, he says. Now although Leibniz calls the Democriteans "pure materialists,"[11] he nevertheless says that everyone ought to imitate them "by making all the actions of bodies mechanical [and] independent of souls" ("*en rendant toutes les actions des corps machinales independantes des Ames*.")

Leibniz's use of the term "materialist" is new here, but not his endorsement of omitting all reference to souls in the explanation of the motions of bodies. More than two decades earlier (in 1680) Leibniz was already saying that physics committed no crime or impiety by confining itself to mechanical explanations of bodily actions.[12]

So when does materialism go too far? An easy conclusion to jump to would be that materialism is excessive when applied to souls, for they are "immaterial." Back in his comments on Bayle, Leibniz says something that looks a lot like this. He says that the proper way of treating the soul's thoughts is according to non-materialist principles, a method he labels as "formalism" (GP 4, 539f).

If Leibniz thinks materialism is for bodies and formalism for souls, you might think he was just recycling Cartesian dualism under his own labels. Descartes held that bodies should be explained by mechanical principles, while souls were of another nature altogether.[13] Is Leibniz merely using the terms "materialism" and "formalism" to make the same point? If so, we should expect formalism and materialism to be what explanations of soul and body were for Descartes: non-intersecting, but jointly exhaustive, accounts of the natural world.

But they aren't. What sets Leibniz apart from Descartes and muddies the apparently clear-cut distinction between materialism and formalism is that Leibniz thinks both types of explanation apply to everything in Nature. If they both apply to everything, then materialism applies to everything, including souls. Which is what caught the attention of Margaret Wilson and Catherine Wilson in the articles mentioned above.

The mistake Leibniz warns against, then, is not that of applying materialist explanations to the mind, but of thinking that either materialism or formalism logically excludes the other. As he tells a later correspondent, Nicolas Remond, Chief Council to the Duke of Orleans, in 1714,

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> The Formalists, such as Platonists and Aristotelians, are right to look for the origin of things in final and formal causes. But they are wrong to neglect efficient and material causes and to infer from their neglect that there are phenomena that cannot be explained mechanically. But on the other hand the Materialists, i.e., those who are attached solely to the Mechanical Philosophy, are wrong to reject Metaphysical considerations, and to wish to explain everything by what depends on the imagination.[14]

As I interpret him, Leibniz is saying that both materialist and formalist modes of explanation have unlimited scope within the natural world. An illustration from Leibniz's *Theodicy* can help to show what that means. There he criticizes Descartes's claim that our powerful conviction of freedom of the will is sufficient to demonstrate such freedom. "We cannot really sense our independence," Leibniz writes,

> and we are not always aware of the causes, often imperceptible, on which our decision depends. It is as if the magnetic needle took pleasure in pointing to the north, for it would believe it turned independently of any other cause, being unaware of the insensible movements of magnetic matter.[15]

Thus there are causes operating beneath the threshold of consciousness whose very existence we may never suspect. In the letter to Remond referred to earlier, Leibniz slides into the more familiar terms "mechanics" and "metaphysics" to make the same point. He tells Remond of his "insight into the harmony of those two realms," claiming to have seen that advocates of mechanistic and metaphysical explanation are both correct, "as long as they do not clash with one another."[16] But in describing how these two modes of explanation coexist he adds an important new dimension: "Everything happens mechanically and metaphysically at the same time *at the level of appearances*, but the source of mechanics lies in metaphysics"[17] (emphasis mine).

That complicates things. Now there are not just two types of explanation at issue, mechanical (or materialist) on the one hand and metaphysical (or formalist) on the other. Now there are also two *levels* of explanation. On the entry level, that of "appearances," materialist and formalist explanations apply simultaneously to everything, and both are legitimate. They explain the phenomena in different but complementary ways. As mentioned above, this is already a departure from Descartes's picture, in which each form of explanation has its own domain of objects (extension and thought respectively) and the two domains jointly account for all of creation. For Leibniz, appearances form one homogeneous domain, explicable both mechanically (or materialistically) and metaphysically (or formalistically).

But then he introduces this supplementary level of explanation, a second story, in both senses of the word "story." Leibniz doesn't name this upper level, but, since he contrasts it with appearances, it would be natural, traditional, and even in keeping with his own terminology in other places to call it "reality."[18]

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He would then be taken to mean that, whereas there is both a mechanical and a metaphysical side to appearances, metaphysics alone can tell us what is real.

I don't think that is what Leibniz means here, however. I do not take him to be saying that mechanics belongs only with appearances, while metaphysics explains both appearances and reality. Since Leibniz does not use the word "real" in this context, I shall resist attributing it to him. Instead, for the time being let us simply take note of the oddity of what he does say, namely that metaphysics is the "source" of mechanics. Given the equivalence of terms already noted, this means that metaphysics is the source of materialism as well.

Whether we are dealing with one consistent teaching in all these texts is not obvious at this point. Leibniz's position is many-layered and may well look confused. The handful of texts we have been exploring in which he uses the word "materialist" is not sufficient to provide a full understanding of what he means. On the other hand, to open the discussion to every text in which Leibniz comments on the difference between mechanism and metaphysics would be to drown in a sea of examples and a torrent of technical terms.

Luckily there is a middle way, suitable for a short discussion. It is offered by a little sequence of writings dedicated to showing exactly where materialism goes wrong or, in Leibniz's words, to showing "what is independent of the senses and matter" (GP 6, 499). These writings have the added attraction of having been composed in 1702, the year in which Leibniz frequently used the term "materialist" in its philosophical sense, and including one of its uses.[19] The late date of these writings also places them well into the period of Leibniz's philosophical maturity.[20]Lastly, by good luck, the outspoken Irish materialist John Toland played a role in calling these writings into being.[21]

Toland was not Leibniz's chief interlocutor, however. Nor was it any professional philosopher. The texts in question were written for Sophie Charlotte, Queen of Prussia: a philosophically skilled amateur – clever, objective, determined to understand, and a self-confessed "disciple" of Leibniz's.[22]

Sophie Charlotte was not the only one of Leibniz's correspondents to lack professional philosophical credentials, and some of these correspondences have little philosophical authority as a result.[23] But not this one. Sophie Charlotte's exchanges with Leibniz have been recognized as particularly useful because she herself is clear-headed and forces him to set aside technical terms so as to express himself with the utmost clarity and simplicity.[24]

Leibniz did not need Sophie Charlotte to tell him how important it is in philosophy to pay careful attention to ordinary usage.[25] But at the same time his facility with philosophical jargon, his encyclopedic learning, and his diplomatic disposition all pull him in the opposite direction. In correspondence with professional philosophers he often finds it expedient to express his thoughts in the preferred jargon of the correspondent. To scholastics he sounds scholastic and to Cartesians Cartesian,[26] creating some confusion for interpreters who try to make everything he writes fit together. But Sophie Charlotte, an outsider to

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the various schools, wants a plain unvarnished tale. Surely nothing but clarity can result when for once the challenge of making himself understood coincides with that of respecting common usage.

The stimulus to this sequence of writings from 1702 was a letter from an obscure source which Sophie Charlotte had asked Leibniz to look over sometime earlier in the year.[27] She wanted Leibniz's opinion about two matters touched on in the letter. First, she asked him whether there is anything in our thoughts that did not come from the senses. In the second place, but of first importance for present concerns, she asked whether Nature contains anything that is not material.

Leibniz's answer is a masterpiece of philosophical exposition. Drawing on psychology, epistemology, logic, physics, mathematics, and theology, but nevertheless confining himself as much as possible to layman's terms, Leibniz sets out the scope and limitations of materialism. I shall concentrate on a single lucid paragraph that takes us to the core of Leibniz's mature philosophy (GP 6, 506).

It begins by explaining the idea of matter which Leibniz and Sophie Charlotte have to that point taken for granted. They have conceived of it as purely passive and inert (*indifférent*). The only physical characteristics they have admitted in their concept of matter are those of extension (*étendue*) and impenetrability (*impénétrabilité*). If he were writing to a professional philosopher Leibniz could have evoked these characteristics simply by using the technical term "prime matter," drawn from Aristotelian and scholastic metaphysics.[28] But with Sophie Charlotte he avoids the technical term. Instead he names the characteristics of prime matter that will be crucial for the argument he is about to make against excessive materialism.

Matter conceived as extended, impenetrable, and inert is purely passive. It could therefore never acquire any form (*forme*) or commence any activity (*action*), unless prompted to do so by some agent. Therefore, since matter does take on particular forms and is active, immaterial things must also exist. In the same paragraph Leibniz points out that

> [w]hen we say there are immaterial substances we mean substances that involve other notions than can be explained by either extension or impenetrability, namely perception and the principle of action or change.[29]

Experienced readers of Leibniz will easily see the technical underpinnings of these non-technical explanations. In the *Monadology*, for example, a perception is the instantaneous representation of the universe which Leibniz thinks constitutes the mind of a monad at any given moment. He defines it as "the passing state which envelops and represents a multitude in a unity, or in the simple substance."[30]

What to Sophie Charlotte Leibniz calls a "principle of action or change" also appears in the *Monadology* and elsewhere under the names "Appetition" and

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"Appetite."[31] It is the principle internal to monads which explains why they advance from one perception to the next.

Leibniz tells one of his late correspondents, Louis Bourget, in 1714:

> As I define perception and appetite, all Monads have to be equipped with them. For perception is for me the representation of the many in the simple, and appetite is the tendency from one perception to another.[32]

By characterizing immaterial substances as perceiving agents, Leibniz is heading off misconceptions. He does not want Sophie Charlotte to think he means by an immaterial substance anything purely speculative, such as a ghost, or anything philosophically controversial, such as a disembodied Cartesian ego. Leibniz is arguing instead that the existence of immaterial beings is presupposed in the normal conditions of experience. But our normal experience involves bodies interacting with our body, bodies we perceive and some of which, at least, perceive us.[33] Leibniz points out that wherever there is perception or motion, there must also be immaterial beings. He also holds the converse: wherever there are immaterial beings, there will be perception and motion.[34]

A disciple like Sophie Charlotte might think Leibniz had already said enough to show that not everything is material. But Leibniz foresees how, if he stopped there, a sophisticated materialist could reply. He could accuse Leibniz of arguing against a straw man. It is easy to prove the existence of immaterial things, the materialist could say, if you take "matter" in such a narrow sense. But why should the materialist accept that narrow meaning? "Do we not commonly think of *ourselves* as material bodies?" he could ask, turning the tables on Leibniz. "And do we not believe that having perception and appetite is essential to us?"

That would be a nice dialectical move for the materialist to make. But Leibniz sees how to make an even nicer one and turn the tables back again. "If someone says that force and perception are essential to matter," Leibniz says, "he is taking matter to be a complete corporeal substance (*substance corporelle accomplie*)."

What does that mean? By a complete corporeal substance Leibniz means a body plus a substantial form (or soul). "Our body is matter," Leibniz tells Antoine Arnauld in 1687, "and the soul is the form of our substance." Then he adds, "The same holds true of other corporeal substances" (GP 2, 119).

Thus, as long as "matter" means not primary matter but secondary or *informed* matter, then every natural substance is material. That accounts for Leibniz's ambivalence about materialism, which earlier seemed so strange. If the materialist means that Nature contains nothing but secondary matter, Leibniz can agree.[35] Materialism of this kind does not exclude souls. It merely understands them properly as the forms which bodies take. Or to put the same point in a more exciting way: Souls are the forms which take bodies, and make them active.

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Leibniz began this neat dialectical pirouette with the hypothesis, "[I]f someone says that force and perception are essential to matter. …" The word "force" was unexpected there. He had just been talking about perception and *appetite*, or "the principle of action and change," and we would have expected him to stick with those terms. But in Leibniz's thought force and appetite are closely related, as he explains in his "*Nouveau système*" (1695). There he says that the nature of substantial forms "consists in force and that thence follows something analogous to sensation and appetite."[36]

Force is the key concept of Leibnizian dynamics. But its dynamical characteristics are not at issue here. Our concern is only with the way in which the concept of force excludes one sort of materialism and motivates another. "By force or power," Leibniz writes in the draft of his "New System" (1695) (GP 4, 472),

> I mean a mid-point between power and action, which includes an effort, an activity (*acte*), an entelechy, because force translates into action of its own accord unless something hinders it from doing so. That is why I consider it to be what is constitutive of substance, being the origin of action, which is [a substance's] character.[37]

Leibniz calls down a hailstorm of differently related terms in an effort to clarify the semantic reach of his new idea of *force*. We must think of it in terms of "power," "action," "effort," "activity," "entelechy," "character," and, he would also add, of "substantial form," "appetite," and "sensation" (sentiment) (GP 4, 479).

After so bewildering a range of meanings, his simple way of putting it to Sophie Charlotte is welcome. To her Leibniz equates force with the soul and explains how souls fit with materialism. Leibniz's surprising assertion is that souls fit very well with materialism. They are nothing outside of matter, though they involve something more than matter.[38] Soul is what transforms primary matter into secondary matter.

And yet soul is wholly dependent on matter, as we see when John Toland enters the discussion. Sophie Charlotte showed Leibniz's letter to Toland, including the expository paragraph to which I have been paying such close attention. But she mischievously withheld the name of the author. Had he known that Leibniz wrote that letter, Toland would likely have hesitated to accuse him of the gross error of thinking that because the senses are insufficient for reasoning they must also be unnecessary.[39]

When Leibniz learns of Toland's charge, he is quick to point out the misunderstanding. He is far from denying the dependence of souls on bodies and their senses, Leibniz says. He agrees with Toland that souls can neither think without the senses nor exist without the body.[40]Though in his technical writings Leibniz allows that God could, by a miracle, preserve a disembodied soul in existence, [41] he does not go into that arcane possibility here.

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What Leibniz endorses in this exchange with Sophie Charlotte, partly in response to Toland, is a moderate form of materialism. He does not deny the existence of souls, or say they are made of matter. That is the "*mauvaise doctrine*" he rejects. But he holds the presence of souls to be detectable only through the activities of bodies, whose reality they metaphysically presuppose and guarantee, just as physical forces are detected only through their effects.

A soul and a body together form what Leibniz calls "an animal." He tells Sophie Charlotte that these animals are the basis of all that exist and that they are never destroyed.[42] Every natural being then is material.

There is one incorporeal being, namely God.[43] But he transcends Nature. He is "the ultimate reason for all things" (GP 6, 507). God is the explanation that is conceptually prior to the things explained. The moderate materialism Leibniz defends is therefore one in which all Nature is material and God alone is not. *This* is what I think he means when he says that mechanism can explain everything in Nature, but that the source of mechanism lies in metaphysics.

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At the beginning of this paper I alluded to the existence of much secondary literature arguing that Leibniz's ontology contains only *immaterial* things. The linear progress I have made to the opposite conclusion has been possible only by ignoring all that literature, together with the daunting number of places in which Leibniz supplies the ammunition for his idealist interpreters. What happens if you take the other side into consideration?

Glenn Hartz devoted an amusing and instructive article to that question. In it he considered the rival possibilities of Leibniz's having been either exclusively idealistic or exclusively committed to the existence of corporeal substances. Finding neither of these to be tenable, he concluded that "Leibniz never managed to choose between them, and neither will any successful interpretation."[44] That was in 1998.

In his 2007 book Hartz still insists on Leibniz's unresolvable allegiance to both realism and idealism, but he offers an imaginative way of dealing with it. We could treat it in the light of what Hartz calls "theory pluralism." The fundamental advantage of theory pluralism is that it makes a clear distinction between explanation and truth. Leibniz would have been a theory pluralist about realism and idealism to the extent that he affirmed both as *explanations* of the world, without affirming either as *true*. We are to imagine Leibniz treating both realism and idealism in the same way we would normally treat Ptolemaic astronomy. We don't deny it can accurately predict eclipses and the phases of the moon, but those successes don't tempt us to think it a true description of heavenly motions.

Although Hartz recommends theory pluralism as the best way of accommodating the greatest number of Leibniz's divergent claims, he is far from advocating it on its own account. Indeed he says he can't imagine holding such a

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view himself.[45]It is just that to attribute either exclusive realism or exclusive idealism to Leibniz leaves too many texts out of consideration, and to attribute both to him makes him inconsistent.

Hartz is candid about the shortcomings of theory pluralism. For one thing it is itself inconsistent with the many passages in which Leibniz claims that idealism or realism are *true*.[46] For another it offers no explanation of the way Leibniz "so regularly and inextricably interfused Idealism with Realism."[47] So in the end Hartz proposes theory pluralism neither as anything he (Hartz) could believe nor as anything Leibniz could have intended, but only as, under the circumstances, "the most fruitful way to *interpret* his writings"[48] (emphasis Hartz's). Therefore we are not to confuse our interpretation of Leibniz with Leibniz's interpretation of himself.

Theory pluralism is a hard doctrine. I would be happier with it if, like Hartz, I were convinced it really was the last resort. But I'm not convinced and would like to close by pointing out how the texts on materialism discussed here allow for a more congenial possibility.

When Leibniz discusses materialism he speaks as a realist. He is a realist about bodies. And he explicitly contrasts materialism with idealism, to which he is also committed. So the present texts furnish an instance of the kind of problem for which theory pluralism is supposed to be the best solution.

Hartz provides no argument for considering realism and idealism as *theories,* but I think it is all right to do so. Leibniz doesn't call them that, but he does call them "hypotheses" (see GP 4, 560, quoted below), and on at least some occasions he regards hypotheses and theories as equivalent.[49] And as we have already seen, when discussing materialism and formalism, Leibniz is fully aware that the two theories take different approaches to the world, so different that they may appear to be contradictory.

As Hartz concedes, Leibniz does not propose anything like theory-pluralism as a method of handling the apparent contradiction between idealism and materialism. But neither does he treat their relationship as an open question. He proposes instead the inclusion of both realism and idealism within a larger hypothesis, that of pre-established harmony (henceforward PEH). In fact Leibniz considers PEH to be "something more than a hypothesis,"[50] by which I take him to mean that he considers it to be true. Let us see how PEH resolves the apparent contradiction between realism and idealism about bodies.

Leibniz reminds Pierre Bayle that pre-established harmony makes two central claims: first, that the soul does not modify the dispositions of the body, and second, that the body does not influence the soul. The first claim, Leibniz says, is proven by "the good and solid part of the [otherwise] false and nasty doctrine of Epicurus."[51] In other words, the claim that souls do not directly affect bodies is proven by the truth of moderate materialism, materialism purged of its false and nasty parts. So understood, materialism

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is as much an integral part of the mature doctrine of the pre-established harmony as idealism is:

> Pre-established harmony makes a good interpreter (*truchement*) of both claims. It shows that what is good about both the hypotheses of Epicurus and of Plato, of the greatest Materialists and the greatest Idealists, comes together here.[52]

What is good about the theory of the materialists, as we have already seen, is that the soul is nothing in the body over and above its operations. What is good about the theory of the idealists, Leibniz tells Bayle, is that it allows for the body to have an "entelechy," a program, so to speak, powerful enough to equip a body to respond spontaneously to the infinite contingencies of its environment.[53] But beyond its perfect correspondence to its environment, a body shows no other sign of being ensouled:

> Everything happens in the body, as regards the detail of the phenomena, as if the evil doctrine of Epicurus and Hobbes were true, or as if a man were nothing but a body, or an Automaton.[54]

So what is Leibniz claiming about the pre-established harmony? First, he says that within it robust and philosophically traditional understandings of both soul and body can be used for explanatory purposes. That is something like theory pluralism. But Leibniz goes further. He also says that within the pre-established harmony the differing assertions that are made on behalf of bodies and souls can be reconciled and seen to be simultaneously true. The basis of reconciliation will depend on accepting souls as something more than bodies, though detectable only in bodily behaviour. That goes beyond theory pluralism, which does not look for such reconciliations and allows for explanations that are not true.

This particular discussion of materialism and idealism is of course a favourable case for illustrating the sort of reconciliation I am discussing. Other cases would be favourable to Hartz's idea of theory pluralism. For instance, Leibniz seems to think that something like theory pluralism might be called for in medical science, if only as a temporary expedient.[55]

But even if the sciences in practice have to put up with theory pluralism more often than they achieve theory-reconciliation, the latter is still Leibniz's ideal. Reconciliation is the broader strategy to which Leibniz had a lifelong commitment and it is not compatible with theory pluralism. Throughout his career Leibniz deplored the disunity of the sciences and the chaos they introduce into the search for truth.[56] That chaos motivated the philosopher's lifelong search for a general science and a universal language in which the theorems of that science could be univocally expressed.[57]

It is true he found neither the science nor its language. In their absence Leibniz recognized that we have to live with conflicts. But the way he conceived of

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living with them is, I think, quite different from theory pluralism. There will be space for only the barest sketch of it here.

Suppose there is a sentence, S, that is deliberately affirmed as a central doctrine in one science, though its negation is a central doctrine in another. S and not-S are obviously contradictory. Nevertheless, the conjunction "S is affirmed by science 1 and not-S is affirmed by science 2" is not contradictory. If we know that the sciences and their technical vocabularies have no common dictionary and no common method of proceeding, it would be hasty to conclude that such apparent contradictions are necessarily genuine ones.

Apparent contradictions might arise in the sciences as they do in different possible worlds, the same sentence being true in one possible world and false in another, yet without contradiction. The existence of such apparent contradictions among the sciences would not be surprising, if the languages of science are as different as Leibniz supposed.

S and not-S would constitute a real contradiction only if they figured as contradictories in the general science; that is, if they were expressed in the universal language in which the findings of all the particular sciences are given their canonical expression. In that language every apparent contradiction would also be a real one. However, according to Leibniz there is at present no such general science and no such universal language. His ambition to discover them never bore fruit. For the time being, therefore, the best way to deal with apparent contradictions between the sciences is to try to integrate lower-order theories into higher ones, as we saw him integrate materialism and idealism into the pre-established harmony. And if they can be integrated, then the theorems of the larger theory have a greater claim to be received than they had when they were part of the smaller theories.

This is an alternative that Hartz's critique of compatibilism does not appear to exclude, and which therefore merits further exploration. If there is anything to this alternative then it may be possible after all to maintain that Leibniz was a materialist, without having to deny that he was an idealist and without having to say that he was a theory pluralist either.

Notes

1 Though according to Kurt Müller (*Leibniz-Bibliographie* [Frankfurt: Klostermann, 1967], 291, entry #2267), a certain Denesle argued that he was one in his *Examen du matérialisme*, vol. 1.2 (Paris: de Vincent, 1754), 254–65.

2 Bertrand Russell, *A Critical Exposition of the Philosophy of Leibniz* (1900; reprint London: George Allen and Unwin, 1975), 70f.

3 Margaret Wilson, "Leibniz and Materialism," *Canadian Journal of Philosophy* 3.4 (1974): 495–513; Catherine Wilson, "Constancy, Emergence and Illusions: Obstacles to a Naturalistic Theory of Vision," in *Causation in Early Modern Philosophy*, ed. Steven Nadler (University Park PA: Pennsylvanian University Press, 1993), 159–77, esp. 172f.

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4 Glenn Hartz, "Launching a Materialist Ontology: The Leibnizian Way," *History of Philosophy Quarterly* 1.3 (1984): 315–32. Despite the misleading title, this article is about Leibniz's critiques of materialism.

5 Donald Rutherford, "Metaphysics: The Later Period," in *The Cambridge Companion to Leibniz*, ed. Nicholas Jolley (Cambridge: Cambridge University Press, 1995), 124–75, citation from p.143. R. M. Adams takes a similar position in his influential *Leibniz*: *Determinist, Theist, Idealist* (New York, Oxford: Oxford University Press, 1994). I argued for it myself in "Monadic Relations," in *The Natural Philosophy of Leibniz*, ed. K. Okruhlik and J. R. Brown (Dordrecht, NL: Reidel, 1985), 151–70.

6 See e.g., Geoffrey Sayre-McCord, "Leibniz, Materialism and the Relational Account of Space and Time," *Studia Leibnitiana* 16.2 (1984): 204–11.

7 Garber, in a host of articles beginning with "Leibniz and the Foundations of Physics: The Middle Years," in *The Natural Philosophy of Leibniz*, ed. Kathleen Okruhlik and James Robert Brown (Dordrecht, NL: Reidel, 1995), 27–130, through to "Leibniz and Idealism," in *Leibniz: Nature and Freedom*, ed. Donald Rutherford and J. A. Cover (Oxford: Oxford University Press, 2005), 95–107 and also a forthcoming book on the subject. But also see Glenn Hartz, "Why Corporeal Substances Keep Popping Up in Leibniz's Later Philosophy," *British Journal of the History of Philosophy* (1998): 193–207 and *Leibniz's Final System: Monads, Matter and Animals* (London and New York: Routledge, 2007). Also Pauline Phemister, *Leibniz and the Natural World: Activity, Passivity and Corporeal Substances in Leibniz's Philosophy* (Dordrecht, NL: Springer, 2005).

8 Conceptual historians Rudolphe Eucken (*Geistige Strömungen der Gegenwart* [Leipzig: Veit, 1909], 175, n.1) and André Lalande (*Vocabulaire technique et critique de la philosophie* [Paris: Presses universitaires de France, 1973], entry "*Matérialisme*") say the term was coined by Robert Boyle in 1674. But the OED (entry "materialist") shows it to have been used six years earlier by Henry More.

9 GP is fully searchable with the *Leibniz Lexicon: A Dual Concordance to Leibniz's philosophische Schriften*, ed. Reinhard Finster, et al. (Hildesheim, DE: Olms, 1988).

10 Though the *Trésor de la langue française* (article "*matérialisme*") claims he coined it. But the term does not occur in the text they cite. "*Matérialiste*" occurs there, but no definition resembling the one they attribute to Leibniz is found there nor anywhere else, at least in the Gerhardt collection. And since the *TLF* attributes exactly the same words to the seventeenth-century libertine Bonaventure de Fourcroy in the article "*matérialiste*," the Leibniz attribution is almost certainly an error.

11 GP 4, 559: " … , *ces Materialistes ayant fait voir en effect que rien ne se fait par l'homme avec toute sa raison, que dans le corps ne soit un jeu d'images, de passions et de mouvemens.*"

12 GP 4, 540: " … *les purs materialistes comme les Democriticiens …"*

13 GP 4, 285 (1680): "*Car de vouloir tour expliquer Mechaniquement en Physique, ce n'est pas un crime ny impieté …* "

14 Though he admits soul and body are in fact more intimately involved with one another than such a strict separation implies, Descartes nevertheless recommends

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treating material things separately for purposes of explanation. If we do so, "*leur nature est bien plus aysée a coceuoir*" (*Discours de la méthode*, part 5 = AT 6, 45).

15 GP 3, 607: "*Les Formalistes, comme les Platoniciens et les Aristoteliciens ont raison de chercher la source des choses dans les causes finales et formelles. Mais ils ont tort de negliger les efficientes et les materielles, et d'en inferer … qu'il y a des phenomenes qui ne peuvent être expliqués mechaniquement. Mais de l'autre coté les Materialistes, ou ceux qui s'attachent uniquement à la Philosophie Mechanique, ont tort de rejetter les considerations Metaphysiques, et de vouloir tout expliquer par ce qui dépend de l'imagination.*" I take Leibniz to mean that the materialists are wrong to explain everything "only" by what depends on the imagination, i.e., by material and efficient causes alone. This interpretation puts the objection to materialists on the same footing with the parallel objection to formalists and also corresponds to his established doctrine, that "*tout se fait mécaniquement*." See GP 3, 607.

16 *Théodicée*, I, §50: "*Nous ne pouvons pas sentir proprement notre indépendance, et nous ne nous apercevons pas toujours des causes, souvent imperceptibles, dont notre résolution dépend. C'est comme si l'aiguille aimantée prenait plaisir de se tourner vers le nord; car elle croirait tourner indépendamment de toute autre cause, ne s'apercevant pas des mouvements insensibles de la matière magnétique*."

17 GP 3, 607: "*Je me flatte d'avoir penetré l'Harmonie des differens regnes, et d'avoir vû que les deux partis ont raison, pourveu qu'ils ne se choquent point*."

18 GP 3, 607: "*[T]out se fait mechaniquement et metaphysiquement en même temps dans les phenomenes de la nature, mais … la source de la Mecanique est dans la Metaphysique*."

19 Leibniz contrasts "*l'apparent*" with "*réalité*" at GP 2, 97 and "*phaenomena*" with "*realitas*" at GP 2, 270.

20 GP 6, 519, already cited above.

21 Which scholars usually reckon to begin in 1686, when Leibniz was forty. See, e.g., Bertrand Russell, *A Critical Exposition of the Philosophy of Leibniz* (n. 3), 7. Dan Garber thinks that Leibniz's idealistic phase begins a couple of years after 1702 (see "Leibniz and the Foundations" [n. 8] 73), but even if true that will not affect the compatibilism I shall be arguing for.

22 Through Leibniz's influence, John Toland's materialism eventually grew sophisticated and was quite influential. See F. M. Heinemann's still quite useful study of it, "Toland and Leibniz," *The Philosophical Review* 54.5 (1945): 437–57. But in 1702 his grasp of materialism was still quite crude.

23 For a good discussion of Leibinz's relation to Sophie Charlotte, see E. J. Aiton, *Leibniz: A Biography* (Bristol and Boston: Adam Hilger, 1985), 255–65. For her "discipleship"see p. 255.

24 His lengthy correspondence with Ernst, Landgrave of Hessen-Rheinfels would be a good example.

25 See, e.g., C. I. Gerhardt's remarks to this effect, GP 7, 538f. John Toland remarks on her "almost infinite reading and knowledge of the most abstruse problems of philosophy" (F. H. Heinemann's paraphrase in "Toland and Leibniz," *The Philosophical Review* 54.5[1945]: 441).

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26 As he tells his correspondent Burcher de Volder, GP 2, 232: "*[M]ihi animus est notionem quaerere quae conveniat caeteris quoque et hominum usui consentiat*."

27 As Leibniz confesses, for example, to Remond (1714), GP 3, 624. A brief discussion of this practice of Leibniz's and the difficulty it creates is found in Pauline Phemister, *Leibniz and the Natural World: Activity, Passivity and Corporeal Substances in Leibniz's Philosophy* (Dordrecht, NL: Springer, 2005), 14ff.

28 GP 6, 499. Aiton (n. 24) p. 261 indicates what little is known of the letter.

29 As he often does throughout his career. See, e.g., GP 1, 17 (1668) and GP 2, 371 (1709). Perhaps the meaning he attaches to the term derives more directly from Aristotle than from St. Thomas. See Christopher Byrne's learned discussion of this point in "Prime Matter and Actuality," *Journal of the History of Philosophy* 33.2 (1995): 197–223.

30 GP 6, 506: "*[Q]uand on dit qu'il y a des substances immaterielles, on veut dire par là qu'il y a des substances qui renferment d'autres notions, savoir la perception et le principe de l'action ou du changement, qu'on ne sauroit expliquer ny par l'étendue ny par l'impenetrabilité.*"

31 *Monadologie*, §14: "*L'état passager, qui enveloppe et représente une multitude dans l'unité ou dans la substance simple, n'est autre chose que ce qu'on appelle la Perception …* "

32 *Monadologie* §15: "*L'action du principe interne qui fait le changement ou le passage d'une perception à une autre, peut être appelé Appétition … l'appétit …* ."

33 GP 3, 575: "*De la maniere que je definis perception et appetit, il faut que toutes les Monades en soyent douées. Car perception m'est la representation de la multitude dans le simple; et l'appetit est la tendence d'une perception à une autre.*"

34 Leibniz argues that every being is a perceiver, but he realizes that this is not how it seems. Locke reflects common sense in saying that perception "seems to me to be that, which *puts the distinction betwixt the animal Kingdom, and the inferior parts of Nature*" (*Essay Concerning Human Understanding*, ed. P. Nidditch, book 2, chap. 9, §11) (italics in original). Leibniz replies in the *Nouveaux essais*, book 2, chap. 9, §11, " … qu'il y a quelque perception … encor dans les plantes. … " For a general study of perception in Leibniz see R. F. McRae, *Leibniz: Perception, Apperception and Thought* (Toronto: University of Toronto Press, 1976).

35 "*Ainsi, si quand on dit qu'il y a des substances immaterielles, on veut dire par là qu'il y a des substances qui renferment d'autres notions, savoir la perception et le principe de l'action ou du changement*" (GP 6, 506).

36 *Monadologie*, §72 "*[I]l n'y a pas … des* Ames *tout à fait* séparées *[des corps], ni d' [Anges] sans corps*."

37 GP 4, 479 (1695): "*[Q]ue leur nature consiste dans la force, et que de cela s'ensuit quelque chose d'analogique au sentiment et à l'appetit*."

38 GP 4, 472: "*[J]'entends un milieu entre le pouvoir et l'action, qui enveloppe un effort, un acte, une entelechie, car la force passe d'elle même à l'action en tant que rien ne l'empeche. C'est pourquoy je la considere comme le constitutif de la substance, estant le principe de l'action, qui en est le caractere.*"

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39 GP 6, 506: "*Car on ne veut point que ces ames soyent hors de la matiere, mais seulement qu'elles sont quelque chose de plus que la matiere.*"

40 See GP 6, 509, §3. Toland writes: "*Il ne s'agit pas de sçavoir si pour penser et pour raisonner, nous avons besoin de quelque autre chose que des choses sensibles. ... Mais il s'agit de sçavoir, s'il y a d'autres choses que les choses sensibles qui determinent cette faculté à agir.*"

41 GP 6, 514f: "*Je ne nie point ... que nous avons besoin des organces des sens pour avoir nos pensées. ... 'l'ame ... ne peut jamais manquer d'organes plus ou moins expressifs.*"

42 Pauline Phemister argues plausibly that this is presented merely as a logical possibility. See Phemister (n. 8), 38.

43 GP 6, 514: "*[J]e tiens que non seulement l'ame, mais encor l'animal se conserve.*"

44 *Monadologie*, §72: "*Dieu seul est détaché [des corps] entièrement.*"

45 Hartz, "Why Corporeal Substances (n. 8)," 207. Glenn A. Hartz, Leibniz's Final System: Monads, Matter, and Animals (Oxford: Routledge, 2007), 197.

46 Ibid., 21.

47 Ibid., 197.

48 Ibid., 25.

49 GP 6, 560: "*... theorie ou hypothese, qui a besoin de preuve, ...*"

50 "*Nouveau système*," GP 4, 486: " … *cette Hypothèse ... quelque chose de plus qu'une Hypothese.* "

51 GP 4, 560: " *... ce qu'il y a de bon et de solide dans la fausse et mechante doctrine d'Epicure.*"

52 GP 4, 560: "*[L]'Harmonie pre-etablie estant un bon truchement de part et d'autre. Ce qui fait voir que ce qu'il y a de bon dans les hypotheses d'Epicure et de Platon, des plus grands Materialistes et des plus grands Idealistes, se reunit icy.*"

53 GP 4, 558: "*J'avoue que la spontaneité n'est pas proprement dans la masse. ... C'est donc proprement dans l'Entelechie.*"

54 GP 4, 559: "*[T]out se fait dans le corps, à l'egard du detail des phenomenes, comme si la mauvaise doctrine de deux qui croyent que l'âme est materielle suivant Epicure et Hobbes, estoit veritable; ou comme si l'homme même n'estoit que corps, ou quAutomate.*"

55 See Leibniz to Conring, 1677, GP 1, 182: "*Fateor quidem in illis, ubi nulla spes est longius progrediendi, necessario sufficere debere Hypotheses, quia unius effectus variaqe sunt causae possibiles, sed ubi nobis permissum est ulteriora experimenta sumere, quibus ex variis hypothesibus discerni possint verae a falsis ... ibi non recte in Hypothesi sistitur.*"

56 See, e.g., Leibniz: *Opuscules et fragments inédits*, ed. Louis Couturat (Paris: 1903; reprint Hildesheim, DE: Olms, 1966), 214: "*Mihi si dicendom quod res est statum humanae cognitionis consideranti in mentem venit imago exercitus, in fugam conjecti ... tabernae amplissimae, omnigena mercium varietate instructae, sed plane eversae et perturbatae, omnibus inter se confusis*."

57 For a still useful discussion with copious references see Louis Couturat, *La logique de Leibniz* (Paris:1901; reprint Hildesheim, DE: Olms, 1961), esp. chaps. 3–6.

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