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Leibniz as Idealist

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Leibniz has long been held to be an idealist.ⁱ Minimally, this involves the claim that, in his late writings at least, Leibniz's fundamental ontology—his inventory of the ultimately real, independently existing things—is limited to mind-like, simple substances, or monads. This fixes one meaning of the term 'idealism', and considerable evidence confirms that in his late writings Leibniz is, in this sense, an idealist.ⁱⁱ I will call this position 'substance idealism': the view that the only things that meet the strictest conditions on being a substance are unextended, mind-like entities.

As it stands, this way of framing the commitments of an idealist metaphysics is incomplete, for it leaves undefined the ontological status of actual or concrete matter.ⁱⁱⁱ In its usual signification, 'idealism' designates a position according to which matter lacks a mind-independent reality; it exists only as an object of perception or thought. Thus, idealism is defined not simply in terms of what kinds of things are ontologically most basic—minds or other mental entities (ideas, forms, etc.)—but also in terms of the relation of those things to matter. Broadly speaking, for the idealist, material things exist only as appearances, ideas, or the contents of mental representations. In order to distinguish this position from substance idealism, I will refer to it as 'matter idealism'.

It is commonly assumed that if Leibniz is a substance idealist, he must also be a matter idealist. He must, in other words, hold that material things are merely the contents of mental representations. Conversely, if Leibniz is a realist about matter, he can be so only in virtue of believing that there exist real *corporeal substances*: living bodies that qualify as substances in their own right.^{iv} Since the weight of evidence suggests that the late Leibniz does not believe this, it is inferred that his idealism extends to the claim that material things are merely appearances or ‘phenomena’.

I accept that in his late writings Leibniz is a substance idealist. I argue, however, that he is best read as also affirming an unusual form of matter realism. On the account I defend, Leibniz is a matter realist, because he holds that the constitutive stuff of bodies—matter—consists of monads. Since monads themselves are mind-like entities, Leibniz is nominally committed to the position that matter has a mind-dependent existence: matter exists only in virtue of the prior existence of mind-like substances. Nevertheless, Leibniz does not believe that matter exists only insofar as it is perceived or otherwise apprehended by some mind. On the contrary, matter is real because it is constituted from *per se* real beings that also happen to be mind-like substances. In what follows, I aim to establish two main points. First, in Leibniz’s philosophy, matter realism is best understood as a thesis about the essence of matter, conceived as an inherently plural mass, from which bodies are composed. Second, Leibniz’s matter realism is consistent with a variety of other claims he makes about material things, including that bodies are ‘aggregates of monads’ and phenomena that ‘result’ from monads.

1. Four Accounts of the Reality of Matter

Leibniz's late writings offer evidence of at least four accounts of the reality of matter, each of which is consistent with the thesis of substance idealism. Three of these can be construed as species of matter idealism; the fourth, I will argue, cannot. A full interpretation of Leibniz's metaphysics must tackle the question of whether these four accounts can be rendered consistent with each other, and whether any should be given priority over the others. I will return to this question in the final section of this essay. To begin, my goal is the more limited one of laying out the range of views about the ontological status of matter that are supported by Leibniz's texts and are consistent with his commitment to substance idealism.

The first and most familiar of Leibniz's explanations of matter is the one that comes closest to Berkeley's idealism. I will call it 'phenomenalism'. In the present context, this can be understood as the view that material things have no reality over and above that which they possess as the contents of the harmonious perceptions of created monads.^v Leibniz suggests this position in a well-known passage from a 1704 letter to De Volder:

[C]onsidering the matter carefully, we should say that there is nothing in things except simple substances, and in them perception and appetite; but matter and motion are not so much substances or things as the phenomena of perceivers, the reality of which is located in the harmony of perceivers with themselves (at different times) and with other perceivers. (GP II 270/AG 181)^{vi}

The metaphysical thesis that material things and their properties are phenomena, whose reality consists in the agreement among the perceptions of monads, should be distinguished from the epistemological thesis that lawfulness and intersubjective agreement are reliable marks of the reality of corporeal phenomena. The latter is a claim that Leibniz often makes, but it is

consistent with his believing that material things have a reality over and above that which they possess as the contents of harmonious perceptions.^{vii} Nevertheless, the above passage shows that Leibniz does sometimes appeal to phenomenalism as an account of the reality of matter.^{viii} Given his prior commitment to substance idealism, this is unsurprising: if the only things that are ultimately real are mind-like substances, together with their perceptions and appetitions, then the most parsimonious explanation of material things is to say that they are nothing more than the contents of harmonious perceptions. Since Leibniz, in general, is a proponent of ontological parsimony, there is much to be said for this reading.

A perennial objection to phenomenalist theories, however, is that they give insufficient weight to our pretheoretical beliefs about the objective existence of bodies. When we assert that a given body—say, the tree in the quad—exists, we take ourselves to be making a claim that is true or false independently of the actual or possible experience of any human perceivers. The difference between merely agreeing with others in our perceptual judgments (which is consistent with our collective delusion) and perceiving veridically shows that the latter requires an objective reference, the successful tracking of which is a condition for the truth of our judgments. For us to perceive veridically the tree in the quad, the tree must have some reality over and above its being the content of our harmonious perceptions of a tree.

While Leibniz explicitly rejects the naïve realist position that veridical perception of a tree presupposes the existence of a *tree*, an extramental material substance, there are indications that he is sensitive to the objectivity objection. To make sense of perceivers apprehending even the same phenomenal object, which they represent differently given their differences in spatial perspective and perceptual acuity, there must be some objective reference for their perceptions—

a standard according to which they may be judged to have perceived the same thing as other perceivers in relevantly different circumstances. An elaboration of the phenomenalist position, call it ‘divine phenomenalism’, allows Leibniz to accommodate this requirement. According to divine phenomenalism, bodies are to be identified not with the phenomena perceived by individual created monads, but with the phenomena apprehended by God.^{ix} In notes composed during his correspondence with Des Bosses, Leibniz writes:

If bodies are phenomena, and are judged by our appearances, they will not be real, since they will appear differently to others. Thus, the reality of bodies, of space, motion and time seems to consist in this: that they are the phenomena of God, that is, the object of his knowledge of vision [*scientia visionis*]. . . . God certainly sees things exactly such as they are according to geometrical truth, although likewise he also knows how each thing appears to every other, and thus he contains in himself eminently all the other appearances. (GP II 438/AG 199)^x

The ‘true phenomena’ apprehended by God are an ideal representation of a spatiotemporal world of bodies, which is the archetype for the phenomena perceived confusedly and perspectively by created monads. In this way, Leibniz is able to offer a fuller account of the objectivity of statements about the existence of bodies while still holding that bodies are nothing more than phenomena, or the contents of mental representations.

Although meeting the desideratum of ontological parsimony, neither of the preceding versions of phenomenalism acknowledges a further important set of claims that Leibniz makes about the reality of matter. Throughout his late writings, he also asserts that bodies are ‘aggregates’ or ‘results’ of monads,^{xi} and that monads are everywhere ‘in’ matter.^{xii} On the face

of it, these texts point to a more robust conception of the reality of matter, according to which bodies are not merely the contents of mental representations, but in some sense are to be identified with monads themselves, or with aggregates of monads. The most common way to interpret these claims is that monads lend reality to corporeal phenomena by being the external ground of other monads' veridical perceptions. To say that a body is an 'aggregate of monads', or that monads are 'in' matter, is just to say that the monads in question are represented by other monads as an extended material thing.^{xiii}

By picking out certain subclasses of monads as the external grounds of veridical perceptions of bodies, this account—call it, following Adams, 'qualified realism'—appears to move Leibniz closer to the view that material things have a kind of extramental reality that they inherit from monads. In fact, I will argue, this 'qualified realism' is merely a more complicated form of matter idealism. This is so, because the 'well-foundedness' of corporeal phenomena, or their being grounded in monads, is fully explained in terms of relations of harmony that obtain between the contents of one monad's perceptions and the perceptions of a privileged subclass of other monads. Accordingly, such an account fails to show that matter as such acquires derivatively the reality of monads, or that it is anything more than the content of monadic perceptions.^{xiv}

Leibniz's texts, however, also support a stronger reading of the claim that monads are everywhere 'in' matter—an account that is plausibly construed as a species of matter realism. On this account, in contrast to the preceding one, matter has a mind-independent reality, because it is, ultimately and properly speaking, *monads*, or simple *substances*—and not merely the

content of their perceptions. The opening sections of Leibniz's most famous metaphysical essay place the view squarely before us:

The monad, of which we shall speak here, is nothing but a simple substance that enters into composites—simple, that is, without parts. And there must be simple substances, since there are composites; for a composite is nothing but a mass [*amas*], or *aggregate*, of simples.... And these monads are the true atoms of nature and, in a word, the elements of things. (GP VI 607/AG 213)

The *Monadology* does not explain composite, or material, being in terms of the perceptions of monads; rather, it describes a composite as a 'mass' or 'aggregate' of monads, which are the 'true atoms of nature'. And this is not the only place where we find this view expressed. In a 1705 letter to the Electress Sophie, Leibniz asserts that 'matter is composed of simple and indivisible substances'; it 'consists of a mass [*amas*] of simple substances without number' (GP VII 561-2). While these passages might be interpreted in a way that rendered them consistent with the *perceptual* explanation of matter's reality tendered by qualified realism, they most straightforwardly suggest an *ontological* thesis, namely, that matter is real because it is composed of monads, the only *per se* real beings.

Although a good deal of work remains to be done in defending this as an interpretation of Leibniz's view, it should be clear how such a position would support the attribution to him of a form of matter realism. To the extent that monads are identified as the 'elements,' or basic constituents, of matter, Leibniz, in effect, proposes a reduction of matter to monads: a reduction in which matter is understood as real, because it is nothing more than a plurality of simple substances. This I take to be a reductive claim not unlike the reductive claims made by

philosophers of science to the effect that matter is ultimately atoms, or quarks, or superstrings. Leibniz defends his reduction of matter to monads on the basis of traditional metaphysical principles, not the principles of modern physical theory. In other respects, however, the claims have a similar status, insofar as they provide an understanding of matter that represents it as qualitatively unlike anything perceived by our senses, or anything that could be represented on the basis of sensory experience. I will argue for this as Leibniz's deepest and most intriguing version of idealism. It is unquestionably a form of idealism, for it upholds the thesis of substance idealism. Nevertheless, it rejects the central claim of matter idealism: that material things exist only as appearances, or the contents of mental representations. On this account, Leibniz is an unqualified realist about matter, for matter is constituted by the only ultimately real things: monads.

2. Matter Realism

To be a realist about matter is to believe that matter is the kind of thing that can exist independently of being perceived or thought by some mind. To deny this, is to embrace the position of the matter idealist, according to which matter has no existence independently of being perceived or otherwise apprehended by a mind, including the mind of God.^{xv} Matter idealism can be articulated in a variety of ways. In Descartes' terminology, it can be expressed as the thesis that matter possesses an objective being but no formal being. In Berkeleyan terms, it is the view that, for matter, 'to be is to be perceived', and that what we call a 'body' is merely a 'collection of ideas'. In the locution of twentieth-century phenomenism, it is the view that any

statement about the existence and properties of bodies can be replaced by statements about the hypothetical perceptions of conscious minds.

A prominent line of interpretation links the emergence of this type of idealism in the early modern period to prevailing theories of mind and knowledge. According to Myles Burnyeat, what makes idealism possible as a philosophical position is Descartes' novel assumption of a domain of 'subjective truth' associated with the contents of ideas or mental states.^{xvi} Because subjects have an immediate access to the contents of their own mental states, they can possess a certainty concerning those states that they cannot possess concerning the supposed extramental objects represented by them. Furthermore, for the first time, philosophers can entertain the radical skeptical hypothesis that there may be no reality over above that of the mind and its ideas. As Burnyeat presents it, there is a direct line from Descartes' *cogito* to Berkeley's *esse est percipi*. Faced with the problem Descartes raises, one can attempt to demonstrate (as Descartes does) that a belief in the existence of mind-independent objects is justified. Or, one can say (as Hume later does) that we cannot help but believe this. Alternatively, if our only direct knowledge is of ideas, and nothing can be like an idea or the cause of an idea or even conceived unless it is an idea, then one might accept the conclusion that sensible things are nothing but ideas and that the idea of 'external', mind-independent matter is an incoherent one. Thus Berkeley's idealism.

While suggestive of one route to idealism, Burnyeat's interpretation fails to distinguish in a sufficiently sharp way the epistemological problem of the justification of belief in the existence of an external world of bodies and the metaphysical problem of the mind-independent reality of matter. Although these two problems intersect (especially in Berkeley), they raise quite different

challenges. As Descartes' argumentation in the *Meditations* makes clear, it only makes sense to pose the question of our knowledge of an external world of bodies, once we have shown that matter is the sort of thing that can enjoy a mind-independent existence. Accordingly, Descartes first establishes the essence of matter as *res extensa*, and the real distinction between mind and matter, and only then offers an argument that we are justified in believing that there exist bodies that cause, and correspond to, veridical perceptions as though of bodies.

In general, then, the first problem faced by the matter realist is not the problem of the veridicality of perception. The realist must be able to say more than just that perceptions as though of bodies are grounded in some external reality, for that would be true even if they were caused by God or an evil demon. The realist must be able to defend the conclusion that veridical perceptions as though of bodies are veridical because they are suitably related to *matter*, which has a mind-independent reality. Realism about the material world, therefore, typically involves two separate claims:

- (1) **The Reality Claim.** Matter possesses a mind-independent reality, that is, it is the kind of thing that *can* exist independently of being perceived or otherwise apprehended by some mind.
- (2) **The Veridicality Claim.** The veridicality of perceptions as though of bodies is explained by the fact that they are appropriately caused by or appropriately correspond to existing matter.

While the skeptical doubts of Descartes' *Meditations* are primarily directed at (2), (1) plays the critical role in distinguishing realists from idealists. The realist is someone who maintains that matter possesses a mind-independent reality; the idealist denies this. Here the realist's claim

should be seen principally as a thesis about what it is to *be* matter, that is, about the nature or essence of matter. If one is a realist about matter, one must hold that the conditions for the *possibility* of the existence of matter can be stated in a way that does not involve appeal to particular acts of mental representation. Matter has a nature that allows it to exist independently of its being perceived or thought by some mind.

What the nature of matter is, will be conveyed by our best theories of matter, whether those theories fall within the domain of physics or metaphysics. Crucially, those theories may represent matter as very different from how it is represented by our sensory perceptions. Again, Descartes makes this point forcefully: color, odor, heat, and even solidity are not real properties of matter. The essential properties of matter—those that define the possibility of its existence—are those that are clearly and distinctly perceived by the intellect: extension, size, shape and motion. Having concluded that there are sufficient grounds to affirm the existence of material things, Descartes' meditator allows that, 'They may not all exist in a way that exactly corresponds with my sensory grasp of them, for in many cases the grasp of the senses is very obscure and confused. But at least they possess all the properties which I clearly and distinctly understand, that is, all those which, viewed in general terms, are comprised within the subject-matter of pure mathematics'.^{xvii}

Here Descartes makes a move that is decisive for the development of modern philosophy. While sense experience can be called on as evidence of the *existence* of bodies, the nature of matter is fixed not by our sensory representations of bodies but by intellectual representations validated by physical theory. As Descartes understands the essence of matter, its properties are defined in terms of modifications of three-dimensional Euclidean space. This, however, merely

reflects the limitations of his theorizing. Descartes himself characterizes the essential properties of matter as ‘those which, viewed in general terms, are comprised within the subject-matter of pure mathematics’. Taking some liberty, we may read this as the suggestion that the essential properties of matter are *whatever* mathematically representable properties our best physical theories reveal matter to have. Subsequent developments have shown that three-dimensional Euclidean space is inadequate as a mathematical structure in which to represent the properties of matter. In general relativity theory, we represent the properties of matter in four-dimensional, non-Euclidean space-time. Quantum theory has further shown that it is a mistake to think of matter as filling space, or as contained within determinate regions of space. Physicists’ most recent versions of the holy grail, superstring theory or brane theory, make the outlandish suggestion that matter and energy exist within a ten- or eleven-dimensional, non-Euclidean space-time.^{xviii}

Whatever truth is contained in these speculations, it does not exceed the bounds of physical possibility. Rather, it defines those bounds, and at the same time reinforces the point that the fundamental nature of matter may be completely unlike what we perceive it to be. Just as we have given up the idea that matter is really red, hot or spicy (although it reflects light from the lower end of the visible spectrum, its particles have a mean kinetic energy greater than those of particles in the ambient medium, and it emits molecules that selectively bind to taste receptors in our tongue), so we may be brought to give up the idea that the smooth table in front of us really is a continuous surface, or that it really is a three-dimensional Euclidean solid. None of this, however, gives us any reason to revise our opinion that bodies are real, and that our perceptions reliably track their existence. These beliefs are justified provided our best theories

confirm matter to be the sort of thing that can possess a mind-independent reality, and the veridicality of perceptions as though of bodies can be explained by the fact that they are appropriately caused by, or appropriately correspond to, matter.

As I interpret him, Leibniz upholds both the Reality Claim and the Veridicality Claim. Matter has a mind-independent reality, for any portion of matter is constituted by an infinity of monads, the only ultimately real beings or substances. Furthermore, the veridicality of our perceptions as though of bodies can be explained by the fact that the contents of those perceptions correspond to real properties of the monads constitutive of matter. At a minimum, they represent, or ‘express’, other monads’ perceptions and appetitions, which are the only real properties of monads.

The claim that matter is constituted by monads is, admittedly, an extraordinary one. How are we to make sense of the idea that matter, an apparently extended, spatial stuff, is really a mass of *unextended, mind-like* substances? I have attempted to motivate this thesis by appealing to the analogy of modern physical theory, which represents matter as occupying a ten-dimensional space-time, something that seems equally difficult to grasp on the basis of ordinary sensory experience. But a critic may reply that, however different superstring theory represents matter as being, it still represents it as the same sort of thing that we perceive matter to be, above all, it still represents matter as spatial. By contrast, if I am right, Leibniz interprets matter as constituted by substances that are essentially non-spatial: in themselves, monads are neither spatially extended nor spatially located.^{xix} The critic may object that this simply cannot be true. Whatever Leibniz may want to say about the existence of monads and their relation to matter, he

cannot say that matter literally *is* monads, since anything that is matter must be spatially extended and monads are non-spatial entities.

There are two responses that a matter realist might make to this objection. First, it could be argued that the objection fails because the spatiality of bodies can be explained as an emergent property of monads. Although monads themselves are not spatially extended, a plurality of unextended, simple substances can give rise to extended matter. Examples of this response are found among post-Leibnizian philosophers such as Christian Wolff and the pre-critical Kant who argue that matter's extension can be explained in terms of real relations among monads.^{xx} This, however, it is not Leibniz's position. Leibniz rejects the attempt to explain extension as a real property of matter that is determined by external relations among monads. Instead, he challenges the objector's assumption that matter itself is spatially extended. This position appears prominently in texts dating back to the 1680s:

Concerning bodies I can demonstrate that not merely light, heat, color, and similar qualities are apparent but also motion, figure, and extension. And that if anything is real, it is solely the force of acting and being acted on, and hence that the substance of a body consists in this (as if in matter and form). (A VI.iv 1504/L 365).^{xxi}

Leibniz's skepticism about the reality of extension stems from a variety of metaphysical considerations, some of them associated with the labyrinth of the continuum. From them he draws the conclusion that, although more amenable to analysis than so-called 'secondary qualities', extension and its modes likewise 'contain something imaginary and relative to our perception.'^{xxii} Consequently, just as we have come to regard color, odor, and flavor as

appearances that do not correspond to intrinsic properties of matter, although they may be lawfully related to such properties, so we should say the same about the spatial properties of matter. Although we originally took bodies to be objects with real spatial properties, on reflection we find that those properties, like other sensory qualities, are only apparent.

In later writings, Leibniz defends a more sophisticated interpretation of extension as an apparent, or perception-dependent property, while preserving a partial relation between the content of corporeal phenomena and the reality represented by them. In the De Volder correspondence, he distinguishes *extension*, an attribute abstracted from the phenomenal appearances of matter, and *that which is extended*, matter itself, which he identifies with a multitude of substances.^{xxiii} The appearance of extension is a confused representation of external substances, each endowed with primitive active and passive force:

extension [*extensio*] is an abstraction from that which is extended [*extensum*], and it is no more a substance than number or multitude can be considered a substance; it expresses only a certain nonsuccessive... and simultaneous diffusion or repetition of a certain nature, or what comes to the same thing, a multitude of things of the same nature, existing together, with a certain order among themselves. It is this nature, I say, that is said to be extended or diffused....

Furthermore, the nature which is supposed to be diffused, repeated, continued, is that which constitutes the physical body [*corpus physicum*]; it cannot be found in anything but the principle of acting and being acted upon, since nothing else is suggested to us by the phenomena. (GP II 269/AG 179)^{xxiv}

On this account, at least some features of the representational content of corporeal phenomena convey features of reality. The active and passive forces of bodies are confused expressions of the primitive active and passive powers (or form and primary matter) of simple substances.^{xxv} Physical forces have different properties than the primitive forces of monads. Nevertheless, insofar as physics regards matter as consisting essentially of active and passive forces, it targets a feature of reality, albeit one represented confusedly by our faculty of perception. This confusion is traced by Leibniz to our perceptual representations of spatial and temporal order. The continuous ‘diffusion’ of matter in space (like the continuous ‘flux’ of change) is an artifact of perception.^{xxvi} With respect to their distinct or intelligible content, perceptions of matter represent only the ‘coexistence of a multitude of things of the same nature’, with no assumption made that those things themselves are spatially extended. Thus, the content of such perceptions is consistent with the claim that matter itself is not spatially extended, but, in fact, consists of a multitude of non-spatial, simple substances.^{xxvii}

The temptation to say that we cannot conceive of how matter could be, or be constituted from, non-spatial entities is strong. Kant believed that the proposition ‘all bodies are extended’ is analytic, so it would be conceptually impossible for something to be matter and not be spatially extended.^{xxviii} On the view I am ascribing to Leibniz, matter consists of monads, yet monads themselves are not spatially extended, nor do they combine to produce something that is, in fact, spatially extended. Hence, as an infinity of monads, matter is not spatially extended (although it may appear to be so). Following Quine, we should be dubious of the move to dismiss this as a conceptual impossibility. At most, we should grant that modern physical theory gives us no way of making sense of the claim. According to its lights, anything that is matter

must be conditioned by space and time. But this reflects constraints built in to post-seventeenth-century physical theory, rather than a theory-independent, necessary truth about matter.^{xxix} The explanatory framework of contemporary physics requires that the macroscopic properties of matter be explained in terms of the properties of constituent physical things, which is to say, spatio-temporal things. From this, however, we are entitled to conclude only that *physics* cannot explain how an apparently spatially extended body might be a plurality of unextended, non-spatial monads. Nothing further follows about the possibility of this being explained by some other kind of theory, such as metaphysics offers.

We may be less sanguine about the prospects of metaphysics than Leibniz was, or have a different view of the kind of explanation that a metaphysical theory can be called on to provide. These differences, however, are irrelevant to our understanding of Leibniz's position. In the next section, I will examine one influential account of how Leibniz supports the conclusion that bodies are 'constructed' from monads. After indicating the shortcomings of this account, I will turn to Leibniz's own defense of his position.

3. Adams' 'Qualified Realism'

In his now classic book on Leibniz, Robert Adams characterizes Leibniz's idealism in the following terms:

The most fundamental principle of Leibniz's metaphysics is that 'there is nothing in things except simple substances, and in them perception and appetite' [GP II 270/L 537]. It implies that bodies, which are not simple substances, can only be constructed out of simple substances and their properties of perception and

appetition.... A construction of the whole of reality out of perceiving substances and their perceptions and appetites exemplifies a broadly idealist approach to metaphysics.^{xxx}

In Adams' view, Leibniz is unquestionably a substance idealist, for he believes that the only ultimately real things are mind-like simple substances. But is Leibniz, for Adams, also a matter idealist, that is, does he believe that matter exists only as an object of perception or thought? On the face of it, Adams seems to reject this conclusion. He argues that Leibniz's analysis of the reality of corporeal phenomena consists of 'two or three layers' (261).^{xxxi} One of these is straightforwardly phenomenalist. On this weaker reading, bodies are nothing more than the contents of well-ordered, harmonious perceptions. More precisely, in Adams' words, 'Real phenomena are those that form part of a coherent, *scientifically* adequate story that appears all or most of the time, at least in a confused way, to all or most perceivers' (257).^{xxxii} According to Adams, however, Leibniz also defends a stronger notion of the reality of corporeal phenomena, as evidenced in his claim that bodies are 'aggregates of substances'. 'Given that Leibniz says that bodies *are* aggregates of substances', Adams writes, 'it is hard to see how he could fail to think that their reality consists at least partly in the reality of the substances that are aggregated in them' (260). This point is reinforced by Adams' ascription to Leibniz of a 'reductionist philosophy', which analyzes a body as 'a sort of logical or metaphysical construction out of substances, and thus out of ultimately real things' (245).

In these passages, Adams appears to attribute to Leibniz a version of matter realism, according to which bodies possess derivatively the *per se* reality of monads. Bodies are real because they can be explained as 'constructions' of substances, or 'ultimately real things'. When

we turn to the details of Adams' interpretation, however, it is difficult to see how this claim can be upheld, or how it translates into a defense of matter realism. The crux of Adams' account is given in the following passage where he contrasts Leibniz's position with that of Berkeley:

while Leibniz's metaphysics is certainly a form of idealism, it also includes a sort of qualified realism about bodies and about physical science. Part of what is going on in Leibniz's mature thought is that he does assume that in our perception of bodies we are at least indirectly perceiving something that is primitively real independently of our minds, and he asks what sort of thing that may be. His answer is that it is 'infinite Monads', whose harmonious perceptions are the 'foundation' of corporeal phenomena. (227)

As this passage makes clear, the 'qualified realism' that Adams ascribes to Leibniz is based on the claim that veridical perceptions as though of bodies are grounded in other monads, or more precisely, in the harmonious *perceptions* of other monads. When we veridically perceive a body—or some phenomenon is judged 'real'—this is so not only because our perceptions internally exhibit a lawful order and agree with the perceptions of other conscious minds; in addition, we are indirectly perceiving other monads, which supply an external ground for the truth of our perceptual judgments. According to Adams, this will be the case provided that a specific agreement obtains between the content of a perceiver's perceptions and the content of the perceptions of certain external monads. Roughly, my perception as though of a body will be veridical, or *of* certain monads, just in case there exist monads that collectively represent themselves (via representations of their bodies) as an exhaustive decomposition of the perceived

body into an infinity of smaller organic bodies. Under this condition, the external monads constitute an aggregate that is perceived by me as an extended material thing.

All of this, I believe, accurately captures one part of Leibniz's theory of body. By itself, however, it does not support the claim that bodies, or the matter from which they are composed, possess a mind-independent reality. Adams recognizes that an important strand in Leibniz's philosophy leads to the conclusion that material things are real *by virtue* of the substances from which they are aggregated, or that bodies *derive* their reality from these substances. Adams maintains that his interpretation explains how this is so. Yet, on his account, the reality that bodies acquire from monads is explained entirely in terms of relations of harmony that obtain between the appearance to a perceiver of a body and the appearances of the 'same body' or parts of the 'same body' to other perceivers.^{xxxiii} As Adams allows, what his 'qualified realism' adds to a simple phenomenalist analysis is merely 'an additional condition that harmonious phenomena must satisfy in order to be real in the fullest sense' (260).

Adams argues that his account provides for a stronger notion of the reality of body than is supported by a simple phenomenalist analysis. This is correct, since the account offers us a way to talk about phenomenal bodies as 'aggregates of substances' and to conceive of those substances as the ground of the veridical perceptions of a body. Yet this does not add up to an explanation of how bodies themselves inherit the *per se* reality of substances. What has been conflated in Adams' account is, on the one hand, an explanation of the veridicality of perceptions as though of bodies, and on the other, an explanation of how a body is not simply a mental object but has a reality that is derivative from the prior reality of monads. Adams appears to accept that, for Leibniz, bodies have the latter sort of reality, but he has not explained what it involves.

In fact, Adams appears to block such an explanation from the outset. On his reading, to *be* a material thing is simply to be an object of perception. '[W]hen Leibniz speaks of bodies as phenomena', Adams writes, 'we may understand those phenomena as qualities or modifications of the perceiving substance considered with regard to their objective reality or representational content or insofar as they express some nature, form or essence' (222). For Adams, a body is a representational content that *expresses* 'some nature, form or essence'; it is not an entity that of itself *has* a 'nature, form or essence'.^{xxxiv} This, I suggest, is just the point on which readings of Leibniz as either a matter idealist or a matter realist must diverge. Matter realists will agree that perceptions as though of bodies have a content that expresses some nature, form or essence, but they will further argue that, as a real being, matter itself has a nature, form or essence, which is subject to metaphysical analysis. If I am right, the conclusion Leibniz reaches on the basis of such an analysis is that matter is, essentially, a plurality of monads.

4. Monads and the Panorganic Structure of Matter

By what argument is Leibniz led to affirm that any material thing is constituted from a multitude of soul-like monads? One line of reasoning found in his writings links this conclusion to the panorganic structure of matter. From the 1680s onward, Leibniz defends an unusual theory of the composition of matter. According to him, (1) any portion of matter is either the animated body of an organism or an aggregate of such animated bodies, and (2) any animated body itself is an aggregate of the animated bodies of smaller organisms. On this account, matter is everywhere animated, or composed of animated bodies. What we commonly think of as inorganic matter—the table in front of me, a lump of sugar, a clock—would be revealed, if we penetrated far

enough into its structure, as a complex collection of living bodies enveloped within living bodies, *ad infinitum*.

Leibniz took this theory of matter to be supported by contemporary microscopic observations of the tiny creatures present in a drop of pond water. From these observations he generalized to the conclusion that matter everywhere is full of the bodies of living creatures.^{xxxv}

As he writes in the *Monadology*:

there is a world of creatures, of living things, of animals, of entelechies, of souls in the least part of matter. Each portion of matter can be conceived as a garden full of plants, and as a pond full of fish. But each branch of a plant, each limb of an animal, each drop of its humors, is still another such garden or pond. And although the earth and air lying between the garden plants, or the water lying between the fish of the pond, are neither plant nor fish, they contain yet more of them, though of a subtleness imperceptible to us, most often. (§§66-68; GP VI 618/AG 222)

Although the hypothesis of the panorganic structure of matter is radically underdetermined by the available evidence, it has decisive consequences for Leibniz's view of the reality of matter. If he believes, as he may during the 1680s and 1690s, that living bodies are substances—corporeal substances with a *per se* unity—then we have a straightforward explanation of how any body is real: it is real because either it is the body of a corporeal substance or it is composed of such substances. Either way, there is no mystery about the reality of matter, for certain bodies, corporeal substances, are among the basically real things and other bodies can be explained in terms of their composition from those basically real things.^{xxxvi}

We are supposing, however, that the late Leibniz is a substance idealist. For him, the only substances are mind-like monads. This development does not lead to any significant change in Leibniz's account of the structure of matter. In his post-1700 writings, Leibniz continues to assert that secondary matter is everywhere composed of living bodies contained within living bodies, *ad infinitum*, while also maintaining that the only ultimately real things are monads. A clear statement of his position appears in a 1711 letter to Friedrich Bierling:

a *body* is either a corporeal substance or a mass assembled from corporeal substances. I call a *corporeal substance* that which consists in a simple substance or monad (that is, a soul or soul-analogue) and a united organic body. But a *mass* is an aggregate of corporeal substances, just as a cheese sometimes consists of a confluence of worms.... And any mass contains innumerable monads, for although any one organic body in nature has its corresponding monad, it nevertheless contains in its parts other monads endowed in the same way with organic bodies subservient to the first; and the whole of nature is nothing else, for it is necessary that every aggregate result from simple substances as if from genuine elements. (GP VII 501-2)

This passage poses significant problems of interpretation.^{xxxvii} Here, I want to focus on the question of what Leibniz means when he says that 'any mass contains innumerable monads'. If he were to uphold the thesis that any portion of matter is composed of *irreducible* corporeal substances, then we could give a plausible meaning to this claim. A corporeal substance, as Leibniz explains, 'consists in a simple substance or monad... and a united organic body'. Every organic body thus comes with its own soul or dominant monad, and if any portion of matter can

be understood as an infinitely complex aggregate of corporeal substances, it would be plausible to say that ‘any mass contains innumerable monads’, for wherever there is a living body within that mass there also is a dominant monad.^{xxxviii}

Leibniz clearly is thinking along these lines in the above passage, but he considerably complicates his position when he moves from the claim that any organic body contains innumerable corporeal substances to the claim that any organic body contains innumerable monads, each endowed with its own organic body, *and then* draws the conclusion that ‘the whole of nature’ consists of nothing but monads. By the time he reaches this conclusion, corporeal substances have been eliminated from Leibniz’s inventory of the ultimately real things. In that case, however, we are left without a clear understanding of what it means to say that the ‘whole of nature’, including all concrete matter, is just monads. Indeed, with this move, Leibniz seems to have undermined his own best argument for the conclusion that ‘any mass contains innumerable monads’. As I have suggested, he has a plausible explanation of this idea, *if* we interpret the monad as the soul, or soul-analogue, of a corporeal substance. Then we can say that there is a monad wherever there is an organic body whose soul or soul-analogue it is. But if corporeal substances themselves are eliminated, then this explanation fails, and it seems we have no justification for the claim that ‘any mass contains innumerable monads’.^{xxxix}

In another text from the same period, Leibniz presents his position in a similar way:

A substance is either simple, such as a soul, which has no parts, or it is composite, such as an animal, which consists of a soul and an organic body. But an organic body, like every other body, is merely an aggregate of animals or other things which are living and therefore organic, or finally of small objects or masses; but

these also are finally resolved into living things, from which it is evident that all bodies are finally resolved into living things, and that what, in the analysis of substances, exist ultimately are simple substances—namely, souls, or if you prefer a more general term, *monads*, which are without parts.... And because an organic body, or any other body whatsoever, can again be resolved into substances endowed with organic bodies, it is evident that in the end there are simple substances alone, and that in them are the sources of all things and of the modifications that come to things. (C 13-14/MP 175)

The clearest indication of Leibniz's reasoning here is his appeal to an 'analysis of substances'. Because he holds that any living thing or corporeal substance is a *composite* substance, formed from a soul-like simple substance and an organic body, which itself is an aggregate of corporeal substances, he infers that this analysis must terminate in the conclusion that any corporeal substance ultimately is composed of monads alone. As he writes in *Principles of Nature and Grace*, §3: 'each distinct simple substance or monad, which makes up the center of a composite substance (an animal, for example) and is the principle of its unity, is surrounded by a *mass* composed of an infinity of other monads, which constitute the *body belonging to* this central monad' (GP VI 598-99/AG 207).

Again, however, Leibniz leaves unexplained the sense in which an infinity of monads can be understood to *constitute* the body belonging to a soul-like monad, or to *compose* its mass. He helps himself freely in this connection to compositional language: in some sense, monads are the matter, or stuff, from which any body is composed. This is strongly suggestive of a realist view of matter: bodies are not simply appearances or the contents of mental representations but rather

monads. The problem is that Leibniz offers no justification for this claim, or even an explanation of how an apparently extended, material thing, the body of a corporeal substance, could be, in fact, an infinity of unextended monads. That is the problem that has to be addressed if the realist position is to be shown to be coherent. To be clear on my own stance, I believe that the above passages offer prima facie evidence that Leibniz's position is that of the matter realist. What is missing is an explanation of how to understand this view and the arguments that support it.

5. The Defense of Matter Realism

In articulating the dependence of matter on monads, Leibniz appeals to three distinct ontological relations: (i) the 'being in' relation, (ii) the aggregation relation, and (iii) the resulting relation. In this section, I focus on the first relation, with an aim to explicating the puzzling notion of monads 'being in' matter. In the next two sections, I connect this view with what Leibniz says about the aggregation and resulting relations.^{x1}

Leibniz describes monads as being *in* matter (GP II 301). He cautions, however, that this does not mean that monads are spatially located within a body. Strictly speaking, monads, are non-spatial entities. Thus, they cannot be identified with spatial *points* or with the smallest spatial *parts* of bodies:

Monads should not be confused with atoms. Atoms (as they are imagined) have shape. Monads no more have shape than do souls; they are not parts of bodies but requisites.^{xli}

In explaining the sense in which monads are in matter, Leibniz appeals to the notion of a 'requisite'. In a study from the 1680s, he defines the notion as follows:

If A is not, then B is not, and if A is prior by nature to B, then A is a *requisitum*, B is a *requires*. (A VI.iv 871)

According to this definition, A is a requisite of B, if the existence of A is a necessary condition for the existence of B *and* A is prior by nature to B. Leibniz does not make the latter relation as clear as he might, but the core idea is that if A is prior by nature to B, then the existence of B must be explained in terms of the existence of A. Thus, if A is a requisite of B, B cannot exist without A and B cannot be understood to exist except by way of the prior existence of A.

In a contemporary text, Leibniz further distinguishes two types of requisites:

Some *requisita* of things are mediate, and these must be investigated by reasoning, such as causes; others are immediate, such as parts, boundaries, and generally those things which are in [*insunt*] a thing. (A VI.iv 627/LOC 271)

Our interest is in the class of *immediate* requisites, which Leibniz distinguishes from causes, on the grounds that causes ‘must be investigated through reasoning’. Immediate requisites are unlike causes in that their existence is presupposed by the *possibility* of the existence of that which requires them. They are not merely conditions without which some thing in fact cannot exist (or cannot exist consistent with the laws of physics), but conditions without which that thing cannot be conceived to exist. Leibniz identifies these immediate requisites with things that ‘are in’ another thing:

If A is an immediate requisite of B, A is said to be *in* B, that is, A must not be posterior in nature to B, and with A supposed not to exist, it must follow that B also does not exist, and this consequence must be immediate, independent of any change, action or passion. (A VI.iv 650)^{xlii}

Leibniz equates the immediate requisites of a thing, or equivalently those things which ‘are in’ it, with whatever is metaphysically necessary for its existence. As examples of immediate requisites, he cites the parts of a whole and the boundaries of a geometrical object (the endpoints of a line, the surface of a sphere).^{xliii} It is important to note how broad this notion is and that it is not limited to spatial part-whole relations. These form only a special case of the relation in which the relata are ‘homogeneous’.^{xliv}

As I understand it, Leibniz’s case for matter realism hinges on the claim that monads are immediate requisites of actual or concrete matter. This claim surfaces for the first time in reflections Leibniz recorded, probably in March 1690, on an objection raised against his position by the Italian philosopher Michelangelo Fardella. Fardella had criticized Leibniz’s conception of matter on the grounds that it led to the conclusion that matter is everywhere full of souls. In his initial response, Leibniz appears to resist this conclusion, arguing that souls are not in matter as independently existing substances, but only as substantial forms that are never separated from a living body (A VI.iv 1670/AG 105).^{xlv} In subsequent remarks, however, Leibniz moves toward the view he asserts in later writings, namely, that souls (or soul-analogues) are substances in their own right, and that they are the ultimate constituents of matter. The point he now insists on is that this thesis can be defended only if we have the proper understanding of the notion of a ‘constituent’. He writes:

There are infinite simple substances or created things in any particle of matter; and matter is composed from these, not as from parts, but as from constitutive principles or [*seu*] immediate requisites, just as points enter into the essence of a continuum and yet not as parts, for nothing is a part unless it is homogeneous with

a whole, but substance is not homogeneous with matter or body any more than a point is with a line. (A VI.iv 1673)

Leibniz does not employ the term ‘monad’ in this passage; it does not enter his lexicon until later in the decade. His use of the expression ‘simple substance’, however, gives us reason to think that he is including souls and soul-like entities as substances in their own right, and that he identifies these as the basic constituents of matter.

Accepting this, we can draw several conclusions about how Leibniz conceives of the matter-monad relation. Monads are not to be thought of as efficient causes of matter, let alone causes of our perceptions of matter, for in Leibniz’s terminology they are *immediate* requisites, not mediate requisites.^{xlvi} Leibniz conceives of the matter-monad relation as analogous to the relation between a line and its end points, in that in both cases the second member of the pair is presupposed by the first and ‘enters into its essence’. Leibniz explicitly denies that monads are spatial points, but he does refer to them as ‘metaphysical points, or points of substance’ (GP IV 483/AG 142), suggesting a close analogy between the two. This is reflected in the fact that neither monads nor spatial points are, properly speaking, *parts*, for parts are homogeneous with that of which they are parts, a condition that neither monads nor points satisfy. This is stressed in another passage from his exchange with Fardella:

[O]ne must not infer that the indivisible substance enters into the composition of body as a part, but rather as an essential, internal requisite, just as one grants that a point is not a part that makes up a line, but rather something heterogeneous which is, nevertheless, necessarily required for the line to be and to be understood. (A VI.iv 1669/AG 103)

Leibniz clearly aims to model the matter-monad relation on the line-point relation. In both cases he identifies the relation as one of ontological dependence: the second member of each pair is an ‘essential, internal requisite’ of the first, that is, something that is required for the first ‘to be and to be understood’. This agrees with his definition of an immediate requisite as a necessary condition that is prior by nature. But what grounds does Leibniz have for believing that this analogy is an apt one? Why should we think that monads are related to matter in anything like the way that points are related to lines? When we say that a finite line cannot be conceived without conceiving of its end-points, we have a good grasp of what we mean: we conceive of a finite n-dimensional spatial figure by conceiving of the (n-1)-dimensional figures that delimit its extent: lines are delimited by points, two-dimensional figures by lines, etc.

Leibniz agrees that the relation of matter and monads is not like this. In one important respect, then, the relation between lines and points is distinct from the relation between matter and monads. For Leibniz, points are ‘in’ a line in the sense that they are necessary for the line to be and to be conceived, yet points do not *constitute* a line. This is because a mathematical continuum is not a real entity that is constituted from prior existing things. A continuum—a line, a plane, a volume—is ideal because it has no determinate parts from which it is composed (C 438-9; GP II 268). Rather, parts arise in it by designating arbitrary boundaries (*extrema*)—a role played by the entities (points, lines, planes) that are ‘in’ the resulting determinations (finite lines, figures, solids). By contrast, in the case of actual things such as concrete matter, the things that are ‘in’ it do constitute it, though not as ultimate spatial parts. Supposing that the thing is actual, its constituents, or immediate requisites, are the entities prior by nature that are presupposed by its existence.^{xlvii}

The question remains, however, why Leibniz believes that the existence of matter presupposes the existence of *monads*. What reason do we have for thinking that matter cannot exist or be understood to exist without monads? Leibniz relies on two main lines of argument in support of this conclusion: Matter presupposes monads as its immediate requisites by virtue of its being essentially *composite*, as determined by its actual division into parts *ad infinitum*, and by virtue of its essential *dynamical* properties (active and passive force). In both cases, Leibniz argues, given certain basic physical properties of matter, we cannot adequately understand matter as an actual or existing thing, except by conceiving of it as constituted by monads.

The arguments on behalf of this conclusion draw on many of the core tenets of Leibniz's philosophy. The anti-Cartesian thesis that force is an essential property of matter plays a prominent role in his reasoning. Force is always for Leibniz a real property of matter, not merely a phenomenally represented one; furthermore, as a changeable accident, physical force presupposes a ground in an enduring substantial principle of force.^{xlviii} A less metaphysically minded philosopher than Leibniz might take it for granted that the substances grounding the physical forces of matter must themselves be material. In his late writings, however, Leibniz rejects the conclusion that there are irreducible corporeal substances. Instead, the basically real things are restricted to mind-like monads. Crucially, this shift in Leibniz's understanding of what things count as substances does not alter his reasons for thinking that the existence of matter presupposes the existence of substantial principles of force. Given its dynamical properties, matter can neither exist nor be conceived to exist except through primitive active and passive force. If it should turn out that the only bearers of such forces are mind-like monads, then these must be the immediate requisites of matter.^{xlix}

The argument from the dynamical properties of matter is bolstered by considerations concerning the relation of unity and multiplicity. In another passage from the Fardella texts, Leibniz writes:

[O]ver and above a body or bodies, there must be substances, to which true unity belongs.... [I]f there are many created things it is necessary that there be some created thing that is truly one. For a plurality of things neither can be understood nor can exist unless one first understands the thing that is one, that to which the multitude necessarily reduces. (A VI.iv 1668/AG 103; cf. A VI.iv 1674)

Leibniz makes a completely general claim here: nothing can exist or be understood as a multitude, except in terms of unities to which it necessarily reduces. The understanding half of this claim is clear enough. It is a demand of reason that we seek the unities from which any plurality is composed; if the analysis of a plurality leaves us with constituents that are themselves plural, then reason demands that we look further for genuine unities (unities that are not themselves pluralities) in terms of which the plurality can be explained. What Leibniz adds to this is that it is not simply a demand of reason but a requirement of reality that any plurality be reducible to unities.¹ Nothing can exist as a plurality or composite, unless its existence can be explained in terms of the prior existence of unities. Thus, accepting that a distinct concept of matter represents it as an infinite plurality, its existence presupposes the existence of an infinity of true unities. And again, this conclusion is sustained even if the only true unities are mind-like monads.^{li}

The presupposition arguments sketched above make no claim about the existence of particular bodies. With these arguments Leibniz does not purport to demonstrate the existence of

material things in the manner of Descartes, or to show that our perceptions of bodies are in general veridical. His arguments instead are directed at metaphysically necessary conditions for the existence of matter. According to Leibniz, to say that monads are in matter, or the immediate requisites of matter, is to say that matter cannot exist or be conceived to exist except via the prior existence of monads. This, I contend, is the basis of Leibniz's realism about matter: insofar as matter presupposes monads as immediate requisites, we can infer that matter is essentially constituted from monads, and that those monads account for what is real about matter. In another study from the 1680s, Leibniz writes:

[I]t seems, therefore, that that *is in* a subject whose reality is part of the reality of the subject itself. Or, as I should say in a way better suited to forming and demonstrating propositions, *A is in B*, if all those things immediately required for A are also immediately required for B. But that which is immediately required for something such that nothing more is immediately, nor even mediately, required for it can be called *reality*. (A VI.iv 990)

Inasmuch as monads 'are in' matter, their reality is required by matter, which is to say that actual matter derives its reality, or the possibility of its existence, from the prior existence of monads. Consequently, however matter is represented by our senses, its reality is just the mind-independent reality of monads. It can exist only by being constituted from monads.^{lii}

6. Aggregation

I have argued that, for Leibniz, matter is real, because an analysis of the conceptual requirements of its existence terminates in an understanding of matter as a plurality of monads, the only *per se*

real beings. This conclusion, however, faces at least one significant objection that must be overcome if the reading of Leibniz as a matter realist can be sustained. The objection can be put in the form of the following brief argument:

1. If matter is constituted from monads, then any particular material thing, or body, is some particular collection or aggregate of monads.
2. According to Leibniz, any collection or aggregate is a mind-dependent entity, or phenomenon, for many things are united as *one* thing only to the extent that they are represented as such by some mind.
3. Consequently, if any body is an aggregate of monads, it exists only as a mind-dependent object, that is, something perceived or thought.

The conclusion of this argument directly challenges my reading of Leibniz as a matter realist. It maintains that, as an aggregate of monads, a body can exist only as a mind-dependent phenomenon. Thus, Leibniz's position must be that of a matter idealist.

My response to this objection rests on two closely related distinctions. The first is between the *unity* and the *reality* of an aggregate. The second is between a *body* as a countable object and the *matter* from which it is composed.

One of Leibniz's most basic metaphysical commitments is to the distinction between things that possess a 'true' or *per se* unity, identified with substances, and things that possess only a unity by aggregation.^{liii} The latter include all kinds of things whose existence and unity is explained in terms of relations among prior existing things. Among the examples typically cited by Leibniz are herds of sheep and armies of men, but also ordinary material objects, whether they are conceived as aggregates of extended parts, or as aggregates of substances. In

distinguishing such ‘beings by aggregation’ from substances, Leibniz points to the absence of an intrinsic principle of unity that renders a plurality of things *one*, and in virtue of which the plurality remains the same through change. The identity of an aggregate is determined solely by the relations among its parts, and when those parts change, the aggregate is destroyed.

A second point involves Leibniz’s theory of relations. An aggregate is not identical with the *set* of its components. It is a relational whole, whose unity is dependent upon the particular relations that hold among its components. At the same, it is a fundamental principle of Leibniz’s thought that, in and of themselves, relations are merely ideal or mental. They are not things that exist in their own right, abstracted from their relata.^{liv} This principle has huge consequences for Leibniz’s philosophy. If all relations are ideal, then those things whose identity depends upon the relatedness of their components—a herd, an army, the Dutch East India Company—must also be in some way ideal, or mind-dependent. An aggregate exists as a distinct entity over and above its components only insofar as they are represented as one by some mind; consequently, any such entity is, in Leibniz’s technical vocabulary, a *phaenomenon*.^{lv}

The claim that the unity of an aggregate is ideal, or mind-dependent, follows directly from Leibniz’s theory of relations. A plurality of things is merely a plurality, and not a unity, unless it is represented as one, through relations supplied by a mind. Insofar as the existence of an aggregate is in this way mind-dependent, its being, as much as its unity, is ‘semi-mental’.^{lvi} Less clear, however, are the consequences of this doctrine for our assessment of the *reality* of an aggregate. Leibniz does not claim that, given the ideality of relations, we are entitled to conclude that an aggregate has no mind-independent reality, that is, that it is merely a thought or perceived thing. This is the point of his describing aggregates as ‘semi-mental’. If an aggregate

were merely a thought or perceived thing, then it would be wholly mental, not semi-mental.

Taking Leibniz's favorite example of a herd, it is not implausible to think that its unity as a herd depends upon its being apprehended as one by some mind. Yet it does not follow from this that the herd is devoid of all reality, or that it is merely the object of a mental representation. On the contrary, Leibniz holds that the mind-independent reality of a herd is just that of the individual animals from which it is composed, granting that they do not collectively make up *one herd* unless they are represented as such by some mind.^{lvii}

Leibniz accepts that no herd is identical with its members. Not only does this violate the logic of identity, which is a one-one relation, not a one-many relation, but even if it were a well-formed statement, it would be false, because the identity conditions for the individual animals and the identity conditions for the herd are different. The joint existence of the individual animals is not sufficient for the existence of the herd, because the latter further presupposes a representation of the unity of its members. Moreover, assuming this unity, the herd or aggregate has properties that its constituents do not have, for example, being dispersed over a certain area. Consequently, the principle of the identity of indiscernibles is not satisfied.^{lviii}

Still, Leibniz does not think of a herd as a purely mental object. Even if a herd depends for its existence on an act of mind, there is a difference between a herd and the mere idea or image of a herd. There is something real about the former that is not real about the latter. One way to put this is to say that the herd is *constituted* by real beings, while the idea or image of the herd is not. 'Constituted' here does not mean spatial composition (although the herd is a scattered spatial whole); rather, it is to be understood in the sense of the 'being in' relation: the individual animals 'are in' a herd, insofar as the latter can neither be nor be conceived without

those animals. Yet the herd itself exists as one thing only insofar as its constituents are represented as one by some mind.

We may now attempt to apply these principles to Leibniz's account of the matter-monad relation and to the distinction between a particular body and the matter from which it is composed. According to the objection canvassed above, if an analysis of matter's essential properties terminates in the conclusion that matter is monads, then any particular body, or portion of matter, must be an aggregate of monads. Yet an aggregate exists only as a mind-dependent object; hence matter itself must be, for Leibniz, ideal and not real. The strategy for responding to this objection should be clear. Any body is *one* thing only insofar as many monads are represented as one by some mind; hence the unity and identity of that body are ideal. But it does not follow from this that there is nothing real about the body, or that it is a purely mental object. On the contrary, what is real about the body is that its matter is constituted from *per se* real beings, or monads.

For Leibniz, the ontological analysis of matter is in one important respect different from the analysis of a herd. In the case of a herd, we begin with a countable object, which is resolvable into a plurality of more basic countable objects. In the case of matter, by contrast, we begin with *mass*: an apparently homogeneous *stuff*, from which all bodies are composed. Then, much as modern chemical analysis allows us to conclude that whatever has the physical properties of water is constituted by H₂O molecules, so Leibniz's metaphysical analysis allows him to conclude that whatever has the properties of secondary matter is constituted by monads. In both cases, these are conclusions about *essence*, not about spatial composition. The answer to the constitution question is reached not by dividing the relevant mass into its smallest parts, but

by understanding the more basic kinds of things that are necessary for the existence of a certain kind of stuff.^{lix}

With this, we have what we need to rebut the objection to the realist interpretation. Leibniz's position is that a body can be identified as *one* thing—a particular aggregate of monads—only if certain monads are represented as one by some mind. Yet this condition on the existence of discrete bodies does not contradict the conclusion that whatever is a body also has a mind-independent reality, namely, that of its matter. As *mass*, matter is real, because it is just many simple substances or monads.^{lx} Although the organization of matter into discrete bodies presupposes the activity of mind for Leibniz, this fact does not undermine the claim that what is organized in this way is itself real.

7. Resulting

To this point I have defended matter realism as a coherent position for Leibniz to hold, consistent with his substance idealism and with the thesis that bodies are mind-dependent, 'aggregates of monads'. Furthermore, I have presented evidence of Leibniz's commitment to the view that monads are constituents of matter, and I have argued for an interpretation of this view that distinguishes it from claims about spatial composition. In one respect, however, the interpretation remains incomplete, for it makes no mention of what is perhaps Leibniz's most common way of characterizing the matter-monad relation: that bodies and their properties *result* from monads. Before drawing together the different strands of Leibniz's position, I shall consider the significance of this claim.

‘Resulting’ is the third of the technical notions (along with ‘being in’ and ‘aggregation’) that Leibniz employs in explaining the relation between monads and other kinds of existing things. Resulting has by far the widest application of the three notions in Leibniz’s late writings, a fact that is accounted for by its generality: according to canonical statements of Leibniz’s substance idealism, whatever exists and is not a monad, is a ‘result’ of monads.^{lxi}

The closest Leibniz comes to defining the resulting relation is the following passage from a marginal note to a 1679 study:

I understand that to result [*resultare*], which is immediately understood to be posited, when those things from which it results have been posited. (A VI.iv 310).^{lxii}

Based on this statement, it is most natural to interpret resulting as a relation of ontological determination, whereby the existence of certain entities by themselves is *sufficient* for the existence of some other entity (their ‘result’). Leibniz’s use of the term ‘immediately’ to qualify our grasp of the relation implies that it is not merely a relation of efficient causation, but a stronger form of determination, in which the prior entities by their very existence determine the existence of the result.

The clearest example Leibniz gives of this relation is the whole-part or, more generally, aggregate-constituent relation. Supposing the existence of the parts or constituents, the whole or aggregate is thereby immediately understood to exist:

If when several things are posited, by that very fact some unity is immediately understood to be posited, then the former are called *parts*, the latter a *whole*. Nor is it even necessary that they exist at the same time, or at the same place; it

suffices that they be considered at the same time. Thus from all the Roman emperors together we construct one aggregate. But actually no entity that is really one is composed of a plurality of parts, and every substance is indivisible, and those things that have parts are not beings but only phenomena. (A VI.iv 627/LOC 271)^{lxiii}

Although Leibniz does not use the term ‘result’ in this passage, he cites the same condition that appears in his earlier statement: with the parts posited, the whole is thereby immediately understood to be posited. What he goes on to say about the relation, however, gives us reason to question whether resulting can be interpreted as a purely ontological relation. We have seen that aggregates are determined to exist on the basis of relations among their constituents, and that such relations depend upon an act of mind. Leibniz implicitly acknowledges this point when he writes that the set of Roman emperors forms a single ‘aggregate’ by virtue of being ‘considered at one time’.^{lxiv} Moreover, resulting is explained generally as the relation whereby we *understand* the existence of one thing to be determined by the existence of certain other things. On a fuller elaboration of Leibniz’s position, then, we find that the existence of things by themselves is not sufficient for the existence of their aggregate. The mind plays an ineliminable role in facilitating the aggregate’s existence. Certain things form an aggregate only if they are suitably related; and they are suitably related only if they are represented as one by some mind. From this it follows, as Leibniz explicitly notes, that whatever is an aggregate that results from other things is a ‘phenomenon’, and not a true unity or substance.^{lxv}

Leibniz frequently asserts that bodies and their properties are phenomena that result from monads.^{lxvi} This thesis is open to two interpretations, depending upon the meaning given to the

term ‘phenomenon’, which Leibniz uses ambiguously. On the one hand, ‘phenomenon’ may refer to what is merely an object of thought or perception, an appearance. In this sense, a phenomenon is a mental content that by itself makes no claim on an extramental existence. We have seen, however, that ‘phenomenon’ is also used by Leibniz to describe whatever is a ‘being by aggregation’, the existence of which depends upon its being apprehended as one by some mind. In the case of phenomena that are aggregates of substances, we cannot say that they are merely objects of thought or perception. Rather, Leibniz characterizes them as ‘semi-mental’, and maintains that they have a reality that is derivative from that of the substances from which they are aggregated.

If ‘phenomenon’ is taken in the second sense, as referring to a ‘being by aggregation’, then the assertion that a body results from monads should be understood as the claim that the existence of certain monads is a sufficient condition for their being represented by other monads as one body. Because monads stand in no real relations to each other, only relations of harmony, the satisfaction of this condition must be spelled out in terms of an agreement among the contents of the monads’ perceptions. As Adams has argued, the relevant agreement consists in the circumstance that the grounding monads (those from which the body results) collectively represent themselves as the infinitely enveloped organic parts of the perceived body. A body results from certain monads, then, just in case those monads’ perceiving themselves as an infinitely enveloped collection of organic bodies is a sufficient condition for other monads representing that collection as one body.

Suppose now that Leibniz’s theory of preestablished harmony maintains that such an agreement in fact obtains: if certain monads collectively represent themselves as a set of

infinitely enveloped organic parts, then in general those parts are perceived (at least unconsciously) as one thing by other monads. With this, we have a simple explanation of how, as aggregates, bodies are phenomena that ‘result’ from monads. Given God’s creation of the monads of this world, whose perceptions are related by preestablished harmony in the specified way, aggregates of monads are thereby determined to exist. For aggregates to exist, in other words, nothing more is required than that certain specific relations hold among the contents of monads’ perceptions. Noteworthy about this account is that all the important work is done by the theory of preestablished harmony. Because this theory asserts a relation of universal expression among monads, wherein the contents of any one monad’s perceptions agree with those of every other monad (allowing for differences of spatial and cognitive perspective), and monads are related to each other only via relations among the contents of their perceptions, the determination of aggregates requires nothing more than what is guaranteed by preestablished harmony.^{lxvii}

Much the same explanation can be given if ‘phenomenon’ is taken in the other sense in which Leibniz uses the term, namely, as a mere appearance. If bodies are phenomena in this weaker sense, then they likewise will be determined to exist, provided that preestablished harmony obtains. On a phenomenalist analysis, a body exists, or is a ‘true phenomenon’, just in case monads agree in their perceptions of that body (allowing for differences of spatial and cognitive perspective). Given the truth of preestablished harmony, therefore, we can infer that the existence of the universe of monads is a sufficient condition for the existence of bodies, since the latter are nothing more than phenomena about which perceivers in general agree.

Thus, whether we take bodies to be phenomena in the sense of mere appearances (on which monads in general agree) or in the sense of ‘aggregates of monads’ (determined by the agreement among the contents of monads’ perceptions), Leibniz’s theory of preestablished harmony has the resources to explain how those phenomena can be construed as results of monads. The two accounts presuppose different elaborations of the theory of preestablished harmony, and they support different interpretations of the existence conditions of bodies. According to the phenomenalist account, to assert that a body exists, is simply to affirm that monads in general agree in their perceptions of that body. According to the aggregate or ‘qualified realist’ account, a body exists just in case there exists a specific subclass of monads that represent themselves collectively as the infinitely enveloped organic parts of that body. ‘Qualified realism’ thus makes a much stronger claim about the complexity of the harmony that God has instituted among monads’ perceptions, and about the ontological structure that results from that harmony.^{lxviii}

From this we may draw two general conclusions about the significance of the resulting relation for Leibniz’s late metaphysics. First, the conjunction of substance idealism and the claim that bodies are phenomena that result from monads leaves the final form of Leibniz’s metaphysics underdetermined. We arrive at substantially different theories of material being depending upon the kind of structure we take to be encoded by preestablished harmony. Thus, simply to assert that bodies are phenomena that result from monads does not settle the question of what bodies are for Leibniz. It does not tell us whether they are, for example, merely congruent appearances *or* aggregates of monads. Second, although qualified realism makes a stronger claim about the necessary and sufficient conditions for the existence of a body—the

existence of a subclass of monads that collectively represent themselves as its infinitely enveloped organic parts—it, as much as phenomenalism, is a species of matter idealism. Qualified realism’s explanation of the thesis that bodies are aggregates of monads is just the resulting account: bodies exist just in case there exist monads among which a specific pattern of perceptual harmony obtains. Missing from this account is any explanation of the second major claim that Leibniz makes about material things: that they are ‘semi-real’, or possess a reality that is derivative from the *per se* reality of monads. Support for this claim, I have argued, is offered only by an independent line of argument that establishes monads as the ‘constituents’ or ‘immediate requisites’ of the matter from which bodies are composed.

8. A Unified Theory?

Robert Adams has suggested that Leibniz’s analysis of the reality of corporeal phenomena consists of ‘two or three layers’. In fact, we can distinguish at least four layers in Leibniz’s attempt to understand the reality of material being within the theory of monads. These are represented by the positions I have labeled ‘phenomenalism’, ‘divine phenomenalism’, ‘qualified realism’, and ‘matter realism’. Individually, these positions correspond to four distinct accounts that commentators have claimed to find in Leibniz’s late writings. Against efforts to divide Leibniz’s views in this way, I believe that the four accounts are best understood as components of a single theory, which incorporates the thesis of matter realism.

In presenting this as the most illuminating way to understand Leibniz’s position, two caveats are in order. First, there is no proof text in which Leibniz articulates the relation among the four parts of his theory in precisely the way I do. Inevitably, the account I advance remains a

rational reconstruction. But this, I submit, will be true of any interpretation that attempts to do justice to the complex array of textual evidence found in Leibniz's corpus. My proposed reconstruction brings together in a consistent and theoretically satisfying way views that Leibniz typically expresses laconically, with little attention paid to their overall coherence.^{lxix} Second, for all that can be said on behalf of the unified theory, there are signs of a genuine tension in Leibniz's late writings between a realism of the sort argued for here and the weakest form of matter idealism. After presenting the theory as I think it should be understood, I shall consider briefly the attractions of this alternative for Leibniz and the reason why it ultimately fails to meet the demands of his metaphysics.

The position I ascribe to Leibniz takes the thesis of *matter realism* as foundational. By this I mean both that matter realism gives us Leibniz's deepest answer to the question of what matter is, and that it is the appropriate platform from which to interpret his other claims about the existence of bodies. According to matter realism, the stuff from which bodies are composed—concrete secondary matter—is essentially a mass, or multitude, of monads. This is the most basic level in Leibniz's position, which alone supports the conclusion that matter and its dynamical properties are *real*, since analysis reveals their existence to be nothing more than the existence of monads and their properties.

Given matter realism, we can conclude that any veridical perception of a body is the perception of certain monads (for that is what it is to *be* a material thing). In principle, though, we would like to be able to say more than this. If I am now perceiving an apple and that perception is veridical, how can I designate the particular monads that constitute the matter of the apple? It is here that the resources of Adams' *qualified realism* can be deployed: (1) The

monads that ground my perception of an apple must be designated in terms of their representational states (perceptions) and the tendencies of those states to change (appetitions), for these are the only intrinsic properties of monads. (2) The monads that can be identified with the particular apple I perceive are those that ‘have’ the physical properties I perceive the apple to have. (3) Since monads can ‘have’ physical properties only by representing themselves as having those properties, these will be monads that represent themselves as the infinitely enveloped organic parts of the body I perceive as the apple.

The existence of monads satisfying conditions (2) and (3) determines the apple I perceive to be a ‘well-founded phenomenon’, or a ‘result’ of monads. Given the content of my perceptions, it is neither metaphysically nor physically necessary that these monads exist. It is metaphysically possible that my existence is that of a solipsistic perceiver, in which case none of my perceptions are well-founded. Alternatively, my perceptions may in general be well-founded, but in this case I may be dreaming or delusional. What Leibniz is committed to is that in this best (or ‘most harmonious’) of possible worlds, our perceptions as a rule are well-founded: whenever we have, by our usual standards of evidence, reason to believe that we are perceiving veridically, then there in fact exist monads that well-found our perceptions.

Monads that well-found perceptions are not physical causes of those perceptions, but they are in Leibniz’s terminology ‘mediate requisites’, or ‘ideal causes’ of them.^{lxx} Given the causal order of the world, their existence is a necessary and sufficient condition for my veridically perceiving what I take myself to be perceiving. If I perceive an apple, I perceive it veridically if and only if the apple exists and stands in the appropriate causal relations to me—which is to say

(in Leibniz-talk), if and only if certain monads exist that represent themselves as the microscopic organic components of the matter of the apple.

For any monad to have veridical perceptions there must exist an agreement, or harmony, between its perceptions and the perceptions of the monads that well-found the phenomena that appear to it. This harmony, however, is not defined with respect to the consciously accessible, or phenomenological, content of those perceptions. Rather, it is defined with respect to certain facts about perceptual content that are accessible only to God. Hence the relevance of *divine phenomenalism*. When I perceive an apple, the monads that well-found that perception are not aware of representing themselves as the infinitely enveloped organic parts of the matter of the apple; nevertheless they do (unconsciously) represent themselves in this way, and God created them knowing this fact about the contents of their perceptions. Furthermore, these monads are united in an aggregate, to the extent that God knows their perceptions to be related in this way. Thus, divine knowledge is the basis of the truth of the proposition that there exists *an apple* (and not simply *some matter*), which I happen to perceive veridically.

On the theory I am ascribing to Leibniz, *phenomenalism* is most usefully understood as a thesis about the reality of bodies construed as purely physical things, independently of their ground in monads. According to Leibniz, reason teaches us that only a small portion of the content of our perceptions accurately represents features of reality. Most of the properties we perceive things to have—color, sound, flavor, but also spatial extent and continuity—are not properties of things as they are in themselves, that is, monads. Nevertheless, in the case of physical properties at least, we are entitled to act *as if* these properties were real, because of the lawful order of, and agreement among, the contents of monads' perceptions. In the case of

physical properties such as size, shape and motion, this lawfulness and intersubjective agreement suffices to designate those phenomena as ‘real’, in the weakest, phenomenalist sense. Since the properties of size, shape and motion (in contrast to passive and active force) correspond to no real properties of monads, their reality consists exclusively in the agreement among the phenomena of suitably located perceivers.^{lxxi}

The four-part theory sketched above renders consistent most of Leibniz’s disparate statements about the reality of matter. At the same time, it is necessary to keep in mind that the question of the ontological status of matter is of secondary concern for the late Leibniz. His fundamental commitment is to substance idealism, that is, the theory of monads, which subsequently presents him with the *problem* of how to account for concrete material things within that theory.

A typical statement of Leibniz’s foundational metaphysics appears in a 1704 letter to De Volder:

if anyone concedes to me that there is an infinity of perceivers, in each of which there is a fixed law of the progression of their phenomena, that the phenomena of different perceivers agree with each other, and that there is a common reason for their existence and agreement in the thing we call God, I neither posit anything else in things nor think that anything else should be posited. (GP II 264)

Passages such as this obviously lend themselves to a reading of Leibniz as a matter idealist. However, they do not force such a reading on us. Since matter on a realist analysis is nothing over and above monads, the assertion of its reality is consistent with Leibniz’s claim that he posits nothing in things except simple substances and their perceptions. The salient point, as I

have interpreted it, is not the ultimate entities, or substances, to which Leibniz is committed, but the type of explanation to which he appeals in linking those ultimate entities to other existing things. An explanation of matter as a phenomenon that ‘results’ from monads leads to one kind of (idealist) conclusion about its ontological status; an explanation of matter as ‘constituted from’ monads leads to a very different (realist) conclusion. I have argued that Leibniz is best understood as a matter realist, but his groundfloor ontology is equally consistent with qualified realism, divine phenomenalism, or even simple phenomenalism.

The attractions of the latter stance for Leibniz should not be underemphasized. In the absence of a deeper analysis, his instinct for ontological parsimony leads him frequently to assert that bodies are nothing more than phenomena—meaning, in its most straightforward sense, nothing more than the contents of the harmonious perceptions of monads. Were Leibniz content to rest with this conclusion, we would be justified in seeing idealism as dominating in his deliberations about the reality of matter.

In the end, I believe, Leibniz rejected phenomenalism as his considered view of the ontological status of matter. Instead, he cleaved to the position that the intrinsic reality of matter (or what it is to *be* matter) could be explained in terms of the prior, substantial reality of monads. Support for this conclusion hinges on the two arguments, sketched in section 5, for the thesis that monads ‘are in’ matter, or that they are the ‘immediate requisites’ from which matter derives its reality. The first argument takes as premises that whatever is matter is by nature a multitude of things, and that whatever is a multitude presupposes true unities. Consequently, matter can exist only insofar as it is a plurality of monads. This argument might be challenged by those favoring a phenomenalist interpretation. Matter is given to us as a multitude of spatially extended parts,

and any such part, according to Leibniz, is divided into smaller extended parts *ad infinitum*. Intellectually, we can conceive of matter as a multitude that is resolvable into true unities. But why are we forced to do so? Why not accept that matter is only a phenomenal appearance, and that as such, its being is *not* explicable in terms of the prior being of substance? Matter is a phenomenon that ‘results’ from monads, but this is consistent with its being nothing more than an appearance—coherent, law-governed, but ultimately unreal.^{lxxii}

This would be a coherent position for Leibniz to adopt, and he may sometimes lean toward it. The second argument I sketched, however, carries realist commitments that are less easily abandoned. That argument, we will recall, rests on the premises that whatever is matter is by nature endowed with active and passive force, and that whatever has such dynamical properties must be constituted from substantial principles of force. A challenge to this line of argument might take issue with the premise that, to be real, dynamical properties must be grounded in substantial principles of force, or it might reject the implicit assumption that these properties are any more real than other physical properties such as size, shape and motion. The first option is a non-starter for Leibniz: he maintains repeatedly in writings from the 1680s onward that dynamical properties can be real only if they are explicable as modifications of the primitive active and passive force of substance. That leaves the second option, which would be the one favored by advocates of a phenomenalist interpretation: the dynamical properties of bodies—their passive force of resisting motion and penetration, and their active force of initiating and sustaining motion—are only apparent. They are no more real than other physical properties of bodies, or, for that matter, so-called ‘secondary’ qualities. From the point of view of metaphysics, all the properties of bodies have the same ontological status: they are merely

aspects of the content of monads' perceptions of the world. Their 'reality' can be explained phenomenally in terms of the agreement among the perceptions of monads, but the properties themselves cannot be understood to be real in the strongest sense, namely formal modifications of the primitive active and passive powers of monads.

This again is a position that Leibniz could have adopted, consistent with his substance idealism. It would see him on his way to a strict dualism of the phenomenal and the real, in which the former was understood as a mere appearance, none of whose features could be understood in terms of the intrinsic properties of substance. This route was certainly open to Leibniz, and it might seem the most progressive course for his philosophy to take, leading directly toward Kant. But there is good reason to think that it was not Leibniz's preferred understanding of his philosophy. A residue of realism is inseparable from his thought and finds its final refuge in his consistent avowal of the reality of the active and passive forces of matter. His central arguments against Cartesian physics hinge on drawing a distinction between the spatiotemporal and kinematic properties of matter, on the one hand, and its dynamical properties, on the other. Without this distinction, it would be hard to articulate a recognizably Leibnizian position on the relationship between physics and metaphysics. Acknowledging the importance of this issue for Leibniz's philosophy, it is reasonable to conclude that he remains a matter realist in the only sense consistent with his substance idealism.^{lxxiii}

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Notes

ⁱ According to Robert Adams, ‘Leibniz was the first of the great modern philosophers to develop an idealist metaphysics’ (*Leibniz: Determinist, Theist, Idealist [Idealist]* (New York: Oxford University Press, 1994), 217-8). For dissenting opinions, which challenge the case for Leibniz’s idealism, see Peter Loftson, ‘Was Leibniz an Idealist?’, *Philosophy* 74 (1999), 361-85; Pauline Phemister, *Leibniz And the Natural World: Activity, Passivity and Corporeal Substances in Leibniz’s Philosophy* (Dordrecht: Springer, 2005); Peter Loftson and R. T. W. Arthur, ‘Leibniz’s Body Realism: Two Interpretations’, *The Leibniz Review* 16 (2006), 1-42. Leibniz himself uses the term to refer to Plato’s philosophy, which he contrasts with the materialism of Epicurus (GP IV 560/L 578). The term is given a different sense by Christian Wolff, who cites Berkeley (but not Leibniz) as an idealist: ‘Those are called “idealists” who concede only the ideal existence of bodies in our souls; and so *they deny the real existence of the world and bodies*’ (§36). ‘Idealists affirm that the soul, an immaterial substance, exists, and that the world which we call ‘material’ is a succession of ideas; but they deny that anything similar to these things exists outside of the soul’s ideas’ (§43) (*Psychologia Rationalis* (1734), in Wolff, *Gesammelte Werke*, ed. J. E. Cole, division 2, vol. 6 (Hildesheim: Olms, 1972)). A more restrictive definition appears in Alexander Baumgarten’s *Metaphysica* (1739; 7th ed., 1779; repr. Hildesheim: Olms, 1963), where the idealist is characterized as ‘admitting only spirits in this world’ (§402), by which Baumgarten means monads endowed with a capacity for intellection. Wolff’s definition picks out what I call ‘matter idealism’; Baumgarten’s, a version of ‘substance idealism’ (though not Leibniz’s).

ii ‘True substances are simple substances, or what I call *monads*. And I believe that there are only monads in nature, the rest being only phenomena that result from them’ (letter to Pierre Dangicourt, 11 September 1716; D III 499). Similar statements are found in the ‘Conversation of Philarète and Ariste’ (1712-15; GP VI 590/AG 265), and in late letters to Burcher De Volder (GP II 270/AG 181; GP II 275-6/AG 181-2; GP II 282/AG 185), the Electress Sophie (K III 173), Nicholas Remond (GP III 606/L 655; GP III 636/L 659), Giambattista Tolomei (GP VII 467-8), and Bartholomew Des Bosses. For an extended defense of this reading of Leibniz’s late metaphysics, see the Introduction to Brandon Look and Donald Rutherford (eds. and trs.), *The Leibniz-Des Bosses Correspondence [Leibniz-Des Bosses]* (New Haven: Yale University Press, 2007), as well as Adams, *Idealist*, and Donald Rutherford, *Leibniz and the Rational Order of Nature [Order]* (New York: Cambridge University Press, 1995).

iii Leibniz refers to this as ‘secondary matter—that is, matter as it actually occurs, invested with its derivative qualities’, as opposed to ‘primary matter’, or ‘primitive passive power’, which is an abstraction from the complete being of a substance (RB 222).

iv Daniel Garber distinguishes ‘strong realism’ as the view that for the world of bodies to be real there must be ‘something like matter’, which is distinct from monads. Since any non-monadic material principle (or primary matter) can exist only as a corporeal substance, this is tantamount to the claim that the world must contain real corporeal substances. Garber labels ‘weak realism’ the view that ‘while there is nothing over and above monads in the world, certain organized collections of monads (corporeal substances, for example) have a kind of reality that is of the same order as the reality of monads’. Here, too, an inventory of the world will include corporeal substances, in addition to monads; however, the former will be in some sense reducible

to the latter ('Leibniz and Fardella: Body, Substance, and Idealism' ['Fardella'], in P. Lodge (ed.), *Leibniz and His Correspondents* (Cambridge: Cambridge University Press, 2004), 123-40, at 134). For a defense of 'weak realism', see Richard Arthur, 'Infinite Aggregates and Phenomenal Wholes: Leibniz's Theory of Substance as a Solution to the Continuum Problem', *Leibniz Society Review* [later: *The Leibniz Review*], 8 (1998), 25-44. By the time of the Des Bosses correspondence (1706), Leibniz takes this position to be a non-starter. See again the Introduction to Look and Rutherford, *Leibniz-Des Bosses*.

^v For defenses of this reading of Leibniz's position, see Montgomery Furth, 'Monadology', *Philosophical Review* 76 (1967), 169-200, and Louis Loeb, *From Descartes to Hume: Continental Metaphysics and the Development of Modern Philosophy* (Ithaca: Cornell University Press, 1981). Margaret Wilson critically assesses the relationship between Leibniz's and Berkeley's views, and corrects a number of claims made by earlier authors ('The Phenomenalisms of Leibniz and Berkeley', in E. Sosa (ed.), *Essays on the Philosophy of George Berkeley* (Dordrecht: Reidel, 1987), 3-22). I concur with her conclusion that there is only a superficial similarity between the two philosophers' versions of idealism.

^{vi} Wherever possible I cite a published translation that has guided my own. Final responsibility for all translations rests with me.

^{vii} See 'On the Method of Distinguishing Real from Imaginary Phenomena' (A VI.iv 1498-1504/L 363-5); 'Observations on the Book concerning 'The Origin of Evil' Published Recently in London', §5 (GP VI 404/H 409-10); 'Conversation of Philarète and Ariste' (GP VI 590/AG 265); and the conclusion of his final letter to De Volder (19 January 1706): 'We do not have, nor

should we hope for, any mark [*notam*] of reality in phenomena, except that they agree with one another and with eternal truths' (GP II 283/AG 186).

viii Evidence of this tendency is found in the 1714 summary of his position composed for Nicholas Remond (GP III 622-4), and in the following texts: 'Letter to Queen Sophie Charlotte of Prussia, On What Is Independent of Sense and Matter' (1702) (GP VI 502-3/AG 189); *New Essays* II.xii.5 (RB 145); letters to Des Bosses of 5 February 1712 (GP II 435-6/AG 198-9), 16 June 1712 (GP II 451-2/L 605) and 29 May 1716 (GP II 521/AG 206); letter to Tolomei of 17 December 1705: 'And these entelechies, when joined with something passive, make up the whole universe... nor do we find any other composition of an extended thing except from the phenomena of different perceivers or the different phenomena of the same perceiver, [phenomena] indeed of such a number as there would be if any infinity of souls were imagined to observe a particular performance or the same soul were imagined always to observe a different performance at an infinity of times' (GP VII 468).

ix This dimension of Leibniz's thought parallels another strand in Berkeley's philosophy, which appeals to God's ideas as archetypes of sensible objects. Again, though, the distance between their views is considerable. On Berkeley's position, see Kenneth Winkler, *Berkeley: An Interpretation* (Oxford: Clarendon Press, 1989), ch. 7.

x See also GP II 474, 482. Hints of this position can be found in *DM*, §14, where Leibniz writes that God 'turns on all sides and in all ways the general system of phenomena that he finds it good to produce... and views all the faces of the world in all ways possible.... The result of each view of the universe, as seen from a certain position, is a substance which expresses the universe in conformity with this view' (A VI.iv 1549-50/AG 46-7). For a development of this

interpretation, see Donald Rutherford, 'Leibniz and the Problem of Monadic Aggregation' ['Aggregation'], *Archiv für Geschichte der Philosophie* 76 (1994), 65-90.

^{xii} 'According to me... bodies cannot even be substances properly speaking, since they are always only assemblies [*assemblages*] or results of simple substances, or of true monads, which could not be extended, nor consequently bodies. In this way, bodies presuppose immaterial substances' (1705; GP III 367). 'Matter really exists, but it is not a substance, since it is an aggregate or result of substances. I speak of matter insofar as it is secondary matter or extended mass, something that is hardly a homogeneous body' (after 1706; AG 274). See also GP II 268/AG 179; GP II 275/AG 181; GP II 282/AG 185; GP II 379; GP VII 561-2, 564; K III 289.

^{xii} 'Since monads or principles of substantial unity are everywhere in matter, it follows from this that there is also an actual infinity, for there is no part, or part of a part, that does not contain monads' (GP II 301). See also GM III 537/AG 167; GP II 276/AG 182; GP II 282/AG 185; GP VII 565.

^{xiii} Bertrand Russell offers a classic statement of this interpretation in *A Critical Exposition of the Philosophy of Leibniz* (London: Allen & Unwin, 1900; 2nd ed., 1937), 105-7. For recent defenses of it, see Nicholas Jolley, 'Leibniz and Phenomenalism' ['Phenomenalism'], *Studia Leibnitiana* 18 (1986), 38-51, and Adams, *Idealist*, 217-61.

^{xiv} I argue this point in section 3. A strength of the qualified realist account is that it overcomes the appearance of contradiction between passages in which Leibniz advocates a version of phenomenalism and those in which he characterizes matter as an aggregate or result of monads. The way in which it accomplishes this, however, makes it a stretch to describe the position as any kind of realism.

^{xv} I emphasize that the relevant notion of independence is ontological. In Leibniz's philosophy, nothing can exist without its being perceived—whether by itself and other perceivers, if it is a monad, or by God. The latter, however, is a commitment shared by any metaphysics that credits the existence of finite things to their creation by an omniscient God, and it is fully consistent with a robust realism. Although created things may not be able to exist independently of the continued exercise of God's power, their existence cannot depend solely on their being known by God. If it did, they would not be separate created beings at all, but merely divine ideas. Created monads, for Leibniz, do not exist by virtue of being perceived (by themselves or by God); they exist by virtue of what they are in themselves: an inherent power of acting. As I am construing it, matter realism claims a similar independence for the existence of matter.

^{xvi} 'Idealism and Greek Philosophy: What Descartes Saw and Berkeley Missed', *The Philosophical Review* 91 (1982), 3-40, at 38-40.

^{xvii} *Meditations* VI (AT vii. 80; CSM ii. 55). See also *Principles of Philosophy* II.1, 4 and 64 (AT viiiA. 40-2, 78-9; CSM i. 223-4, 247).

^{xviii} See Brian Greene, *The Fabric of the Cosmos* (New York: Vintage Books, 2004), 18.

^{xix} Monads themselves are non-spatial entities; they have no spatial dimensions and there is no real or absolute space in which they are located. Nevertheless, according to Leibniz, monads acquire a 'situation' through their representation of themselves as embodied. See GP II 253/AG 178; GP II 444/AG 201; *New Essays* II.xv.11 (RB 155).

^{xx} See *Cosmologia Generalis* (1731), §§219-221, in Wolff, *Gesammelte Werke*, ed. J. Ecole, division 2, vol. 4 (Hildesheim: Olms, 1964); and *Physical Monadology* (1756), props. 5-7, in

Kant, *Theoretical Philosophy, 1755-1770*, tr. and ed. D. Walford and R. Meerbote (Cambridge: Cambridge University Press, 1992). While differing on details, Wolff and Kant both characterize monads as simple (that is, partless) substances, endowed with an intrinsic force of acting and resisting, but they reject Leibniz's assumption that these simples are essentially mind-like, or that they have what Wolff calls 'representational force' (*vis repraesentativa*). In Baumgarten's *Metaphysica*, by contrast, we find combined the claims that every monad is 'endowed with a force for representing its universe' (§400), and that every monad is necessarily impenetrable, or outside [*extra*] other monads, from which Baumgarten infers that any aggregate of monads is extended (§§398-399). On the divergence between Leibniz and his successors on these issues, see Donald Rutherford, 'Idealism Declined: Leibniz and Christian Wolff' ['Wolff'], in Lodge (ed.), *Leibniz and His Correspondents*, 214-37, and Eric Watkins, 'On the Necessity and Nature of Simples: Leibniz, Wolff, Baumgarten, and the Pre-Critical Kant', *Oxford Studies in Early Modern Philosophy* 3 (2006), 261-314.

^{xxi} 'On the Method of Distinguishing Real from Imaginary Phenomena,' dated to between summer 1683 and winter 1685-86. See also 'Primary Truths' (A VI.iv 1648/AG 34); A VI.iv 1465-6/LOC 263-4.

^{xxii} *DM*, §12 (A VI.iv 1545/AG 44). For defenses of this reading, see R. C. Sleigh, Jr., *Leibniz & Arnauld: A Commentary on Their Correspondence* (New Haven: Yale University Press, 1990), 110-15, and Adams, *Idealist*, 228-32; for criticisms of it, see Samuel Levey, 'Leibniz on Precise Shapes and the Corporeal World', in Donald Rutherford and J.A. Cover (eds.), *Leibniz: Nature and Freedom* (New York: Oxford University Press, 2005), 69-94.

^{xxiii} ‘I believe that perception is involved in extension.... Extension is an attribute; that which is extended, or matter, is not a substance, but substances [*Extensio attributum est, extensum seu materia non substantia est, sed substantiae*]’ (GP II 183/L 519).

^{xxiv} Again: ‘Accurately speaking... extension is merely something modal like number and time, and not a thing, since it is an abstract designation of the continuous possible plurality of coexisting things, while matter is in fact this very plurality of things itself and hence an aggregate of the things which contain entelechies’ (GP II 195/L 532). ‘[E]xtension differs very greatly from passive power, since it expresses nothing but the situation of that which already has passive power’ (GP II 511). In a handful of texts Leibniz suggests a different account that severs any connection between the appearance of extension and an underlying reality of substances. Rather than expressing the ordered co-existence of a multitude of *things*, extension is expressive only of the ordered co-existence of a multitude of *phenomena* (see GP II 450/L 605; GP II 473; GP II 517/AG 203). On this account, extension has no import beyond its being a property of appearances, whose reality consists in their internal lawfulness and agreement with what appears to other perceivers. These two analyses of extension represent competing tendencies in Leibniz’s late philosophy, one of which seeks to preserve an intelligible relation between the content of perceptions of extension and an underlying reality, the other of which renders extension a mere appearance, whose content stands in no intelligible relation to an external ground. I return to this tension in section 8.

^{xxv} See GP II 171/AG 173, and the following sentence excluded from a late letter to De Volder: ‘For it can be said that matter is real insofar as there is a ground [*ratio*] in simple substances for the passivity observed in phenomena’ (GP II 276/AG 182).

^{xxvi} Leibniz's analysis thus isolates distinct and confused components of our perceptual representations of extension. The distinct content—a *plurality of coexisting* things of the *same nature*—is a partial, but truthful representation of reality. By contrast, the 'continuation' or 'diffusion' of this nature applies only to the appearance of extension and not to the reality represented by it. As Leibniz explains in another letter to De Volder: 'The *diffusion* that I conceive of in extension and that seems to have put into you the suspicion of some hidden paradox, I know not what, is, I claim, nothing but the continuation in which a part is similar to the whole.... But my unities, that is, my simple substances, are not diffused (as we commonly conceive of the flowing of a point), nor do they constitute a homogeneous whole, for the homogeneity of matter is brought about only through an abstraction of the mind when it [that is, matter] is considered as being only passive and therefore incomplete' (GP II 277/AG 183).

^{xxvii} 'Matter consists in a mass [*amas*] of simple substances without number' (GP VII 562). See also GP II 282/AG 185; GP VII 565. Counterexamples must be handled on a case-by-case basis, recognizing that Leibniz's usage is not free of ambiguities. One of the most pressing is the following from a letter to De Volder: '[P]roperly speaking, matter is not composed of constitutive unities, but results from them, since matter, that is, extended mass [*materia seu massa extensa*] is only a phenomenon grounded in things, like a rainbow or a parhelion, and all reality belongs only to unities' (GP II 268/AG 179). I assume that Leibniz uses 'matter' here to refer not to corporeal mass itself, but to its phenomenal appearance. In this sense, matter is not constituted from monads, but rather 'results' from them. For more on the resulting relation, see section 7.

^{xxviii} Kant, *Critique of Pure Reason* [*Critique*], A 7/B 11. The pagination refers to the first (A = 1781) and second (B = 1787) editions of the *Critique*.

^{xxix} Compare Aristotle's treatment of the topic (matter as substratum, matter as potentiality). Depending on the problems posed, and the background theories implicated in the formulation of them, analyses of the concept of matter can arrive at a variety of (possibly incompatible) conclusions.

^{xxx} Adams, *Idealist*, 217. Unless otherwise noted, subsequent parenthetical page references are to this work.

^{xxxi} In what follows I ignore the third layer, according to which 'phenomena are "real enough" if they belong to a scientifically adequate system of harmonious perceptions of a *single* perceiver' (261, emphasis added).

^{xxxii} For Adams, a key difference between Leibniz's and Berkeley's idealisms is that Leibniz does not identify bodies with sensible objects: 'for Leibniz the universe of corporeal phenomena is primarily the object, not of sense, but of science' (226). The appeal to 'a coherent, *scientifically* adequate story that appears all or most of the time, at least in a confused way, to all or most perceivers' is Adams' way of drawing the distinction between real and imaginary (or illusory) phenomena. The latter are phenomena that appear to some perceiver(s) at some time(s) but do not fit into the story an ideal science would tell of the world. As Adams acknowledges (257-8), in the correspondence with Des Bosses, Leibniz frames the standard of truth in terms of the phenomena perceived by God. Since God is said to see bodies 'exactly as they are in accordance with geometrical truth' (GP II 438/AG 199), the two ways of drawing the distinction can be taken as equivalent. See the discussion of 'divine phenomenalism,' in section 1 above.

xxxiii The standard of sameness is supplied by the canonical representation of the body within an ideal scientific theory (see note 32). To this would have to be added some account of the relation of that representation to the diverse perceptual contents of different monads.

xxxiv As Adams writes, ‘Leibniz does not believe that phenomena have any being except *in* the existence or occurrence of qualities or modifications of perceiving substances’ (223, Adams’ emphasis). For a related criticism of Adams’ account based on this point, see Paul Hoffman, ‘The Being of Leibnizian Phenomena’ [‘Being’], *Studia Leibnitiana*, 28 (1996), 108-18.

xxxv Leibniz also advances *a priori* arguments for this conclusion. See, for example, ‘Du Rapport General de Toutes Choses’ (A VI.iv 1614-15).

xxxvi For an influential defense of this reading, see Daniel Garber, ‘Leibniz and the Foundations of Physics: The Middle Years’, in K. Okruhlik and J. R. Brown (eds.), *The Natural Philosophy of Leibniz* (Dordrecht: Reidel, 1985), 27-130, now modified in Garber, ‘Fardella’, and ‘Leibniz and Idealism’, in Rutherford and Cover (eds.), *Leibniz: Nature and Freedom*, 95-107.

xxxvii Although Leibniz begins by explaining the notion of body in terms of the notion of corporeal substance, he ends with the claim that any body ultimately reduces to monads alone. Given this, he clearly has some explaining to do. Either he must show how a mass containing innumerable monads can possess the *per se* unity of a substance, or he must justify his use of the expression ‘corporeal substance’ to refer to something that is not, strictly speaking, a true unity. For a defense of the latter as the preferred interpretation of Leibniz’s position, see the Introduction to Look and Rutherford, *Leibniz-Des Bosses*.

^{xxxviii} Leibniz offers the same reasoning to Des Bosses: ‘When I say that there is no part of matter that does not contain monads, I illustrate this with the example of the human body or that of another animal, any of whose solid or fluid parts contain in themselves, in turn, other animals and plants’ (GP II 305).

^{xxxix} Samuel Levey, in a paper (‘Leibniz and Idealism’) presented at the 2005 Central APA meeting, takes this as a reason for rejecting an idealist reading of Leibniz’s metaphysics. According to Levey, Leibniz’s only compelling argument for the existence of monads presupposes the reality of corporeal substances. Hence, Leibniz cannot be a substance idealist, that is, he cannot maintain that monads alone are real.

^{xl} For a survey of Leibniz’s theory of ontological dependence, including the ‘being in’ relation, see Stefano Di Bella, ‘Leibniz’s Theory of Conditions: A Framework for Ontological Dependence’, *The Leibniz Review*, 15 (2005), 67-93. As far as I know, the application of the ‘being in’ relation to the case of matter and monads was first proposed in Donald Rutherford, ‘Leibniz’s ‘Analysis of Multitude and Phenomena into Unities and Reality’ [‘Analysis’], *Journal of the History of Philosophy* 28 (1990), 525-52.

^{xli} Letter to Friedrich Bierling, 14 January 1712 (GP VII 503). Cf. GP II 436/L 600, GP II 451/L 604.

^{xlii} See also the late essay ‘Metaphysical Foundations of Mathematics’: ‘We say that a thing *is in* some place or is an *ingredient* of something, if, when we posit the latter, we must also be understood, by that very fact and immediately, without the necessity of any inference, to have posited the former as well’ (GM VII 19/L 667).

^{xliii} Other examples: the notion of the genus is in the notion of the species; the individuals of a species are in the individuals of a genus; in a true proposition, the concept of the predicate is in the concept of the subject (GM VII 261; GP VII 244-5; A VI.iv 832-3).

^{xliv} Leibniz standardly uses the terms ‘part’ and ‘whole’ in a more restrictive sense than either ancient or modern treatments of mereology. For him, the part-whole relation obtains only in cases where the relata are homogeneous (GM VII 19/L 668; GM VII 274; GP VII 245). ‘Homogeneous things’ are defined variously as ‘things which are rendered [geometrically] similar by a transformation’ (A VI.iv 628/LOC 273), ‘things which have a common measure’ (ibid.), or ‘things which are generated by a continuous increase or decrease of the same thing’ (GM VII 283)—each of which is intended to apply only to continuous objects or quantities that stand in well-defined relations of proportionality. Things which fail to satisfy this condition are said to be ‘heterogeneous’. These include lines and points, and whole-part analogues such as those determined by relations of conceptual containment.

^{xlv} See Garber, ‘Fardella’, who argues for this as Leibniz’s position in the exchange. Garber focuses exclusively on the first of the four texts collected in the Academy edition under the title *Communicata ex disputationibus cum Fardella* (A VI.iv, N. 329). In what follows I draw on evidence from the second and third texts as well. The first text at least is reputed to be Fardella’s reporting of views expressed by Leibniz in conversation. All of the texts, however, are written in Leibniz’s hand. I assume that the second and third texts consist of further reflections by Leibniz on Fardella’s third objection.

xlvi In section 8, I suggest that in another sense monads, or their perceptions, can also serve as mediate requisites of the perceptions of other monads, insofar as they are ‘ideal causes’ of the latter.

xlvii ‘Composition is only in *concretas*.... [I]n actual substantial things, the whole is a result or coming together of simple substances, or rather of a multitude of real unities. It is the confusion of the ideal with the actual which has muddled everything and caused the labyrinth of *the composition of the continuum*. Those who make up a line from points have looked for the first elements in ideal things or relations, something completely contrary to what they should have done; and those who found that relations like number or space... cannot be formed by the coming together of points were wrong, for the most part, to deny that substantial realities have first elements, as if the substantial realities had no primitive unities, or as if there were no simple substances’ (‘Reply to Foucher’, 1695; GP IV 491/AG 146).

xlviii On the reality of force, see *Specimen dynamicum*, Part I (GM VI 235/AG 118) and Part II (GM VI 247/AG 130); on force as a modification, see the following 1711 letter to Christian Wolff: ‘It is necessary that conatus and impetus, and the actions that follow from these, since they are accidents, be modifications of something substantial or permanent that must itself be active, lest there be more in the modification than in what is modified’ (GLW 130).

xliv ‘Thus we must allow that [a body] has force or active power, taking ‘power’ in the more elevated sense which I explained a little way back, in which there is endeavor as well as faculty. I still agree with you, though, that the clearest idea of active power comes to us from the mind. So active power occurs only in things which are analogous to minds, that is, in entelechies; for strictly matter exhibits only passive power’ (RB 172). See also his correspondence with De

Volder (GP II 263-4; GP II 275-6/AG 181-2; GP II 281-2/AG 184-5), and his late exchange with Christian Wolff (discussed in Rutherford, ‘Wolff’).

ⁱ Robert Adams notes that in his solution to the Antinomy of Pure Reason (*Critique*, A 498/B 526), Kant defends a similar view with regard to things in themselves (Adams, ‘Things in Themselves’, *Philosophy and Phenomenological Research* 57 (1997), 801-25, esp. 810). See also Michael Radner (‘Unlocking the Second Antinomy: Kant and Wolff’, *Journal of the History of Philosophy* 36 (1998), 413-41), who interprets the argument of Kant’s Second Antinomy as responding to Wolff rather than to Leibniz.

ⁱⁱ As Leibniz writes in the *New System*: ‘A multitude can derive its reality only from *true unities*.... [I]n order to find these *real entities* I was forced to have recourse to a formal atom, since a material thing cannot be both material and, at the same time, perfectly indivisible, that is, endowed with a true unity.... Only metaphysical points or points of substance (constituted by forms or souls) are exact and real, and without them there would be nothing real, since without true unities there would be no multitude’ (GP IV 483/AG 142). See also GP II 276/AG 182; GP IV 492/AG 147; Grua 64; and Rutherford, ‘Analysis’.

ⁱⁱⁱ Summarizing his argument in a 1704 letter to De Volder, Leibniz writes: ‘Anything that can be divided into many (actually existing) things is aggregated from many things; and a thing that is aggregated from many things is not one except mentally, and has no reality except that which is borrowed from what it contains. Now, from this I inferred that there are therefore indivisible unities in things, since otherwise there will be no true unity in things, nor any reality that is not borrowed. And that is absurd. For where there is no true unity, there is no true

multitude. And where there is no reality except what is borrowed, there will be no reality at all, since in the end it must belong to some subject.’ (GP II 267). See also GP II 261.

liii ‘And so when it is asked what we understand by the word “substance”, I warn that above all aggregates should be excluded. For an aggregate is nothing other than all those things taken at the same time from which it results, [that is, those things] which clearly have their union from the mind alone on account of what they have in common, like a flock of sheep’ (letter to De Volder, 10 November 1703; GP II 256). ‘It is necessary to distinguish also between a substance and an aggregate of substances, between substance and substances. The distinctions of the scholastics are not always to be disparaged; for example, that which they draw between a true unity, an *unum per se*, and an aggregative unity’ (LH 58).

liv Strictly speaking, the only ultimately real things are individual substances and their modifications, among which are modifications that serve as the ‘foundations’ (*fundamenta*) for substances’ relations to each other. Leibniz denies that a relation can be regarded as an additional real entity that unites its relata. As he writes to Des Bosses, ‘I believe you will not admit an accident that is in two subjects at the same time. Thus I think the following about relations: paternity in David is one thing, filiation in Solomon another, but the relation common to both is a merely mental thing, whose foundation is the modifications of the individuals’ (GP II 486). See also GP II 517/AG 203; GP VII 401/AG 339; RB 145, 227. For further discussion, see Benson Mates, *The Philosophy of Leibniz: Metaphysics and Language* (New York: Oxford University Press, 1986), ch. 12, and Massimo Mugnai, *Leibniz’ Theory of Relations* (Stuttgart: Felix Meiner, 1992).

lv ‘Aggregates themselves are nothing but phenomena, since besides the ingredient monads everything else is added through perception alone, by virtue of the fact that they are perceived at the same time’ (GP II 517/AG 203). See also *New Essays* II.xxiv.1 (RB 226); ‘Conversation of Philarète and Ariste’ (GP VI 586/AG 263); and his 1716 letter to Samuel Masson (GP VI 625/AG 227). Glenn Hartz has claimed that in the case of aggregates of substances Leibniz’s core conception is that of a ‘mereological aggregate’: a mind-independent collection determined solely by its parts, in which ‘perceivers are altogether left out of the analysis’ (‘Leibniz’s Phenomenalisms’ [‘Phenomenalisms’], *Philosophical Review* 101 (1992), 511-49, at 526). For an effective response to this reading, see Paul Lodge, ‘Leibniz’s Notion of an Aggregate’ [‘Aggregate’], *British Journal for the History of Philosophy* 9 (2001), 479-84. Against an earlier version of the account presented here (Rutherford, ‘Aggregation’), Lodge argues in the same paper that (i) the act of mind required for the existence of aggregates is not merely an act of perception, but an intentional act of designating or ‘treating’ a plurality as a unity, and (ii) for most aggregates this mind must be a human mind, not the mind of God. Lodge’s reading works well for artifactual or conventional aggregates (a pair of diamonds, the Dutch East India Company, a herd), where we mark out groupings at will. It does less well in making sense of the foundations of Leibniz’s metaphysics—in particular, the aggregation of monads. Here aggregation is principally ascribed to an act of perception, and a foundational role is reserved for God. See GP II 438/AG 199, and Leibniz’s reading notes on Aloysius Temmik’s *Philosophia vera Theologiae et Medicinae Ministra* (1706): ‘[T]wo things are realized through the divine intellect alone: all eternal truths and, from among the contingent ones, relational truths.... Mere relations are not things that can be created; they arise from the divine intellect alone, without

adding some free volition. Such are any things that result from posited things, such as the totality of an aggregate' (V 1083).

^{lvi} This follows for Leibniz from the fact that the predicates *being* and *one* are 'convertible,' or mutually implicative. Thus, any qualification of the one entails a qualification of the other. See GP II 97/AG 86; *New Essays* II.xii.6 (RB 146); and his letter to Des Bosses of 11 March 1706: 'Being and one are convertible, but just as there is being by aggregation, so also there is one by aggregation, although this being and unity are semi-mental [*semimentalis*]' (GP II 304).

^{lvii} '[A]ll the reality of a group or of a herd is only in the individual men or in the sheep, without which there would be nothing else in the aggregate except the relation, whose reality (outside of its foundation) is only in the mind that thinks of it' (GP VI 516). See also GP II 267 (quoted above note 52); GP VI 625/AG 227; K III 173. Hoffman, 'Being', also makes this point.

^{lviii} See the study *Notationes Generales*: 'We should examine also how a *being by aggregation*, like an army or even an unordered multitude of men, is one, and how its unity and reality differ from the unity and reality of any one man. It seems that the most important difference to be noted is in the attributes and operations. Some attributes are said equally of the whole and of the parts, such as that the army seized a place on the battlefield of Marathon, which is true also of the individual soldiers; others can be said of the whole alone, such as that the army is thirty thousand [strong], and that it is arranged in a crescent-shaped battle line' (A VI.iv 555-6).

^{lix} The force of this distinction is driven home in Leibniz's philosophy by the fact that the spatial division of matter leads to smaller and smaller parts *ad infinitum*. Only an intellectual analysis of matter's essence delivers the conclusion that matter is constituted by monads. Here it

might be thought that the analogy to water breaks down, since the spatial decomposition of a drop of water will terminate in a complex collection of H₂O molecules. But even if we do in this way arrive at the right basic entities, we will not thereby have identified them as ‘constituents’ in Leibniz’s sense: things which are necessary for water to be and to be conceived. This presupposes an account of the kind of molecule that is presupposed by the existence of stuff with water’s properties of fluidity, conductivity, potability, etc.

^{lx} As mass, matter is inherently plural: it is *many* things, not one thing. Sometimes Leibniz is careful to preserve this distinction: ‘In the *mass of extension*, or rather, of extended things, or, as I prefer, in the multitude of things, I say that there is no *unity*, but rather innumerable unities’ (GP II 276/AG 182). At other times, he is less careful and conflates what is inherently plural (mass) and the collective unity of many things (an aggregate). For an example of this confusion, see GP VII 564 (discussed in Lodge, ‘Aggregate’, 469, 484). Leibniz’s tendency to blur this distinction is reinforced by his reliance on the terms ‘plurality’ and ‘multitude,’ which bear both a plural and a singular reading.

^{lxi} See the texts cited in note 2 above.

^{lxii} A parallel passage appears in the late (1714) ‘Metaphysical Foundations of Mathematics’ (GM VII 21-22/L 669). There, however, Leibniz substitutes for the verb *resultare* the unusual *prosultare*.

^{lxiii} Although he does not address the point explicitly, Leibniz takes for granted the following dependence between the resulting and being-in relations: if some aggregate is a *result* of certain prior entities, then those entities are also immediate requisites of it: ‘If when many things *A*, *B*, *C*, are posited, by that fact without any inference some one thing *L* is posited, the former are

called constituents, the latter what is constituted; the former what is contained, the latter the container; that is, the former are things existing in [*inexistentia*] the latter. And this is what we mean when we say that *A* is an immediate requisite of *L*' (A VI.iv 1002). See also A VI.iv 998, cited in the next note.

^{lxiv} '[F]or an aggregate it suffices that many beings, distinct from it, are understood to agree in a similar way with respect to it; namely if *A*, *B*, *C* are posited in the same way, and by that fact *L* is understood to be posited, *A*, *B*, *C*, will be the aggregated things and *L* the whole made by aggregation. In the meantime, it is true that the former are immediate requisites' (A VI.iv 998). 'A *relation* is an accident which is in several subjects, and it is only a result, that is, it supervenes on them without any change occurring; if many things are thought at the same time, it is their co-thinkability' (A VI.iv 866).

^{lxv} See the texts cited in note 55 above.

^{lxvi} '[F]rom many monads there results secondary matter, together with derivative forces, actions and passions, which are only beings by aggregation, and thus semi-mental things [*semimentalia*], like the rainbow and other well-founded phenomena' (GP II 306). See also GLW 138; GP II 268/AG 170; GP VI 590/AG 265.

^{lxvii} On the general features of monadic harmony, see *Monadology*, §§56-60.

^{lxviii} Note that on the qualified realist account, the existence of a privileged subclass of grounding monads is both a necessary and a sufficient condition for the existence of a body: a body exists if and only if there exists some plurality of monads whose existence is sufficient to determine the existence of the body in the sense specified above.

^{lxi} In this section, I assume Leibniz's commitment to substance idealism. A comprehensive treatment of his position would have to address the status of corporeal substance in his late thought. On this, see again the Introduction to Look and Rutherford, *Leibniz-Des Bosses*. For the charge that Leibniz's position on these issues cannot be rendered consistent, see Glenn Hartz, 'Why Corporeal Substances Keep Popping Up in Leibniz's Later Philosophy', *British Journal of the History of Philosophy* 6 (1998), 193-207. Hartz elaborates his reading in a recently published book: *Leibniz's Final System. Monads, Matter and Animals* (London: Routledge, 2007).

^{lxx} On ideal causation, see *Monadology*, §51; *Theodicy*, §66; and Leibniz's letter to Des Bosses of 24 January 1713: 'The modifications of one monad are the ideal causes of the modifications of another monad... insofar as reasons appear in one monad which, from the beginning of things, prompt God to produce modifications in another monad' (GP II 475).

^{lxxi} As Leibniz writes to Des Bosses (26 May 1712), 'if there were only souls or monads... all real extension (not to mention motion) would vanish, and its reality would be reduced to mere changes of phenomena' (GP II 444/AG 201).

^{lxxii} Leibniz appears to acknowledge this possibility in the version of the argument he presents to Arnauld in his letter of 30 April 1687. See GP II 96-7/AG 85.

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