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CAVENDISH ON THE INTELLIGIBILITY OF THE PROSPECT OF THINKING MATTER

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In *Principles of Philosophy* I:53 Descartes places a strong constraint on what can and cannot be the property of a body. He says that something is not a property of a body unless there is a conceptual tie between it and the essence of body:

> [E]xtension in length, breadth and depth constitutes the nature of corporeal substance; and thought constitutes the nature of thinking substance. Everything else which can be attributed to body presupposes extension, and is merely a mode of an extended thing; and similarly, whatever we find in the mind is simply one of the various modes of thinking. For example, shape is unintelligible except in an extended thing; and motion is unintelligible except as motion in an extended space; while imagination, sensation and will are intelligible only in a thinking thing.[1]

For Descartes, shape is a property of bodies because something cannot be a shape unless it is the shape of an extended thing. Motion is a property of bodies because something cannot have motion unless it has a location and so cannot have motion unless it is extended.[2] Our thoughts and volitions, however, cannot be conceived as having length, breadth, or depth.

Other Cartesians follow suit. In *Dialogues on Metaphysics and on Religion*, Malebranche argues that one of the reasons that we know that bodies do not think is that we cannot conceive of thought as standing in relations of distance:

> Can a thing extended in length, width, and depth reason, desire, sense? Undoubtedly not, for all the ways of being of such an extended thing consist only in relations of distance; and it is evident that these relations are not perceptions, reasonings, pleasures, desires, sensa-

> tions—in a word, thoughts. Therefore this *I* that thinks, my own substance, is not a body, since my perceptions, which surely belong to me, are something entirely different from relations of distance.[3]

For Malebranche, "the ways of being" of a body are restricted to what can be understood as bearing relations of distance to other things. It is impossible to conceive of a thought as having a size, or as being a certain distance from another thought or from a body, so a thought is not a body or the property of a body. In a similar argument, Leibniz concludes that a materialist view of mind is a non-starter because there is no way to explain how thought could arise from the figures and motions of bodies. He writes that

> It must be confessed, moreover, that perception and what depends on it are inexplicable by mechanical reasons, that is, by figures and motions. If we pretend that there is a machine whose structure enables it to think, feel and have perception, one could think of it as enlarged yet preserving its same proportions, so that one could enter it as one does a mill. If we did this, we should find nothing within but parts which push upon each other; we should never see anything which would explain a perception.[4]

A lesser-known participant in the seventeenth-century debate on the intelligibility of the prospect of thinking matter is Margaret Cavendish. One reason to engage a discussion of the views of Cavendish is that she offers an early and compelling answer to the question of whether or not the epistemic issue of the lack of a conceptual connection between matter and thinking has any bearing on the ontological issue of whether or not bodies think. Another is that she is in possession of positive and very strong arguments for the view that ideas, volitions, and other mental items are properties of bodies. Another is that she anticipates arguments and views that are found in some of the more famous philosophers that follow her—for example, Locke, Leibniz, and Hume. Another is that she is an important precursor to contemporary philosophers of mind.

I

Cavendish lived and wrote in the thick of the mechanistic revolution of the seventeenth century. Through her husband, who had organized meetings of the "Cavendish Circle" in the 1640s, she interacted with such figures as Hobbes, Descartes, Mersenne, Gassendi, and Kenelm Digby.[5] Unfortunately and sadly for her and for us, she had no written philosophical correspondence with any of these philosophers. When they would not critically correspond with her in print, she engaged their views critically in the form of a correspondence between herself and a fictional third person.[6] Much of this and the rest of her corpus is

a sustained attack against conceptions of matter that are in her view inadequate. If these conceptions are not too barren to allow matter to think, they otherwise fail to capture its vitality and animation.[7]

Cavendish's view that minds are material is part of her larger commitment to a kind of naturalism. She reflects this commitment throughout her corpus:

> Nature is material, or corporeal, and so are all her Creatures, and whatsoever is not material is no part of Nature, neither doth it belong any ways to Nature.[8]

One of her arguments for the view that minds are material is that minds move and that things move only if they are material. She writes,

> Though Matter might be without Motion, yet Motion cannot be without matter; for it is impossible (in my opinion) that there should be an Immaterial Motion in Nature.[9]

Mental items like ideas and volitions are the ideas and volitions of a mind, and because a person's mind moves along with its body, its ideas and volitions are the ideas and volitions of a material thing. Here Cavendish is anticipating a line of argumentation that we later find in Locke:

> No Body can imagine, that his Soul can think, or move a Body at *Oxford*, whilst he is at *London*; and cannot but know, that being united to his Body, it constantly changes place all the whole Journey, between *Oxford* and *London*, as the Coach, or Horse does, that carries him; and, I think, may be said to be truly all that while in motion.[10]

Here Locke is only hinting at the conclusion that minds are material, but Cavendish draws that conclusion explicitly.[11] She takes as axiomatic that a thing can move only if it is material. She also holds that minds that move have a location and that things do not have a location unless they are material:

> Place [is] an attribute that belongs onely to a Body. . . .[12]

> I would ask those, that say the Brain has neither sense, reason, nor self-motion, and therefore no Perception; but that all proceeds from an Immaterial Principle, and an Incorporeal Spirit, distinct from the body, which moveth and actuates corporeal matter; I would fain ask them, I say, where their Immaterial Ideas reside, in what part or place of the Body? . . . [I]f it [the spirit] have no dimension, how can it be confined in a material body?[13]

According to Cavendish, properties like motion and location pertain only to bodies, and because our minds travel with our bodies and are housed in them, they are material. To the opponent who argues that it is

naïve to appeal to the premise that minds move, and that the use of the language of bodies to speak of minds is at best metaphorical, Cavendish replies that if such language is even the slightest bit illuminating, it is to some degree descriptive.[14] If there is any sense in which minds move, they are material if there can be no immaterial motion. Cavendish is in effect asking us what we think we are engaging when we engage the mind of another person. If the person is before us, his mind is before us as well. If the person moves from one place to another, his mind is carried along with him. A mind is collection of bodies in a human body, and among its properties are the same ideas and volitions that the substance dualist would regard as immaterial.[15]

Another argument that Cavendish offers for the materiality of mind is from our inability to detect or refer to things that are not material. Immaterial things may exist, and they may even be in our vicinity, but if so they are nothing to us:

> there may be supernatural spiritual beings or substances in Nature, without any hinderance to Matter or corporeal Nature. The same I may say of the natural material, and the divine and supernatural Soul; for though the divine Soul is in a natural body, and both their powers and actions be different, yet they cause no ruine or disturbance to each other.[16]

Our words 'mind' and 'soul' are referential, but they do not refer to things that we cannot encounter and give a name.[17] We cannot conceive of things that are immaterial, and our language cannot pick them out:

> Wherefore no part of nature (her parts being corporeal) can perceive an immaterial; because it is impossible to have a perception of that which is not perceptible, as not being an object fit or proper for corporeal perception.[18]

> . . . [A]ll that is called Immaterial, is a Natural Nothing, and an Immaterial Natural Substance, in my opinion, is non-sense.[19]

Here Cavendish is presupposing a standard materialist argument from mind-body interaction: that nothing can interact or come into contact with a body but a body.[20] She is extending that argument. Our bodies interact with our minds, and so our minds must be material; but anything that our minds detect must be material as well. Our word 'nature' refers not to the entirety of being but to the set of things that we can detect, and so all of nature is material. Our words 'mind' and 'soul' refer as well.

A final argument that Cavendish offers for the view that minds are material begins with a rejection of the Epicurean view that the order that we encounter in nature arises by chance. She writes,

> [T]hough the Opinion of Atoms is as Old as from the Time of Epicurus, yet my Conceptions of their Figures, Creating and Disposing, are New, and my Own. . . . It is not probable that the Substance of Infinite matter is only Infinite, Small, Senseless Fibres, Moving and Composing all Creatures by Chance, and that Chance should produce all things in such order and Method, unless every Single Atome were Animated Matter, having Animated Motion, which is Sense and Reason, Life and Knowledge.[21]

Cavendish thinks that as of yet there is no satisfactory account of the orderly behavior of bodies. In particular, she wants to know what it is that keeps a body on its rails when there are so many other directions in which it might go. Something must keep bodies in line, and to do its job it must be active, but also knowledgeable, and perceptive:

> If nature were not Self-knowing, Self-living, and also Perceptive, she would run into Confusion: for there could be neither Order, nor Method, in Ignorant motion. [22]

Cavendish rejects the view of some her contemporaries that there exists something in addition to bodies that secures their orderly behavior. For example, she rejects the view of Henry More that God has created a proxy so that He does not have to do each and every thing on His own:

> I cannot imagine why God should make an Immaterial Spirit to be the Proxy or Vice-gerent of his Power, or the Quarter-master General of his Divine Providence, as your Author is pleased to style it, when he is able to effect it without any Under-Officers, and in a more easie and compendious way, as to impart immediately such self-moving power to Natural Matter, which man attributes to an Incorporeal Spirit.[23]

Cavendish rejects the view not only because she thinks that we cannot speak meaningfully about God. Even if we could speak meaningfully about God, we would conclude that whatever He would pack into such a proxy He would have packed into bodies in the first place.[24] Cavendish thereby rejects the view that the orderly behavior of bodies is secured by laws of nature.[25] If we take seriously what such laws would have to be, we will appreciate that in positing them we are positing more than we would like to admit.[26] The laws would have to be knowledgeable and perceptive. As part of nature, they would be material. They would not be anything in addition to the knowledgeable and perceptive bodies that Cavendish has already included in her ontology.[27]

Cavendish offers three arguments for the view that minds are material. Her first order of business is to establish *that* minds are material. Only then does she address the question of whether or not we understand how matter thinks. She argues that we do not and that it is not surprising that we do not, as we know the answer to hardly any of the

how and why questions about the processes that we encounter in nature. For example,

> we have only found that Effect of the Load-stone, as to draw Iron to it, but the Attracting motion is in obscurity, being Invisible to the Sense of Man, so that his reason can only Discourse, and bring Probabilities to Strengthen his Arguments, having no Perfect Knowledge in that, nor in any thing else; besides, that Knowledge we have of several things, comes as it were by Chance, or by Experience, for certainly, all the Reason man hath, would never have found out that one Effect of the Load-stone, as to draw Iron, had not Experience or chance presented it to us, nor the Effect of the Needle.[28]

For Cavendish, there is "Natural Magick,"[29] even in the case of things that we take to be wholly unmysterious:

> the Load-stone may work as various effects upon several Subjects as Fire, but by reason we have not so much Experience of one as the other, the Strangeness creates a Wonder, for the Old saying is, that Ignorance is the Mother of Admiration, but Fire, which produces greater Effects by Invisible motions, yet we stand not at such Amaze, as at the Load-stone, because these Effects are Familiar unto us.[30]

Action-at-a-distance is mysterious, Cavendish insists, but so is the power of fire, and the "Knowledge we have of several things" is on a par. This is a sustained theme throughout her corpus.[31] For example, we do not understand why the bodies that are involved in digestion would work together to digest, rather than to do something else.[32] Nor do we know why the bodies that compose water and ice are transparent, when the bodies that come together to form other beings are not.[33] We can speculate on these, but in the end

> Natures actions are not onely curious, but very various; and not onely various, but very obscure.[34]

Thinking matter is no exception:

> you might as well enquire how the world, or any part of it was created, or how the variety of creatures came to be, as ask how Reason and sensitive corporeal Knowledg was produced.[35]

Bodies in the natural world clearly have capacities, Cavendish is maintaining, and it is by such capacities that they do what they do. We do not understand why a particular body or configuration of bodies would have the particular capacities that it does, and there is no special problem posed by the fact that we cannot understand how matter thinks.

Cavendish offers what she takes to be overwhelming arguments for the view that minds are material, but she anticipates that the view will

be rejected nonetheless. There are three philosophical prejudices that she thinks are especially hostile to her view, and she addresses these to shore up her argumentation. First, she expects that philosophers will not abandon the belief that reality is wholly intelligible. If we are presented with an account according to which something is not wholly intelligible, we will conclude that the account must be wrong. She says,

> Shall or can we bind up Gods actions with our weak opinions and foolish arguments? Truly, if God could not act more then Man is able to conceive, he were not a God of an infinite Power; but God is Omnipotent, and his actions are infinite, supernatural, and past finding out; wherefore he is rather to be admired, adored and worshipped, then to be ungloriously discoursed of by vain and ambitious men, whose foolish pride and presumption drowns their Natural Judgment and Reason.[36]

We do not know a priori that bodies have the powers that they do, according to Cavendish, as they might have been created with other powers. But that means that we will never understand why a given body would have the powers that it in fact has. Things are not as intelligible to our minds as we would like to believe, and we should proceed accordingly:

> there are none more intemperate than Philosophers; first, in their vain Imaginations of nature; next, in the difficult and nice Rules of Morality: So that this kind of Study kils all the Industrious Inventions that are beneficial and Easy for the Life of Man, and makes one fit onely to dye, and not to live. But this kind of Study is not wholly to be neglected, but used so much, as to ballance a Man, though not to fix him; for Natural Philosophy is to be used as a Delight and Recreation in Mens Studies, as Poetry is, since they are both but Fictions, and not a Labour in Mans Life. But many men make their Study their Graves, and bury themselves before they are dead.[37]

Cavendish is not suggesting that we abandon the effort to solve the great problems of philosophy. She has independent arguments for the view that thinking is material and independent reasons for thinking that if we assume that reality is wholly intelligible, we will go awry.

A second reason that we might resist the view that minds are material is that we are suspicious of the idea that there are physical things that are not tangible. Cavendish writes,

> But by reason this Matter is not subject to our gross senses, although our senses are subject to it, as being made, subsisting and acting through the power of its actions, we are not apt to believe it, no more then a simple Country-wench will believe that Air is a substance, if she neither hear, see, smell, taste, or touch it, although Air touches

> and surrounds her: But yet the effects of this animate matter prove that there is such a matter. [38]

In holding that minds are corporeal, Cavendish is not committed to the view that minds are overtly sensible. Instead, she thinks that corporeal things come in different forms. Some objects are transparent. There is also "lucent matter," along with "gross vapours" and other things in between.[39] For Cavendish, "Nature delights in variety" (ibid., 416). It represents the whole spectrum of material beings—visible and invisible, tangible and intangible. There are a number of things that we cannot see or touch that we wrongly judge to be incorporeal, and mental states are among them:

> The Conceptions of the Brain, in my opinion, are not immaterial, but Corporeal; for though the corporeal motions of the brain, or the matter of its conceptions, is invisible to humane Creatures, and that when the brain is dissected, there is no such matter found, yet that doth not prove, that there is no Matter, because it is not so gross a substance as to be perceptible by our exterior senses.[40]

Like air, we detect mental states, and the fact that they are not overtly sensible does not entail that they are incorporeal.

A third reason that Cavendish anticipates that her view will be resisted is that she is working within a tradition in which that view is a terrible disappointment.[41] She writes,

> I perceive man has a great spleen against self-moving corporeal nature, although himself is part of her, and the reason is his ambition; for he would fain be supreme, and above all other creatures, as more towards a divine nature: he would be a God, if arguments could make him such.[42]

Cavendish does not accept a conception of matter according to which matter is low-grade being. Her view that minds are corporeal is not the view that minds are

> composed of raggs and shreds, but it is the purest, simplest and subtillest matter in Nature.[43]

Cavendish takes the processes that are traditionally identified as material to be wondrous and impressive. The processes that she would identify as material but that others would identify as immaterial she takes to be even more so. Unlike many of her philosophical opponents, she is not disappointed by the result that minds are material. She thinks on the contrary that the result is a source of hope. For example, if we appreciate that minds are corporeal, we will be able to come up with better and more systematic treatments of mental illness.[44] Cavendish highlights the obvious facts that a person's mood and energy are affected

by nutrition,[45] and that old age and injury to the brain can neutralize some of our cognitive functions.[46] It is agreed that a person's body requires cultivation if it is to grow strong, and that physical limitations put constraints on how such cultivation can proceed, but Cavendish would argue that the same considerations apply to the development of a mind. She writes,

> The Mind is a Garden where all manner of Seeds be sown.[47]

> [A]ll Brains are not fertile alike, but are like Islands that are neer the Poles, which are inhabited with nothing but Wild Beasts, as Ruff and Rude Bears; others, though they be neerer the Sun, yet are Incipid and Barren, being full of Heaths, bearing nothing but Mossy ignorance, or else Moorish, being full of Boggs of Sloth, where Lives are swallowed up, sinking insensibly; and some other Brains have rich soils, but want the manuring of Education.[48]

We end up looking in the wrong place for answers to questions of human development if Cavendish is right that minds are material and if we continue to assume that they are not.

II

A number of contemporary philosophers of mind have worried that there is a special problem posed by the fact that there is no way to understand how matter thinks.[49] Cavendish ignores the question of whether or not we can understand how matter thinks and instead focuses on the project of locating arguments for the view that matter thinks. Her contemporary allies are to be found elsewhere.

For example, in the work of Donald Davidson there is an argument for the view that matter thinks from the premise that every causal relation admits of a description that instantiates a universal law.[50] Mental events like willings cause bodily events like arm-movements, but there are no universal psycho-physical laws. The law that is instantiated in such an interaction is physical, and the elements that enter into the interaction can be described in completely physical terms. Davidson appeals to the nomological character of causality to derive the result that whatever is mental is physical.[51] Cavendish appeals to the motion of minds, and the applicability of physical predicates to them, to derive the result that minds are material. Like Davidson, she does not limit bodies to properties like size, shape, and motion.[52]

Similarly, John Searle derives the result that mental items like thoughts and volitions are properties of macroscopic bodies from the premises (1) that the universe "consists entirely of mindless, meaningless physical particles,"[53] (2) that minds exist with conscious, subjective,

intentional states, and (3) that a composite body often has features that are not had by the bodies that compose it, but that are causally dependent on these.[54] For Searle, the most basic physical particles do not think, but they (somehow) obey laws of nature and then as a result of their behavior come together in collections of bodies that do think. Cavendish is happy to attribute mentality to even the smallest of bodies, in part because she presses the question of what it is that has them behaving in accordance with laws.[55]

Cavendish's materialist view of mind is also a close relative of eliminative materialism, if that view is to be understood as recommending that the language of thoughts and desires is to be discarded as a result of being laden by a theory whose central tenets are false. Like Cavendish, the eliminative materialist holds that fundamentally all that exists are bodies and their properties. Strictly speaking he denies that minds exist, but Cavendish would not necessarily take issue with him on this count. When the eliminative materialist denies that a thing exists, for example phlogiston or an alchemical essence, he is not reflecting that the terms 'phlogiston' and 'alchemical essence' have never referred to anything, but instead that the content of the concept of phlogiston (for example) is permeated by a larger theory and that the theory and its concepts stand or fall together.[56] The eliminativist does not thereby deny that there exists something that is very much like phlogiston, but he insists that strictly speaking nothing answers to the concept of phlogiston, and hence that nothing is phlogiston. He also thinks that if we continue to use the language of phlogiston, we will continue to accept the core doctrines of the theory to which that language is tethered, and we will continue to be misled. In the same vein, the concept of a thought or any other mental item might be said to be historically bound up with a number of doctrines—that thinking is something that is done by immaterial thinking substances; that mental events are independent of the processes that occur in the brain; that minds are radically free in a way that bodies are not; that minds are more noble than bodies; that our mental states (and our selves) are always best known by introspection; and others. To allow that something answers to the concept of thought is on the eliminativist's view to implicitly accept a theory that trails it on every turn.[57] Cavendish would certainly agree that we should reject the language of mentality if it is inextricably bound up with any of the above doctrines or if it cannot help but mislead us in matters (like cognitive development and self-knowledge) that are of central importance in our lives. She would also align herself with the program of looking to the physical sciences in considering questions of mental illness and self-improvement.[58] Cavendish is not an eliminativist,[59] but she would have much in common with the eliminativist if she had considered the

question of the theory-ladenness of predicates. She might (and reasonably so) reject the view that the terms of a language are inextricably wed to a larger theory, but she would support the project of severing any tight associations between the terms of our language and doctrines that are harmful and false.

Cavendish disagrees with many of her contemporaries that minds are material only if they can be understood as ways of being extended. She offers positive arguments for the view that minds are material, and in so doing offers a reminder that the epistemic question of whether or not there is a conceptual tie between matter and thinking is orthogonal to the ontological question of whether or not matter thinks. She anticipates the views of some of her more famous seventeenth-century contemporaries, and also the views of philosophers of mind today. Her view is an important chapter in the history of materialism, and it may even be correct.[60]

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NOTES

1. *Principles* I:53, AT 8A:25. Here I am using the translation in John Cottingham, Robert Stoothoff, and Dugald Murdoch, *The Philosophical Writings of Descartes, Volume I* (Cambridge: Cambridge University Press, 1985). I use "AT" to refer to the pagination in Charles Adam and Paul Tannery, *Ouevres de Descartes*, Volumes I–XII (Paris: Vrin, 1996).

2. See also *Principles* II: 25–27, AT 8A:53–55. Note that Descartes allows that minds and bodies are alike in sharing features like duration and substantiality (*Principles* I:53, AT 8A:25; *Conversation with Burman*, AT 5:156), that minds and bodies causally interact and that minds are spread throughout bodies (*Fifth Replies*, AT 7:388–390), and that "semblances" of extended things seem to be extended themselves (ibid.). Still, he insists that minds and bodies do not have enough in common that a thought or volition could ever be understood as a way of being extended.

3. Nicholas Malebranche, *Dialogues on Metaphysics and on Religion*, trans. and ed. Nicholas Jolley and David Scott (Cambridge: Cambridge University Press, 1997), p. 6.

4. G. W. Leibniz, *Monadology*, section 17, p. 644, in *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, 2nd Edition, ed. Leroy E. Loemker (Dordrecht: D. Reidel Publishing Company, 1969).

5. See Sarah Hutton, "In Dialogue with Thomas Hobbes: Margaret Cavendish's Natural Philosophy," *Women's Writing*, vol. 4, no. 3 (1997), pp. 422–423;

Katie Whitaker, *Mad Madge: The Extraordinary Life of Margaret Cavendish, Duchess of Newcastle, the First Woman to Live by Her Pen* (New York: Basic Books, 2002), pp. 92–94, 422–423; and Stephen Clucas, "The Atomism of the Cavendish Circle: A Reappraisal," *The Seventeenth Century*, vol. 9 (1994), pp. 256–264.

6. This is Cavendish's *Philosophical Letters*. Cavendish offers three diagnoses of her inability to establish a philosophical correspondence with the prominent philosophers of her time. One is that she is attempting to overthrow standard philosophical conceptions (e.g., that of matter), and so the claims that she makes in the light of her own conceptions come off as incoherent. (See *Observations upon Experimental Philosophy*, ed. Eileen O'Neill [Cambridge: Cambridge University Press, 2001], pp. 12–13, 21; and Margaret Cavendish, *Philosophical Letters* [London: printed in the year 1664], pp. 506–507.) Another is that she does not write in the language of the learned. (See *Philosophical and Physical Opinions* [London: printed for William Wilson, 1663], pp. 442–443, and preface, second page.) She is trying to overthrow this language, so she cannot write in it and at the same time express her philosophical system. The third is that "no man dare or will set his name to the contradiction of a Lady" (preface to *Philosophical Letters*, fifth page). See also Eileen O'Neill, "Disappearing Ink: Early Modern Women Philosophers and Their Fate in History," in *Philosophy in a Feminist Voice*, ed. Janet A. Kourany (Princeton, N.J.: Princeton University Press, 1998), pp. 22–23; and Jonathan Ree, "Women Philosophers and the Canon," *British Journal for the History of Philosophy*, vol. 10 (2002), pp. 641–652. There is one letter, from Digby to Cavendish, but it makes no reference to her philosophical views. See *A Collection of Letters and Poems: Written by Several Persons of Honour and Learning, upon Divers Important Subjects, to the Late Duke and Dutchess of Newcastle* (London: Printed for Langly Curtis in Goat-Yard on Ludgate Hill, 1678), p. 65. Note that spellings throughout are those found in the sources.

7. See Eileen O'Neill, "Introduction," in O'Neill, ed., *Observations upon Experimental Philosophy*, p. 15; and Hutton, "In Dialogue with Thomas Hobbes," pp. 423–424.

8. *Philosophical Letters*, 320–321. See also *Observations upon Experimental Philosophy*, pp. 197, 215, 221; Margaret Cavendish, *Grounds of Natural Philosophy*, ed. Colette V. Michael (West Cornwall, Conn.: Locust Hill Press, 1996), pp. 1–3; and *Philosophical Letters*, 12, 192, 238, 529.

9. *Grounds of Natural Philosophy*, 2. See also *Philosophical Letters*, 77, 402, 421, and *Philosophical and Physical Opinions*, 86.

10. See John Locke, *An Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Clarendon Press, 1975), II.xxiii.20, 307.

11. Nicholas Jolley has argued that the doctrine of thinking matter is lurking throughout Locke's corpus, and that one of Leibniz's central concerns in *New Essays on Human Understanding* is to expose and then undermine it. (See Nicholas Jolley, *Leibniz and Locke: A Study of the New Essays on Human Understanding* (Oxford: Clarendon Press, 1984), pp. 18–25.) Locke is explicit that for all we know God has endowed matter with the power of thinking (*Es-*

say, IV.iii.6, 540–1). In addition, he says, "If they say, The Man thinks always, but is not always conscious of it; they may as well say, His Body is extended, without having parts. . . . But 'tis but the defining the Soul to be a substance, that always thinks, and the business is done. If such a definition be of any Authority, I know not what it can serve for, but to make many Men suspect, that they have no Souls at all, since they find a good part of their Lives pass away without thinking" (*Essay*, II.i.19, 115–6). Against Descartes, Locke accepts the common-sense datum that souls often are not thinking, especially while asleep (*Essay*, II.i.12–18). If nothing has no properties, and if a substance persists over time, the substance that undergirds our thinking is not immaterial. Locke goes out of his way to announce that he will not take a stand in the *Essay* on the question of whether or not minds are material (*Essay*, I.i.2, 43), but his scattered comments suggest that if we have to locate a substance to serve as the ground of our part-time thinking, matter is the best candidate. His comments in the correspondence with Stillingfleet are more suggestive still. (See for example *The Works of John Locke* (London, 1823), Volume IV, 33–4, 466.) See also Nicholas Jolley, *Locke: His Philosophical Thought* (Oxford: Oxford University Press, 1999), pp. 85–99; John W. Yolton, *Thinking Matter: Materialism in Eighteenth-Century Britain* (Minneapolis: University of Minnesota Press, 1983), pp. 14–27; Edwin McCann, "Locke's Philosophy of Body," in *The Cambridge Companion to Locke*, ed. Vere Chappell (Cambridge: Cambridge University Press, 1994), pp. 67–76; Jonathan Bennett, "Locke's Philosophy of Mind," in Chappell, ed., *The Cambridge Companion to Locke*, pp. 98–108; and Daniel Garber, "Soul and Mind: Life and Thought in the Seventeenth Century," in *The Cambridge History of Seventeenth-Century Philosophy*, Volume I, ed. Daniel Garber and Michael Ayers (Cambridge: Cambridge University Press, 1998), pp. 785–786.

12. *Philosophical Letters*, 8. Here Cavendish is echoing the argument that Hobbes offers in *Leviathan*: "The World, (I mean not the Earth onely, that denominates the Lovers of it *Worldly* men, but the *Universe*, that is, the whole masse of all things that are) is Corporeall, that is to say, Body; and hath the dimensions of Magnitude, namely, Length, Breadth, and Depth: also every part of Body, is likewise Body, and hath the like dimensions; and consequently every part of the Universe, is Body; and that which is not Body, is no part of the Universe: And because the Universe is All, that which is no part of it, is *Nothing*; and consequently *no where*. Nor does it follow from hence, that Spirits are nothing: for they have dimensions, and are therefore really Bodies" (Thomas Hobbes, *Leviathan*, ed. Richard Tuck [Cambridge: Cambridge University Press, 1996], xlvi.15, 463). See also Hutton, "In Dialogue with Thomas Hobbes," pp. 426–427.

13. *Philosophical Letters*, 185–6. See also pp. 197, 225–226.

14. Leibniz argues that because the fundamental elements of reality are immaterial, and because predicates like contact and transposition do not apply to immaterial things, these predicates do not apply to the fundamental elements of reality (*Monadology* 7). But he proceeds to flesh out the nature of a monad with the metaphorical language of windows (*Monadology* 7), dizziness (21), ponds (67) and spatial perspective on a city (57). Cavendish agrees that the language of contact and position applies only to bodies, but she concludes from

that that minds are material. For a related discussion of the difficulty that the substance dualist encounters in attempting to describe thought without using the language that we use to describe bodies, see Tad Schmaltz, *Malebranche's Theory of the Soul* (Oxford: Oxford University Press, 1996), pp. 127–162.

15. Cavendish cannot say anything very precise about the boundary between the bodies that compose a particular human mind and those that compose the rest of a human body. She thinks that minds have parts, and that (in the process of being educated, for example) they gain and lose bodies over time. See *Philosophical Letters*, 162; *Grounds of Natural Philosophy*, 48; and *Philosophical Letters*, 223.

16. *Philosophical Letters*, 225. See also *Philosophical Letters*, 320. Similar passages are in *Grounds of Natural Philosophy*, 240; and *Philosophical Letters*, 137, 162, 220.

17. Cavendish uses 'mind' and 'soul' interchangeably when talking about natural mind and soul. See for example *Philosophical and Physical Opinions*, 332.

18. *Observations Upon Experimental Philosophy*, 89. See also *Philosophical Letters*, 215. For a very similar line of argumentation, see Lucretius, *On the Nature of Things*, trans. and ed. Anthony M. Esolen (Baltimore: The Johns Hopkins University Press, 1995), pp. 33, 37, 95–96; and Baruch Spinoza, *Short Treatise on God, Man, and His Well-Being,* in *Spinoza: The Complete Works*, ed. Michael Morgan, trans. Samuel Shirley (Indianapolis: Hackett Publishing Company, 2002), p. 43. Cavendish read Lucretius; his influence on her views is especially apparent throughout *Poems and Fancies*. See Margaret Cavendish, *Poems and Fancies* (London: printed by T. R. for J. Martin and J. Allestrye, 1653). See also Jacqueline Broad, *Women Philosophers of the Seventeenth Century* (Cambridge: Cambridge University Press, 2002), pp. 44–45.

19. *Philosophical Letters*, 321. Cavendish holds that we cannot conceive or think of anything that is not material. In some texts she appears to allow an exception—she speaks of God, though He is immaterial. (See *Grounds of Natural Philosophy*, 240; *Philosophical Letters*, 182–3, 217, 315, 430; *Observations Upon Experimental Philosophy*, 220–1; and Lisa Sarasohn, "A Science Turned Upside Down: Feminism and the Natural Philosophy of Margaret Cavendish," *The Huntington Library Quarterly*, vol. 47 [1984], pp. 291–293.) Many of these passages highlight God's incomprehensibility and transcendence. For example, in *Observations Upon Experimental Philosophy* she writes that "God is a spiritual, supernatural, and incomprehensible infinite" (p. 220). In *Philosophical Letters*, she says that "when we name God, we name an Unexpressible, and Incomprehensible Being" (p. 315). One interpretive option with respect to such passages is to say that in highlighting God's utter incomprehensibility Cavendish is attempting to communicate that we cannot conceive of God after all. Another interpretive option is to say that she is sometimes willing to speak in the language of religious orthodoxy. In at least a couple of such cases (which I consider below), she puts forward premises about God that her opponents would accept, but only to show that they commit her opponents to her view instead.

20. She writes, "In fine, I cannot conceive, how a Spirit . . . can have the effects of a body, being none it self; for the effects flow from the cause; and as the cause is, so are its effects" (*Philosophical Letters*, 197). She adds, "it is, in my opinion, more probable, that one material should act upon another material, or one immaterial should act upon another immaterial, then that an immaterial should act upon a material or corporeal" (207).

21. *Philosophical and Physical Opinions*, "Another Epistle to the Reader," ii. See also *Philosophical and Physical Opinions*, 293–4, and *Philosophical Letters*, 108, 151, 378, 417, 514–5. See also Lucretius, *On the Nature of Things*, pp. 170–171.

22. *Grounds of Natural Philosophy*, 7. See also *Philosophical Letters*, 531. Cavendish might have come across this view in her reading of Henry More's *Antidote Against Atheism*. (See Susan James, "The Philosophical Innovations of Margaret Cavendish," *British Journal for the History of Philosophy*, vol. 7 [1999], pp. 222–223; and Henry More, *Antidote Against Atheism* [London, 1653], pp. 51–52.)

23. *Philosophical Letters*, 215.

24. See also Leibniz, "On Nature Itself," 504. He writes that "it is consistent neither with the order nor with the beauty or the reason of things that there should be something vital or immanently active only in a small part of matter, when it would imply greater perfection if it were in all." He adds that laws of nature are not anything over and above creatures, but instead are written into them ("On Nature Itself," 500–502; "Letter to Arnauld, July 14, 1686," 331–5). Cavendish dismisses the objection that her materialism is heretical; it does not "oppose the omnipotency and Infinite wisdom of God . . . but rather proves and confirms it" (*Philosophical Letters*, 164). (See also pp. 149–150, 162–163, 198, 199; *Observations Upon Experimental Philosophy*, 220; and Broad, *Women Philosophers of the Seventeenth Century*, p. 58.) In addition, she argues that anyone who opposes her view and insists on the truth of their own is pretending to have infallible knowledge of what is beyond us, and that such insistence does not reflect a proper amount of humility. (See *Philosophical Letters*, 107, 139–142, 221, 230–1, 322, 462, 503–5.) For example, she says of William Harvey that "he doth speak so presumptuously of Gods Actions, Designs, Decrees, Laws, Attributes, Power, and secret Counsels, and describes the manner, how God created all things, and the mixture of the Elements to an hair, as if he had been Gods Counsellor and Assistant in the work of Creation; which whether it be not more impiety, then to say Matter is Infinite, I'le let others judg. Neither do I think this expression to be against the holy Scripture; for though I speak as a natural Philosopher, and am unwilling to cite the Scripture, which onely treats of things belonging to Faith, and not to Reason; yet I think there is not any passage which plainly denies Matter to be infinite, and Eternal, unless it be drawn by force to that sense. . . . [A]lso the Scripture says, *That Gods ways are unsearchable, and past finding out*" (*Philosophical Letters*, 462). See also Londa Schiebinger, "Margaret Cavendish," in *A History of Women Philosophers*, ed. Mary Ellen Waithe (Boston: Kluwer Academic Publishers, 1991), p. 8. Cavendish thinks that we are mistaken if we think that we can say anything about God

and His ways, but she adds that it follows from what her opponents *do* want to say about God that matter thinks. See also *Philosophical Letters*, 518–9, where she argues that it follows from the premise that God is good and just that He would make sure that all of His creatures would be able to worship Him, and so would make sure that all of His creatures had knowledge and perception. See also James, "The Philosophical Innovations of Margaret Cavendish," p. 230.

25. A common view in the Early Modern period was that bodies behave in an orderly manner because they obey laws of nature. See, e.g., Descartes, *Principles* I:37–40, AT 8A:62–5; and Robert Boyle, *The Origin of Forms and Qualities According to the Corpuscular Philosophy*, 70, in *Selected Philosophical Papers of Robert Boyle*, ed. M. A. Stewart (Indianapolis: Hackett Publishing Company, 1991).

26. The same view is in Cudworth. He says of philosophers who would explain the orderly behavior of bodies in terms of laws of motion (and not in terms of proxies that are active and knowledgeable) that "These men (I say) seem not very well to understand themselves in this. Forasmuch as they must of necessity, either suppose these their *Laws* of *Motion* to execute themselves, or else be forced perpetually to concern the Deity in the Immediate Motion of every Atom of Matter throughout the Universe, in Order to the Execution and Observation of them . . . we cannot make any other Conclusion than this, That they do but unskillfully and unawares establish that very Thing which in words they oppose; and that their *Laws* of *Nature* concerning *Motion*, are Really nothing else, but a *Plastick Nature*" (Ralph Cudworth, *The True Intellectual System of the Universe* [Stuttgart-Bad Cannstatt: F. Fromann Verlag, 1964], p. 151). A plastic nature for Cudworth is an immaterial being that God creates to move and guide bodies that are otherwise wholly inert. The "Mechanick Theists" (p. 151) are cheating when they say that bodies behave in an orderly manner because they follow laws of nature. Cavendish agrees. For more on Cudworth's position, see David Cunning, "Systematic Divergences in Malebranche and Cudworth," *Journal of the History of Philosophy*, vol. 43 (2003), pp. 348–353.

27. This is not to say that Cavendish thinks that all bodies are knowledgeable and perceptive to the same degree. For example, she writes, "the Sun, the Stars, Earth, Fire, Water, Plants, Animals, Minerals; although they have all sense and knowledg, yet they have not all sense and knowledg alike, because sense and knowledg moves not alike in every kind or sort of Creatures" (*Philosophical Letters*, 153). See also pp. 184, 236, 287, 516–517; *Philosophical and Physical Opinions*, 113–4, 274–5; *Grounds of Natural Philosophy*, 82, 163–4; and *Observations Upon Experimental Philosophy*, 218–9. See also Leibniz, *Monadology*, sections 21, 23–4.

28. *Philosophical and Physical Opinions*, 191.

29. *Philosophical Letters*, 299, 302.

30. *Philosophical and Physical Opinions*, 194. See also p. 140.

31. See *Philosophical Letters*, 362, 367, 415; Margaret Cavendish, *The World's Olio* (London: printed for J. Martin and J. Allestrye, 1655), pp. 160–161, 176; *Poems & Fancies*, 84–5; *Grounds of Natural Philosophy*, 176–7;

and *Philosophical and Physical Observations*, 140, 196. In an almost Kantian vein, Cavendish writes, "To give us Sense, and Reason too,/ Yet know not what we're made to do./ Whether to Atomes turne, or Heaven up hye,/ Or into new Formes change, and never dye./ Or else to Matter Prime to fall againe,/ From thence to take new Formes, and so remaine./ Nature gives no such knowledge to Man-kind,/ But strong Desires to torment the Mind . . . / O Nature! Nature! Cruell to Man-kind,/ Gives Knowledge none, but Misery to find" ("A Dialogue Betwixt Man, and Nature," in *Poems and Fancies*, 58).

32. *Philosophical Letters*, 358–9.

33. Ibid., 472. There is an obvious similarity between the views of Cavendish and some of the views of Hume in *An Enquiry Concerning Human Understanding*. For example, Hume writes that "Hence we may discover the reason, why no philosopher, who is rational and modest, has ever pretended to assign the ultimate cause of any natural operation, or to show distinctly the action of that power, which produces any single effect in the universe. It is confessed, that the utmost effort of human reason is, to reduce the principles, productive of natural phenomena, to a greater simplicity, and to resolve the many particular effects into a few general causes, by means of reasonings from analogy, experience, and observation. But as to the general causes of these causes, we should in vain attempt their discovery; nor shall we ever be able to satisfy ourselves, by any particular explication of them. These ultimate springs and principles are totally shut up from human curiosity and enquiry. Elasticity, gravity, cohesion of parts, communication of motion by impulse; these are probably the ultimate causes and principles which we shall ever discover in nature; and we may esteem ourselves sufficiently happy, if, by accurate enquiry and reasoning, we can trace up the particular phenomena to, or near to, these general principles." (See David Hume, *An Enquiry Concerning Human Understanding*, ed. Tom L. Beauchamp (Oxford: Clarendon Press, 2000), section IV, part 1, paragraph 12, pp. 111–112.) There is also an overlap in their views on our ability to know a thing's causal powers a priori and on our tendency to think that we understand why a given cause leads to a given effect just because we are familiar with that cause leading to that effect (Hume, *An Enquiry Concerning Human Understanding*, p. 112). Also striking is Hume's discussion of the possibility of thinking matter in *A Treatise of Human Nature*, I.iv.5, paragraphs 29–35. On the question of whether or not Hume read *Philosophical and Physical Opinions*, the evidence is inconclusive. The text was part of the collection of the Physiological Library at the University of Edinburgh, and Hume is known to have had dealings with the library. He contributed to its augmentation in 1724, his first year at the university, and the year after the library opened. Unfortunately, there is no date of acquisition on the library's copy of *Philosophical and Physical Opinions*, and borrowing records at the library start at 1768. There is no mention of Cavendish in Hume's corpus, so it appears that the best we can do on the question of whether or not Cavendish influenced Hume is to speculate. I am grateful to M.A. Stewart, Michael Barfoot, and Sheila Noble for their help in addressing this question.

34. *Philosophical Letters*, 362. See also pp. 272, 367.

35. *Philosophical Letters*, 526. See also p. 107. Note that here Cavendish is writing with an eye to Kenelm Digby. She interacted with Digby at meetings of the Cavendish Circle and read much of his work (O'Neill, ed., *Observations upon Experimental Philosophy*, p. 15), and his most consuming worry as a philosopher was that if complete mechanistic explanations could not be offered for phenomena like gravitational attraction or the powers of bodies to make us have sensations that do not resemble those bodies, then the materialist philosopher would be able to argue that in the same way that *these* somehow happen, bodies somehow think. See Kenelm Digby, *Two Treatises in the One of Which, the Nature of Bodies; in the Other, the Nature of Mans Soule; is Looked Into: in Way of Discovery, of the Immortality of Reasonable Soules* (Paris: printed by Gilles Blaizot, 1644), pp., iii, v.

36. *Philosophical Letters*, 527.

37. *The World's Olio*, 161. See also Hume 2000, section 1, 87–90.

38. *Philosophical Letters*, 418. See also pp. 448, 517; *Poems & Fancies*, 43–4, 163; and *Philosophical and Physical Opinions*, 86. Noteworthy is that Descartes and others encounter a similar obstacle in their attempt to demonstrate that *immaterial* things, although they are not sensible, are things nonetheless. See for example *Principles* I:71; AT 8A:36; *Principles* I:73; AT 8A:37; *The World*, chapter four, AT 11:17, 21; and the Second Meditation, AT 7:27–31. See also Nicholas Malebranche, *The Search After Truth*, trans. and ed. Thomas M. Lennon and Paul J. Oscamp (Cambridge: Cambridge University Press, 1997), V.7, 381; I.6, 30; I.19, 82; IV.10, 310–1.

39. *Philosophical Letters*, 417–8.

40. *Philosophical Letters*, 422.

41. See, e.g., Descartes, "To Princess Elizabeth, 15 September 1645," AT 4:292; Nicholas Malebranche, *The Search After Truth*, VI.ii.3, 446–52; Digby, *Two Treatises*, pp. 453, 433; Kenelm Digby, *Private Memoirs of Kenelm Digby* (London: Saunders and Otley, Conduit Street, 1827), pp. 235–239; Kenelme Digby, "A Conference with a Lady about Choyce of Religion," in *Albert the Great, Adhering to God*, trans. Kenelme Digby (London: Printed for Henry Harringman at the Anchor the New-Exchange, 1654), pp. 76–78; and Cudworth, *True and Intellectual System of the Universe*, pp. 858, 156, 157, 648, 857. For the larger Platonic tradition from which these views emerge, see Plato, *Phaedo*, 64d–65a, 78b–80b, 105c–e, ed. and trans. David Gallop (Oxford: Clarendon Press, 1975), pp. 9, 26–29, 59–60; Plotinus, "On Beauty," *Enneads*, trans. and ed. Stephen MacKenna (Indianapolis: Hackett Publishing Company, 1991), I.6, 45–55; and St. Augustine, *On Free Choice of the Will*, ed. and trans. Thomas Williams (Indianapolis: Hackett Publishing Company, 1993), p. 19.

42. *Observations Upon Experimental Philosophy*, 209. See also *Philosophical Letters*, 162–3, 186–7, and *Grounds of Natural Philosophy*, 47.

43. *Philosophical Letters*, 180.

44. See *Philosophical Letters*, 350–1, 382, 404; and *Philosophical and Physical Opinions*, 403–5, 436.

45. *Philosophical and Physical Opinions,* 431–2.

46. See *Grounds of Natural Philosophy*, 85–6, 113, and *Philosophical and Physical Opinions*, 334–5.

47. *The World's Olio*, 96.

48. Ibid., 106.

49. See, e.g., Colin McGinn, *The Mysterious Flame: Conscious Minds in a Material World* (New York: Basic Books, 1999), pp. 6–18; David M. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory* (Oxford: Oxford University Press, 1996), pp. 3–6; and Thomas Nagel, "What is it Like to be a Bat?" *The Philosophical Review*, vol. 83 (1974), pp. 435–450.

50. Donald Davidson, "Mental Events," in *Essays on Actions and Events*, ed. Donald Davidson (Oxford: Clarendon Press, 1980), pp. 208–209, 215.

51. Davidson notes that his identity thesis is restricted to mental events that stand in causal relations with physical events, but he is assuming that all mental events stand in causal relations with some physical events (p. 208).

52. But Cavendish would be reluctant to say that qua property a mental property is fundamentally different in kind from a physical property, as she thinks that mental properties are physical properties and that traditionally speaking the distinction between mental properties and physical properties has been exaggerated.

53. John Searle, *Minds, Brains, and Science* (Cambridge, Mass.: Harvard University Press, 1984), p. 14.

54. Ibid., pp. 20–23. Note that Searle is also relying in some way on the premise that minds have a "causal effect on the physical world" (p. 17), though perhaps just to further motivate his view. For more on Searle's view, see John Searle, *The Rediscovery of the Mind* (Cambridge, Mass.: The MIT Press, 1992), chap. 4. Note that an extremely similar line of argumentation is in the eighteenth-century physician Julien Offray de la Mettrie. One similarity is that Mettrie holds that the mental items that compose a mind are macroscopic properties of particles that are not thinkers themselves. Another is that Mettrie holds that it is in virtue of the causal powers of these smaller bodies that collections of bodies have minds. See Julien Offray de la Mettrie, "Treatise on the Soul," in *Man Machine and Other Writings*, trans. and ed. Ann Thomson (Cambridge: Cambridge University Press, 1996), p. 51; and Julien Offray de la Mettrie, "Man Machine," in Thomson, *Man Machine*, pp. 35, 26.

55. Not all bodies think, according to Cavendish. At (what we now call) the molecular level, bodies that do not think are interspersed with bodies that do (*Observations Upon Experimental Philosophy*, 206–7), and the activity of the former is always guided by the latter. Note that because Cavendish does not make totally clear how reasoning and thinking are different in human minds and thinking particles, it becomes difficult to draw the distinction between her view on the thought and reason of particles, and the view in Mettrie and Searle (and Daniel Dennett, for example) that particles themselves are unintelligent. (For Dennett's view on the relationship between the thinking that is done by

human beings and the analogue of thinking that is done by lesser bodies, see Daniel Dennett, *Kinds of Minds*, New York: Basic Books [1996], chap. 3.) Cavendish wants to say that the thinking of particles is *like* the thinking in which human beings engage, but different, and she does not specify exactly what the former consists in.

56. See for example Paul M. Churchland, "Eliminative Materialism and the Propositional Attitudes," *Journal of Philosophy*, vol. 78 (1981), p. 69; Paul M. Churchland, *Matter and Consciousness* (Cambridge, Mass.: The MIT Press, 1984), p. 56; and Paul M. Churchland, *A Neurocomputational Perspective* (Cambridge, Mass.: The MIT Press, 1989), pp. 125–126.

57. The eliminativist's view—that a language is always embedded in a larger theory and that each of the terms of a language is inextricably wed to the (central) tenets of the theory—is not without serious problems, but it is important to note (against some commentators, for example Searle, *The Rediscovery of the Mind*, pp. 46 and 6–7) that in proclaiming that there are no minds the eliminativist is not just foolishly denying the obvious phenomenological data of mentality.

58. See Churchland, "Eliminative Materialism and the Propositional Attitudes," pp. 76, 81, 84–90; Richard Rorty, "Mind-Body Identity, Privacy, and Categories," *Review of Metaphysics*, vol. 19 (1965), pp. 30–31; and Richard Rorty, "In Defense of Eliminative Materialism," *Review of Metaphysics*, vol. 24 (1970), pp. 116–119. The eliminativist would use different predicates to pose these questions, however, as the notions of mental illness and self-improvement are theory-laden also. Churchland does not promise that we will come up with predicates that will successfully track the things that we now refer to as mental items. This is instead a research project. A problem is that at the start it seems wholly unpromising, like a project that starts with the denial of the existence of phlogiston, but in a context in which scientists have been working with phlogiston for some time. As Kuhn would put it, such a researcher rejects the existing paradigm of concepts and so comes across as unintelligible: "[h]e will, in the first place, often seem a man searching at random, trying experiments just to see what will happen, looking for an effect whose nature he cannot quite guess." (See Thomas S. Kuhn, *The Structure of Scientific Revolutions* [Chicago: The University of Chicago Press, 1996], p. 87.)

59. She also disagrees with the eliminativist (as she disagrees with Searle and Mettrie) on the question of whether or not the thinking states that are had by brains are had by the smaller bodies that compose them.

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