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FORMING THE MIND

Essays on the Internal Senses
and the Mind/Body Problem from Avicenna
to the Medical Enlightenment

Edited by

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CHAPTER FOURTEEN

MIND AND EXTENSION (DESCARTES, HOBBES, MORE)

Robert Pasnau

14.1.

In 1674, Malebranche remarked that “it can be said with some assurance that the difference between the mind and the body has been known with sufficient clarity for only a few years” (*Search after Truth*, p. xl). The remark pays homage to Descartes, and his account of mind as essentially thought, body as essentially extension. To be sure, neither of these claims is entirely original with Descartes. In Thomas Aquinas, for instance, we meet the claim that bodies are those substances “in which one finds three dimensions” (*Summa theol.* 1a 18.2c) – a claim that he clearly regards as commonplace, and as following the lead of both Aristotle and Augustine.¹ Augustine seems attracted as well to the idea that the mind’s essence is thought. For he attacks the materialists of his day for identifying the mind with various corporeal elements and mixtures, when in fact that essence is right in front of them: “when the mind knows itself it knows its substance, and when it is certain of itself it is certain of its substance. But it *is* certain of itself,” Augustine writes, inasmuch as it is certain that it thinks, wills, doubts, and so forth. The mind is therefore not a body, but a thing that thinks (*De trinitate* X.x.16).

The similarities between Descartes and Augustine are striking² – it is no wonder that Malebranche cites Augustine as the one who “explained the properties of the soul and the body better than all those who preceded him

¹ See, respectively, *De caelo* I 1, 268a20–23 and *De trinitate* X.vii.9. I will consider the details of Augustine’s account in §V.

² For discussion, see Matthews (1992), ch. 4, Menn (1998), 251–61.

and who have followed him until our own time" (*Search*, pp. xxxix–xl). Readers who have set out to explore this conception of the mind–body distinction have tended to focus their attention on the thesis that the essence of mind is thought. It is natural that this should be so, since the thesis is alleged to be extremely powerful: according to both Augustine and Descartes, it entails that the mind is not a body. Despite the allure of that purported result, I am going to set it aside in this paper. Here my interest lies in understanding what sort of distinction is at issue when the dualist claims that minds are not bodily – or when the materialist says that they are. To understand this, it is little help to know that the mind is essentially a thinking thing, because that goes nowhere toward defining the conditions under which the mind would or would not count as a body. The competing claims of dualists and materialists can be meaningful only if we have some sense of what sort of thing a body is, and consequently some sense of the conditions under which a thing would count as nonbodily.

Today, in despair of saying anything substantive about what characterizes body, materialists tend to invoke the bare authority of physics, arguing that the corporeal is whatever entities are or would be acknowledged in physics. (Hence the wide currency of “physicalism” in place of ‘materialism.’) The obvious problem with this move is that it cannot rely on the ontology of current physics, since that is no doubt incomplete and faulty in some respects. Instead, such a physicalist must appeal to the ideal ontology of a completed physics. Once this step is taken, however, it becomes obvious that we have no idea what we are talking about. For all the physicist has told us, *anything* might be recognized by physicists of the next millennium, including Cartesian minds, Leibnizian monads, or even ectoplasm. For all we know, physics might prove the dualist right. Yet if we define the physical as whatever the physicists will accept, then it becomes impossible by definition for physics to vindicate dualism. That result seems unacceptable. It may be that there is something about the nature of dualism that makes it unsusceptible to verification (or falsification) through physics. Surely, though, we should try to understand *why* this is so, rather than stipulating it by definition.

Toward this end, I want to consider whether any more substantive account can be given of the distinction between the bodily and the nonbodily. If Descartes and earlier authors are correct in thinking that body is essentially extended, then we might have some hope of making sense of the debate between dualists and materialists. The difficulty with taking this proposal seriously today is that it seems to have been disproved by recent developments in physics, developments that suggest extension is not an essential feature of bodies. Despite these findings, I want to argue that the extension criterion is more interesting – and more complicated – than is generally

recognized. In fact, as we will see, there is no one such criterion but instead many different and independent criteria, all related in interesting ways to the Cartesian thesis that body is essentially extended.

14.2.

I have already suggested just how widely it has been believed, throughout the history of philosophy, that the essence of body is extension. In the seventeenth century, this doctrine was defended by authors who otherwise had very little in common with respect to their theories of mind and body. Hobbes and Descartes, for instance, despite their disagreements, do agree that body is essentially extended. And Henry More, though seemingly in opposition to Descartes on this score, in fact agrees with Descartes – as we will see – on how extension serves to distinguish body from spirit. In what follows I will consider the debate between these three authors, in order to shed light on the very different sorts of things it might mean to say that the body, but not the mind, is extended.

In reading the Third Set of Objections and Replies to the *Meditations*, it is easy to form the impression that there is nothing Hobbes and Descartes agree on. As it happens, though, they do agree that body is essentially extended. As a start toward seeing how this is so, consider this remark from near the beginning of Hobbes’s Objections:

How do we know the proposition ‘I am thinking’? It can come only from our inability to conceive any act without its subject – such as jumping without a jumper, knowing without a knower, or thinking without a thinker. It seems to follow from this that a thinking thing is something corporeal. For it seems that the subject of any act can be understood only under a corporeal aspect or under the aspect of matter (VII 173).³

In reply, Descartes agrees with the first point that we cannot conceive of an act without its subject. But he then expresses complete bewilderment at what follows, remarking that the inference to the mind as corporeal is made “without any argument and contrary to all usage and all logic” (VII 175). Quite right, it seems. What could possibly lie behind Hobbes’s utterly unsupported inference from the first sentence to the second? In his objections to Descartes, he never clarifies the issue, but in his own work

³ I generally follow the translations of Cottingham et al., but with frequent revisions based on the Adam–Tannery text of the Latin and French. Citations supply the volume and page numbers of the latter edition, which are also furnished in the margin of Cottingham et al.

a somewhat clearer picture emerges. In part, Hobbes's materialism arises from his brand of empiricism. In the *Elements of Law*, written just a year before his exchange with Descartes, he remarks that "we who are Christians acknowledge that there be angels good and evil, and that they are spirits, and that the soul of man is a spirit, and that these spirits are immortal." Then he adds the crucial qualification:

But to know it, that is to say, to have natural evidence of the same: it is impossible. For all evidence is conception, as it is said; and all conception is imagination and proceedeth from sense. And spirits we suppose to be those substances which work not upon the sense, and therefore not conceivable (I.11.5).

Consequently, we have no conception of anything spiritual if that means something imperceptible. To the extent we do conceive of something spiritual such as the mind, the angels, or God, we conceive of something extended, which "fillet up the place which the image of a visible body might fill up.... To conceive a spirit, is to conceive something that hath dimension" (I.11.4). The common supposition that spirits are substances without dimension is in fact inconceivable – the words "substance without dimension" "do flatly contradict one another" (ibid.).

Although Hobbes's empiricism and his conception of the spiritual could not be farther from Descartes's own views, the two agree on one point: that the corporeal should be defined as what is extended. So Hobbes concludes this discussion in *Elements of Law* by saying that angels and spirits are corporeal substances. Later, in the *Leviathan*, he puts the point still more plainly, remarking:

[E]very 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, nowhere). Nor does it follow from hence that spirits are nothing. For they have dimensions, and are, therefore, really bodies (*Leviathan* xlvi.15).

When we say that God is a spirit, this is simply "a signification of our reverence" (*Elements* I.11.4), showing "our desire to honor him with such names as we conceive most honorable among ourselves" (*Lev.* xxxiv.4). In the Latin Appendix to the *Leviathan*, he writes that he "affirms, of course, that God is a body" (iii.6).

Hobbes's confidence in materialism seems to go beyond his empiricist scruples. For he claims not just that we have no conception of the immaterial, but that the concept is positively incoherent: "*substance incorporeal* are words which, when they are joined together, destroy one another, as if a man should say *an incorporeal body*" (*Lev.* xxxiv.2). The words destroy one another, because they are contradictory in their signification, and hence the phrase fails to signify (*Lev.* iv.21; xxxiv.24). It is not perfectly obvious why

Hobbes sees a contradiction here, but the idea seems to be as follows.⁴ First, "substance" signifies that which is the subject of various accidents, including various sorts of motion and sensible qualities. Second, the substance of any such accidents must have location. But, third, something incorporeal lacks location, because it lacks extension.

This seems to be the line of thought that lies behind that puzzling inference in the Third Set of Objections, the one to which Descartes had replied (as above) that it is "contrary to all usage and all logic." By establishing that Descartes's act of thought requires a subject, Hobbes supposes that we can immediately conclude to the materiality of that subject. The argument makes two dubious assumptions:

- A. Subjecthood entails location (that is, being the subject of any quality or action – or even existing at all – entails having location);
- B. Location entails extension.

Regarding (B), Hobbes remarks in the *Elements of Law* that "locality is dimension, and whatsoever has dimension is body, be it never so subtle" (I.11.5). The first clause seems false, since it seems that a thing might exist at a point – that is, at a nonextended mathematical point – and hence have location without extension. Presumably, though, Hobbes is using "locality" in the traditional sense of *locus*, which requires not just a location in space but a location extended through space.⁵ Hence *locus* implies extension, which makes it not surprising that Hobbes would treat "locality" in the same way.

⁴ For a very different way of spelling out Hobbes's argument at this point in the Third Objections, see Curley (1995). Another view would be that Hobbes's materialism does fall directly from his empiricism. Thus Descartes, presumably with Hobbes (among others) in mind, remarks to More that "As for the fact that some people do confuse the notion of substance with the notion of extended thing, this is so because of the false prejudice: for they believe that nothing can exist or be intelligible without being also imaginable. And, in truth, nothing falls within the scope of the imagination without being in some way extended" (V 270). For yet another reading, see Mintz (1962): "But his assumption that there can be no other substance but matter is gratuitous and unproved. Hobbes was most impressive when he worked out the logical consequences of his assumptions; he showed no inclination for proving those assumptions to be true beyond a firm belief that they were self-evident and attainable by all reasonable men who exercise their minds with due and proper care" (67).

⁵ The traditional sense goes back to Aristotle, but Hobbes in fact dissents from Aristotle's conception of *locus* (place) as the two-dimensional limit surrounding an object. Instead, for Hobbes, place is extended in three-dimensions over the whole space occupied by an object. For details, see Leijenhorst (2002).

It is hard to see how Hobbes would defend (A), and the remarks just made in support of (B) make the task harder still. For though it seems plausible to say that the subject of certain accidents must have a location – if one thinks, for instance, of accidents such as *jumping* or *looking red* – it is not obvious that *thinking* requires a location. Yet Hobbes seems so confident of this point that he is willing to make this claim in its strongest form, that nothing whatsoever can exist without location. Thus he remarks that there could be no such thing as incorporeal ghosts, because they would be “ghosts that are in *no place*; that is to say, that are *nowhere*; that is to say, that seeming to be *somewhat*, are *nothing*” (*Lev.* xxxiv.15).⁶ It is not obvious that a thing has to exist somewhere in order to exist. It is even less clear, however, that a thing has to occupy a place – that is, an *extended* place – in order to be somewhere. Hence both parts of this brief argument against incorporeal ghosts are in need of additional support, and it is hard to find any such support elsewhere in Hobbes.

Still, though Hobbes does not adequately defend his account, he does shed some light on several ways in which a thing might fail to be extended. One way of lacking extension is *to lack location entirely*. If this were the only way in which a thing could lack extension, then we could assert (B), that location entails extension. But, *prima facie*, this does not seem plausible. As noted already, it seems as if a thing could lack extension by *being located only at a mathematical point*. Admittedly, this has never been a very attractive way of understanding spiritual entities. Aquinas, for instance, calls it “ridiculous” to imagine that “the soul’s simplicity is like that of a point – as if it were something indivisible that has an indivisible location” (*I Sent.* 8.5.3c). According to More, “to take away all extension is to reduce a thing only to a mathematical point, which is nothing else but pure negation or nonentity” (*Immortality* pref. §3). Descartes, too, seems to dismiss this possibility out of hand.⁷ Indeed, Descartes thinks that the mind

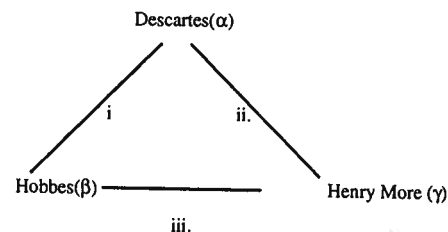
⁶ See also *Lev.* xlvi.19: “For seeing they will have these [substantial] forms to be real, they are obliged to assign them some place. But because they hold them incorporeal, without all dimension of quantity, and all men know that place is dimension, and not to be filled but by that which is corporeal....”

⁷ At any rate, Descartes doesn’t bother to address Gassendi’s detailed attack on the idea that the soul might exist at a mathematical point (*Fifth Objections* VII 340–41; cf. VII 388–89). On the other hand, in the *Sixth Replies*, where he describes how gravity could be contracted to a mathematical point, on his old way of looking at things, he goes on to explain that this is precisely how he now thinks of the mind (VII 442). This suggests that the mind *could* exist only at a point, although in fact it does not. And one might take the passage to imply that the mind *would* exist at

lacks extension in neither of these ways – which is to say that the mind is in a certain way extended: it has location and not merely at a mathematical point. But since Descartes thinks that only body is *truly* extended, there must be further ways of being nonextended. To these I now turn.

14.3.

Some of the most interesting discussions of extension in the seventeenth century occur in the work of the Cambridge Platonist Henry More (1614–1687). More fiercely attacked both Hobbes and Descartes, and the three form an interesting philosophers’ triangle. As we have seen, Hobbes agrees with Descartes that extension can serve as a criterion for the physical, and then argues that since all things are extended, all things are physical. More, in turn, accepts Hobbes’s claim that all things are extended. But he denies that extension can serve as a criterion for the physical, and so he rejects Hobbes’s physicalism and instead embraces a dualism of the sort Descartes had described. The relationship, then, looks like this:



- i. Extension demarcates the corporeal
- ii. A dualism of corporeal and incorporeal
- iii. All things are extended

- α. There are unextended substances
- β. Materialism
- γ. There are extended incorporeal substances

By the end of his career, More’s dualism was in fact much more thoroughgoing than Descartes’s, in that More postulated spirit throughout all of nature. He accordingly came to think that Descartes’s mechanistic approach

only a point if there were no body. Still, I will suggest later that, for Descartes, disembodied minds lack location entirely.

was indefensible, remarking that “there is no purely mechanical phenomenon in the whole universe” (*Divine Dialogues*, vol. 1, A6v). For our purposes, however, we can set aside this dispute about the success of mechanistic explanation, and focus on the question of how More could both agree with Hobbes that all things are extended, and also agree with Descartes that not all things are corporeal.

As for the first, More adopts something very similar to Hobbes’s strategy, and makes it much more explicit.⁸ Accepting Hobbes’s principles (A) and (B), he argues that

1. Lacking extension entails lacking location [equivalent to (B)]
2. Lacking location entails lacking existence [equivalent to (A) in its strong form].
3. Nothing exists that is nonextended.

More asserts (1) without argument, because he takes himself to be arguing against philosophers that make precisely this claim. He even coins the term *Nullibists* to refer to philosophers of this persuasion. He takes (1) to be one of the Nullibists’ three core axioms, along with the claims that all and only thinking things are immaterial, and that whatever is extended is material (*Enchiridion Metaphysicum* 27.2). With respect to (2), More holds it without qualification, remarking that “if a thing be at all, it must be extended” (*Immortality* pref. §3). When it comes to arguing for this claim, he contents himself with defending it only for the special cases in which he is most interested, God and the human soul:

Even the Nullibists acknowledge and affirm that the operations with which the soul acts in the body are in the body, and that the divine power or force by which God acts in matter and moves it is present in the individual parts of matter. From this it is easy to infer that the operation of the soul and the motive force of God are somewhere, namely in the body and in matter.... Therefore, if the operation of the soul is somewhere, the soul is somewhere, namely, there where the operation is; if the power of God is somewhere, God is somewhere, namely, there where the divine power is – God in the individual parts of matter; the soul in the human body (*Ench. Met.* 27.5; Jacob, p. 101).

This argument does not attempt to show that *existence* entails location, the strong claim made by (2), but rather that things that have powers and

⁸ For Hobbes’s influence on More, see *Immortality* I.ix–x, where he first assembles all of Hobbes’s most important arguments for materialism and then replies to each. More gives particular weight to the passage quoted in note 6, which he reconstructs as follows: “Whatsoever is real, must have some place: But Spirits can have no place” (*Immortality* I.x.8). More replies by insisting “that *Spirits* are as truly in Place as *Bodies*.”

operations in the world must themselves be located in the world. Specifically, God has a power and the soul has operations that are present at various locations. If such a power and such operations have location, then surely their subjects do as well. This last step in particular might conceivably be challenged. One might argue, for instance, that God can act on the world without being in the world. But More is simply making use of what his opponents are prepared to grant him. They hold that God acts everywhere and is present everywhere, and that the soul operates throughout the body, and is present throughout the body. Hence, More concludes, God and the human soul are extended.

Who exactly are these benighted Nullibists? More alleges that their leader is none other than Descartes himself. This is quite surprising. For although Descartes does of course insist that all and only bodies are extended, and that all and only minds are nonbodily, he does not take the mind’s lack of extension to entail that it lacks location. Or, at any rate, matters are much more complex than More suggests, and no one was in a better position to realize this than More himself. For it was in a series of letters between More and Descartes – exchanged some twenty years earlier, in 1648–49 – that the complexity of Descartes’s view on this topic most fully and clearly emerge. So when More describes Descartes as the “prince of the Nullibists” (*Ench. Met.* 27.2), he surely ought to have had in mind those letters. And if he did have those letters in mind, it is hard to see how he could have described Descartes as a Nullibist. For Descartes makes it quite clear in those letters that he does think God and the soul have a location, and even in a certain sense have extension.

The discussion begins with More’s letter of December 11, 1648, in which he argues that Descartes’s extension criterion for body is unacceptably broad, because both God and angels are extended. To show this, he offers a version of the argument we have just considered. More reasons that God impresses motion on every part of the world, which requires some sort of “quasi” touching of each part, which requires him to exist everywhere in the world (V 238–39). In reply, Descartes readily accepts the doctrine of God’s omnipresence, and grants that God is in a certain way extended, as are angels and the human soul.

It is not my custom to argue about words, and so if someone wants to say that God is in a way extended, since he is everywhere, I have no objection. But I deny that true extension, as it is commonly conceived by everyone, is to be found in God or in angels or in our mind or in any substance that is not a body. By ‘extended being’ everyone standardly means something imaginable.... In this being they can imaginatively distinguish various parts of determinate size and shape, each in no way the same as the others. Each

can be imagined as transferred to the place of others, but no two can be imagined simultaneously in one and the same place (V 269–70).

This passage makes it clear that Descartes builds quite a lot into his notion of extension. This allows him to say that thinking substances – such as God and the human mind – are extended in a weaker sense, which he might have called quasi-extension. As for what he here calls “true extension,” he suggests three criteria:

- a. It must be imaginable;
- b. It must have distinct parts of determinate size and shape;
- c. Such parts must not be able to coexist simultaneously at one and the same place.

From the context, it is clear that Descartes cannot intend (a) as any part of what defines extended being. For in this and the following letter he shows quite effectively that More cannot define body as perceptible substance, because it would then be defined by a contingent relationship to the human senses. Surely the same is true of imaginability. This leaves (b) and (c), which I will call, respectively, *partition* and *impenetrability*.

It is perfectly clear that neither partition nor impenetrability represent late-life second thoughts for Descartes. He had already indicated in earlier works that he takes both to be included in the concept of extension. His commitment to partition is evident in his argument against atomism from the *Principles of Philosophy*: “if there were any atoms, then no matter how small we imagined them to be, they would necessarily have to be extended; and hence we could in our thought divide each of them into two or more smaller parts, and hence recognize their divisibility” (II.20). Extension, in other words, entails having parts and hence entails divisibility. With respect to impenetrability, he wrote to Hyperaspistes back in 1641 (in remarks intended for publication) that “the mind is coextensive with an extended body even though it has no true extension – that is, extension through which it occupies a place and excludes other things from that place” (III 434). These remarks show that Descartes’s conception of extension includes more than simply being spread out over three dimensions. And this opens up room for another way of failing the extension criterion: a thing might be spread out in this way and yet not satisfy partition or impenetrability.⁹

⁹ Regarding impenetrability, see also these remarks: “The extension of this matter is of a different nature from the extension of this thought, because the former has a determinate location, such that it thereby excludes all other bodily extension, which is not the case with the latter” (to Princess Elizabeth, June 28, 1643; III 694). “The true extension of a body is such as to exclude any interpenetration of the parts”

Remarkably, Descartes and More agree about this. Although the question of extension is standardly said to be one of their principal areas of disagreement, they in fact are in substantial agreement regarding whether and how incorporeal substances are extended. In More’s *Immortality of the Soul*, for instance, published ten years after the correspondence with Descartes, More defines body as a “a substance impenetrable and discernible,” and defines spirit as “a substance penetrable and indiscernible” (I.iii.1). By “discernible,” More means divisible into parts, and he argues that spirits are indiscernible because they lack parts.¹⁰ Hence these definitions turn out to be equivalent to Descartes’s extension criterion, once one realizes that Descartes understands extension to involve both partition and impenetrability.

In the earlier correspondence, their agreement is not so complete. There, More attempts with little success to defend perceivability as a mark of the corporeal (a proposal he would later abandon). Moreover, these letters make no mention of discernibility (that is, partition). But More does, from the very first letter, insist on impenetrability. Body, he writes, “can neither penetrate other bodies nor be penetrated by them. Hence the distinction between divine and corporeal nature is most clear: for the first can penetrate the second whereas the second cannot penetrate itself” (V 240). In reply, Descartes accepts that all and only bodies are characterized by impenetrability, but insists that the essence of body is captured by extension rather than impenetrability.¹¹ As for incorporeal substances, Descartes is willing to say (as we saw above) that they are extended *in a way*, but not *truly* extended. But the reason he gives for not counting incorporeal extension as

(Sixth Replies; VII 442). It is harder to find explicit statements of partition, but see *The World*, which builds both impenetrability and partition into the nature of matter: “Each of its parts always occupies a part of that space which it fits so exactly that it could neither fill a larger one nor squeeze into a smaller; nor could it, while remaining there, allow another body to find a place there. Let us add that this matter may be divided into as many parts having as many shapes as we can imagine” (XI 33–34).

¹⁰ On the connection between indiscernibility and lacking parts, see *Ench. Met.* VIII.14.

¹¹ This is the force of Descartes’s remark that impenetrability is a *proprium quarto modo* (V 269). The fourth kind of *proprium*, according to Porphyry’s *Isagoge*, is one that characterizes all and only the members of a certain species, all of the time. In other words, it gets the term’s extension (in the logician’s sense) exactly right. Still, this sort of property is merely a *proprium*, and does not get at the defining essence of the thing.

true extension is a reason that More is likewise prepared to accept, as More notes in his next letter (V 301). Replying in turn, Descartes remarks that "at last we agree about the facts (*de re*); what is left is a question of terms (*de nomine*): whether this second sort of extension should be described as equally true" (V 342). There is no reason to treat this remark as ironic, because it seems exactly right. The two really are in agreement, at this point, regarding how to discriminate the corporeal from the incorporeal.¹²

I want to analyze the implications of this enriched version of the extension criterion, but before doing that we should consider Descartes's insistence that extension rather than impenetrability defines body. It might well seem that this stance is not open to Descartes: for since he is willing to grant that the incorporeal is extended in a way, it is hard to see how extension itself could define body unless he enriches his conception of extension so as to include impenetrability (and perhaps partition). But to do that is tantamount to bringing impenetrability inside the essence of body. For body would be distinguished from spirit not in virtue simply of extension, but in virtue of *impenetrable* extension. Mere extension would not be even a sufficient condition for body, let alone the defining condition.

In order to evade this unwelcome consequence, Descartes makes a move that again brings him into disagreement with More. The move is to claim that only bodies are essentially extended, and that incorporeal substances are extended only derivatively, in virtue of bodily extension. Thus, immediately after announcing that at last he and More agree (as quoted above), he adds the following:

For my part, in God and angels and in our mind I understand there to be no extension of substance, but only extension of power, so that an angel can exercise power now on a greater and now on a lesser part of corporeal substance. For if there were no bodies, I could not conceive of any space with which an angel or God would be coextensive. But to attribute

¹² The very last word in the correspondence belongs to More, who wrote a *post mortem* reply to Descartes's last letter (a letter that Descartes never completed nor sent, and that consequently More saw only five years later). In More's *post mortem* reply, from 1655, he writes that "concerning what they call God's omnipresence, there is no disagreement between us, since he [Descartes] acknowledges that God is everywhere, that he exerts his force on a material subject, and that consequently some kind of extension applies to him – but that he is quite distinct from what applies to a divisible and impenetrable body" (*Collection*, vol. 1, p. 106). On the circumstances of this final letter, and on the relationship between More and Descartes in general, see Gabbey (1982). There is no published English translation of More's letters to Descartes. For a French translation, see Rodis-Lewis (1953).

to substance an extension which is only an extension of power is an effect of the preconceived opinion that regards every substance, including God himself, as imaginable (V 342).

The point of this rather scholastic distinction requires some spelling out. To say that there is no extension of substance in an angel is just to say that extension does not enter into the angel's *essence*.¹³ To say that there is extension of power (*potentia*) is to say that the angel has the *potential* to be extended. Thus Descartes contends that, if there were no bodies, incorporeal substances would not be extended. Bodies, in contrast, are extended by their very nature: there is nothing else upon which they stretch themselves.

This yields yet another way of being nonextended: to be extended nonessentially. As we will eventually see, this lies close to the heart of Descartes's own view: he thinks that what distinguishes the corporeal from the incorporeal is that all and only the former have extension *as their essence*. Incorporeal things can be extended, but need not be. Thus God, angels, and human minds could exist without a corporeal world, in which case they would lack extension. Perhaps this is the truth behind More's seemingly crude characterization of Descartes as a Nullibist. For although Descartes thinks that, in fact, as things are now, God and embodied human minds have location, he seems committed to the possibility of incorporeal beings' existing without location. Indeed, this is no idle possibility, inasmuch as before the world was created God existed without location. Moreover, this presumably will be the case for human minds that exist after the death of their bodies but before the resurrection. They surely are not extended, and presumably they have no location at all. To this extent, Descartes is a nowhere man.¹⁴

¹³ Very often in scholastic Latin, "substance" means *essence*. Later in the same letter, Descartes makes the point clearer by contrasting the question of where God exists in virtue of his power (*potentia*) and where he exists in virtue of essence. In virtue of his power, God exists everywhere, but "in virtue of his essence he has no relation to place at all" (V 343; cf. V 347 and V 403). This distinction between God's being in things by power and by essence is a scholastic commonplace in virtue of its appearance in Lombard's *Sentences*, Bk. I d. 37. Lombard is in turn quoting Gregory the Great, who also mentions God's being in things by presence and grace: "Licet Deus communi modo omnibus rebus insit praesentia, potentia, substantia, tamen familiariori modo per gratiam dicitur esse in illis...." In fact Gregory (like Descartes) uses the word *substantia*, but commentators standardly switched to *essentia*.

¹⁴ One might understand Descartes rather differently at this point, as intending "extension of power" to preclude not just true extension but also true location.

In treating the incorporeal as having only derivative extension, Descartes is pursuing the implications of a standard line of argument. It was ordinarily claimed that God exists everywhere in virtue of acting causally everywhere, and that the human soul exists throughout the body in virtue of giving life to the entire body. Indeed, as we saw above, this was how More himself had argued for the extension of both God and the soul.¹⁵ So if incorporeal beings have extension only in virtue of acting on the corporeal, then it looks as if they must have extension only derivatively. Without bodies to stretch themselves upon, it is unclear how spirits could be extended. More's subsequent letters do not clearly address this issue.¹⁶ Yet despite what his own argument for God's omnipresence might suggest, More is in fact committed to the contrary view: that God himself is essentially extended. This is implicit in his first letter, when he objects to Descartes's claim in *Principles* II.18 that not even God could keep the two sides of a vessel apart

This is sometimes reported to have been John Duns Scotus's view, and so one might likewise ascribe it to Descartes (as Rozemond seems inclined to do at pages 357–58). In fact, though, Scotus is clear that God is literally present everywhere. What Scotus rejects is Aquinas's argument for this conclusion via God's causal action on the world (see *Reportatio Parisiensis* bk. I d. 37 qq. 1–2, 215–17). And I think it reasonably clear that this is Descartes's view too. A decisive passage (noted also by Rozemond) appears in Descartes's last letter to More: "it is certain that God's essence must be present everywhere so that his power can exert itself there" (V 403).

¹⁵ The classic formulation is due to Aquinas, *Summa theol.* 1a 8.3. Interestingly, Aquinas likewise stresses that God's extension satisfies neither impenetrability (1a 8.2c) nor partition (1a 8.4c). Aquinas holds that God is present everywhere both with respect to his power and with respect to his essence (1a 8.3c). This might seem to put him at odds with Descartes's view, but that is not so clear, in light of the passage quoted at the end of the previous note.

¹⁶ More seems to misunderstand Descartes's distinction between *extensio substantiae* and *extensio potentiae*. He complains in his third letter that it would be contradictory for "the mind's power to be extended and for the mind itself not to be extended in any way" (V 379). Now, as we have seen, Descartes is willing to say that the mind is extended in some way. More importantly, More seems to read Descartes as admitting that one part of the mind (its power) is extended, whereas another part (its substance) is not. More's claim is then that if any part of the mind is extended, the mind itself must be extended. But Descartes is making a modal claim: distinguishing not between parts or aspects of the mind, but between what is essential to the mind and what is merely possible. This is why he can make this distinction even in the case of God, something that More finds astonishing (V 379). Indeed it would be astonishing, on More's faulty understanding of the distinction.

while removing all the intervening matter. More replies that even without matter, the space would be filled by "divine extension" (V 241). This idea gets developed at length in chapter eight of his *Enchiridion Metaphysicum*, where he describes divine extension as infinite, immobile, simple, dependent on nothing, and, in short, equivalent to God.¹⁷ So More and Descartes do in the end disagree on the question of extension. Though they agree on partition and impenetrability as marks of the corporeal, they disagree on whether being essentially extended is likewise such a mark.

14.4.

We have now seen five ways of being nonextended:

- N1. Lacking location
- N2. Having location only at a mathematical point
- N3. Failing to exclude bodies (penetrability)
- N4. Lacking extended parts (indiscernibility)
- N5. Having extension only derivatively.

Likewise, we have seen that a thing can be extended by satisfying at least some of the converse of these criteria. It is not, I think, very interesting to debate which criteria are necessary or sufficient for extension – or even for "true extension." To engage in that debate just would be to argue about words, as we have seen Descartes put it. Instead, with these distinctions in hand, we need not talk about extension at all. Instead, we can talk directly about these rather different properties.

This much alone counts as some progress toward the goal announced initially, an understanding of whether extension might be used to demarcate the physical. What remains is to work through these criteria, looking for plausible candidates. At this point I need to say something about what ought to count as a plausible candidate for a mark of the nonphysical. My approach will be to imagine various sorts of possibilities for how the world might be. In each case, we can ask ourselves whether, if the world were like that, there would be a divide between two kinds of things, the ordinary and largely

¹⁷ See the scholium to VIII.13 (tr. Jacob, 69): "... it will be impossible, since I make this immobile extension something real, and adorned with so many divine attributes, but that I shall have to conclude that it itself is God, represented in a rough and general way. Nor can it be otherwise since there cannot be any God or any being absolutely perfect if something eternal and necessary, even infinite and immense, such as I describe this immobile extension in this very place, besides him existed by itself."

familiar physical realm and another realm so utterly distinct as to merit the label nonphysical. It carrying out this exercise, it seems to me important to avoid a number of tempting mistakes.

- First, the question should be what would count as nonphysical, not what would count as spiritual. It is not clear to me that the concept of the spiritual has enough content to warrant discussion at all. Even if it does, that discussion would surely turn on questions that are largely distinct from questions of how to demarcate the physical. There very well could be nonphysical things that are not spiritual, and I am inclined to say that there could be spiritual things that are physical.
- Second, we should not suppose that there will be one true criterion for what demarcates the physical. Rather, it seems to me that there are many ways the world might be such that, if the world were like that, then we could justly speak of a fundamental divide between two or more realms.¹⁸
- Third, we should expect the whole discussion to be infused with a certain level of conventionality. I see nothing in our concept of the physical that forces us to accept any particular place of demarcation; moreover, it seems to me plausible to judge some worlds as more fundamentally divided than others. There will then unavoidably be an element of unforced decision in all these cases. What I would hope, though, is that in at least some cases reasonable observers will be able to agree that, if the world were like that, then we could justly say that physicalism is false.

This last point leads to a further observation about the doctrine of physicalism. One way to defend that doctrine, in light of my approach, would be to insist, for each world canvassed, that there is no divide in that world fundamental enough to justify a distinction between the physical and the nonphysical. In a sense, that would make physicalism a trivial doctrine, but the exercise itself would be revealing, because we would then understand precisely why that philosopher is a committed physicalist: For such a philosopher, there *could not be* any such thing as the nonphysical. Conversely, if we can get the physicalist to agree on various worlds that would not count as wholly physical, we then suddenly have a well-defined research agenda for dualism. The dualist would need to show that our world has some of the characteristics found in those other worlds, characteristics that we have agreed would serve as marks of the nonphysical. The physicalist, conversely, would seek to show that our world has none of those characteristics.

¹⁸ Given the possibility of multiple criteria, it follows that (for all we know) there could be worlds with three or more distinct realms: a physical realm and various nonphysical realms each distinct from the other in some fundamental way. Indeed, this would seem to be precisely the view held by dualists who are also platonists about properties or numbers. Consider, e.g., Popper's Third World.

Let us turn to the candidates before us. I am strongly inclined to accept N1 as a mark of the nonphysical. So far as we know, everything in our world has a location. If it turned out that there were things in this world that lacked location, then that would seem to introduce as fundamental a divide as one could imagine. It is of course tempting to follow Hobbes and More in saying something more than this: that there in fact could not be anything that lacked a location. I will not take a side on the merits of that claim. The very fact that the claim is tempting, however, serves to support the idea that if things could exist without location then they would be very alien indeed to our familiar physical realm.

So far in this section, I have been speaking of physicalism in the most general sense, as a global claim about everything that exists, and I have correspondingly been speaking of the nonphysical in such a way as to cover not just minds but anything that might rightly be thought of as fundamentally alien to the physical realm: numbers, properties, sets, and so on. At this point it becomes helpful to consider the different ways in which it might be plausible for *minds* to be nonphysical, versus how it might be plausible for *abstract objects* to be nonphysical. With respect to the latter, N1 seems entirely plausible. If there are, for instance, numbers, then it is hard to see how they could have a location, and one might in general suppose that it is part of the very nature of abstract objects to lack location. In the case of mind, however, the situation seems quite different. Because minds seem to be causally connected to the body, we have available an obvious account of where a nonphysical mind would exist: it would exist at those places where it is acting on (or being acted on by) physical things. On this account, the human mind – even if nonphysical – would exist in the brain. Aquinas is an example of someone who accepts that immaterial things are located where they exert some causal influence. Indeed, he uses this doctrine, together with the doctrine that God constantly conserves each and every part of the universe, to argue for God's omnipresence.¹⁹

The doctrine that things exist where they exert causal influence presupposes – and indeed entails – the impossibility of action at a distance. I see no way of proving that action at a distance is impossible, and consequently there seems to be nothing *forcing* us to accept Aquinas's principle of location. Still, I think we can say something further than that such an account of the mind's location is *available* to us (whereas we have no idea how to understand the idea that numbers, conceived platonically, have a location). What we can further say is that it would seem very hard to justify denying that the

¹⁹ See, e.g., *Summa theol.* 1a 8.1, 52.1, 76.8.

human mind exists in the brain. The reason why even a dualist can say this, as we have seen, is that this is where the mind seems to interact causally with the physical world. But this is the same reason we have for locating *anything* in the world, physical or not. We think the Lincoln Memorial is in Washington because that's where it makes its causal impact on the world. We don't think it's located in Colorado, because it doesn't *do* anything there. Now perhaps action at a distance is possible; if so, then perhaps the Lincoln Memorial does exist in Colorado. Yet if we cannot quite *prove* that this is not so, I think we can say that we have at least very good evidence against that possibility. Our evidence for locating the mind in the brain seems just as strong, however, assuming that one accepts that the mind and the brain causally interact. Accordingly, if we accept interaction, we should not suppose that the mind lacks location. Although N1 remains a theoretical possibility as an account of what would make a mind nonphysical, it is not an attractive possibility for the human mind.²⁰

Turning now to N2, I think we should reject location at a mathematical point as a mark of the nonphysical. Admittedly, it is hard to understand how anything at all could exist in this way. For if a thing is to have a location, then it is natural to suppose that it must occupy space, and not simply exist at a nonextended point. If this does not seem intuitively obvious, then an argument like the one just considered might again be advanced. We give things location on the basis of the effects they have on the world. Yet how could a thing have an effect only at a mathematical point? Nothing could happen at a nonextended point, it would seem, and so accordingly nothing could have an effect limited to just one point. On reflection, however, this version of the earlier argument can be rejected. Imagine a source of light existing at a single mathematical point. Although it is hard to give any sense to the idea that this light source would act on that dimensionless point, we can understand the idea of light's emanating from a single point, filling the space around it with light without itself occupying any of that

²⁰ Hoffman and Rosenkrantz (1991) contend that it holds of logical necessity that a spiritual, nonphysical soul will be nonlocated. So far as I can see, their argument rests on the claim that a soul with a location could not be "purely spiritual" because "it would not be *wholly* outside of the physical world, inasmuch as it would occupy a point of space" (185). If there's an argument at all here, it turns on an equivocation in the phrase "outside of." If "outside of the physical world" means *not physical*, then we still have no reason to think occupying a point in space is incompatible with being nonphysical. If, on the other hand, "outside of the physical world" means *not located in the same space as the physical*, then it begs the question to suppose that this is required for being nonphysical.

space. Though the possibility of such a dimensionless light source looks physically unlikely, it does not seem conceptually incoherent. Moreover, modern physicists have at times been tempted to postulate dimensionless point particles in various contexts. The coherence of such talk seems to be an open question among physicists, but what matters for our purposes is that the physicists are perfectly happy to countenance such a possibility in principle. No one supposes that such particles would be in any sense nonphysical. Hence there seems no reason to treat N2 as a mark of the nonphysical.

In the popular imagination, ghosts are marked as nonphysical in virtue of their ability to pass through physical objects. Descartes and More, as we have seen, likewise describe penetrability (N3) as a characteristic of the nonphysical. Where they disagree is that Descartes takes impenetrability to follow from the very nature of extension, whereas More takes it to be an additional characteristic. Here is Descartes's argument:

One cannot understand one part of an extended thing to penetrate another equal part without thereby understanding that half the total extension is taken away or annihilated. What is annihilated, however, does not penetrate anything else. In my opinion, then, it is demonstrated that impenetrability belongs to the essence of extension rather than to the essence of any other thing (to More, April 15, 1649; V 342).

Consider two solid balls, each one cubic meter in volume, that can magically interpenetrate one another. Let them exactly overlap in location. Whereas we once had two cubic meters of extended stuff, we now have only one cubic meter of extended stuff. But since extension just is matter, this lost extension must also be lost matter, and so half of the matter of those two balls must have been annihilated. But "what is annihilated does not penetrate anything else." What makes these balls magic, therefore, is not the ability to interpenetrate each other, but the ability to annihilate each other. In sum, it is impossible for one extended thing to interpenetrate another.

So far as I can see, the argument runs equally well for anything that has location – even if it exists only at a mathematical point. For if we imagine, as Descartes does, that space is a plenum – completely filled in by matter – then every point in space will be occupied, and even the introduction of one more dimensionless particle would require a corresponding annihilation. To say that the argument runs equally well in this case, however, is not to say that the argument is successful. Indeed, we now have reason to suspect that it cannot be successful: we know that neutrinos regularly pass unimpeded straight through the earth, from end to end, which seems possible only if they can pass straight through other particles. As before, what matters is not

whether this story is correct, but the bare fact that no one takes neutrinos to be nonphysical, even when so described. So where does Descartes's argument go wrong? Think again of the two solid, one-meter balls. As Descartes conceives of the situation, it cannot be the case that

$$1m + 1m = 2m,$$

because if they exactly overlap then we have only one meter of extension. Therefore,

$$1m + 1m = 1m.$$

In that case, however, we have lost half our extension. Since extension just is matter, this would be a case of annihilation rather than overlap. Now it might seem that the flaw lies in Descartes's identification of extension with matter. This, however, is not essential to the argument. For however we think of that second possibility, according to which we lose half our extension, it cannot be described as overlap. To say that things overlap in a certain region of space is to say that they are *both* extended over that region. If one or the other gives up some of its extension to make room for the other, then to that extent they are not overlapping. So overlap requires the paradoxical situation where a region of space with volume x wholly contains objects with total volume y , and $y > x$. Descartes's argument tacitly presupposes that this is impossible. In terms of our example, he presupposes that if the balls exactly overlap, the total volume must be one meter. But this assumption needs some defense. The proponent of overlap will simply insist that in such cases the total volume of the overlapping objects does exceed the volume of the space in which those objects are located. Indeed, as we have just seen, this claim is the very essence of what overlap consists in. In presupposing that that is impossible, Descartes simply begs the question.²¹

Even if impenetrability and extension are not conceptually connected, one might still take penetrability as a mark of the nonphysical. Though the case of neutrinos discourages this conclusion, it is worth considering how Descartes and More understand N3. As we have seen, Descartes is willing to allow that minds are extended in a sense. The human mind, for instance, extends throughout the whole human body, and in that sense overlaps with the body. This is not a counterexample to his prohibition against overlap, because he takes that prohibition to apply only to things that are essentially extended. In contrast, things that are derivatively extended have extension *only if* they overlap something else: their extension depends

²¹ My analysis here is indebted to Bennett (2001), vol. 1, 31, whom I understand to make essentially the same points against Descartes.

on their stretching themselves out over bodies, where this is understood in terms of their acting on those bodies (see §III). This shows that, for Descartes, although penetrability might be a *mark* of the nonphysical, it is not the ultimate explanation of what distinguishes the physical and the nonphysical. To understand that, we would need to understand what makes some things extended essentially and others extended only derivatively. I will take up this problem in the next section.

Although More appears to treat penetrability as a mark of the nonphysical, a closer look at his account shows that it does not function in this way. As we have seen, he does take God to interpenetrate with everything, in virtue of being identical with the underlying space of the universe. This can hardly explain why God is nonphysical: after all, we don't ordinarily suppose that *space* is nonphysical. Moreover, More has a very different understanding of the way in which the human mind overlaps with bodies. To account for this, he appeals to a fourth dimension, the special domain of spirits. This move allows him to say that a soul can exist in the same place as a body without either one's losing any extension. The body stays where it is, while the soul squeezes into the fourth dimension of that same place.²² In saying this, however, More is *denying* that mind and body interpenetrate. By putting the mind into that fourth dimension, he evades the need for any overlap. Genuine interpenetration occurs when things are located together in the same dimension. On More's account, then, the human mind's immateriality cannot be explained in terms of penetrability.

In making this rather unlikely appeal to a fourth dimension, More is attempting to evade Descartes's argument for the link between extension and impenetrability.²³ That argument, as quoted earlier, occurred in a letter to More, and we can imagine that he absorbed the content of those letters fairly thoroughly. As we have seen, though, this is the wrong solution: More didn't need to dodge Descartes's argument, because the argument has no force. He should instead have simply insisted that minds and bodies are the sorts of things that can overlap, without either one's losing any extension. This is in fact the approach he does take with God, who overlaps with all bodies inasmuch as God constitutes our familiar three dimensions.

²² "Wherever either many essences or more of an essence is contained in one place than the size of that place permits, we there recognize this fourth dimension, which I call its essential spissitude" (*Ench. Met.* 28.7; Jacob, 121).

²³ He makes that motivation explicit at *Immortality of the Soul* I.2.11, where he describes Descartes's argument against overlap and then introduces this fourth dimension to solve it.

Indeed, More's understanding of God provides an excellent counterexample to Descartes's argument. If that argument were right, then we could not conceive of space as itself an extended thing: we would be forced to take Descartes's position that space just is the bodies that constitute it. Surely, however, there is nothing in Descartes's argument that is strong enough to block the possibility that bodies exist in space in virtue of overlapping with some further thing, space itself. Descartes simply assumes, without justification, that that conception of space is impossible. It seems fairly clear, then, both that there is no conceptual connection between extension and impenetrability, and that penetrability is not promising as a mark of the nonphysical.

14.5.

The fourth characterization of being nonextended (N4) is indiscernibility (that is, the lack of extended parts, or the failure of partition). Although both Descartes and More tend to speak of partition and impenetrability in the same breath, as if they were conceptually connected, there is (so far as I can see) no such connection. Something could satisfy partition and yet penetrate bodies, and something could be impenetrable and not satisfy partition.²⁴ This is good news, since if the argument of the previous section is right, impenetrability is not a mark of the corporeal. The possibility remains open, though, that partition serves to demarcate the physical and nonphysical – and in this final section of the paper I want to argue that this is so.

The partition criterion has a long history. Augustine, in *De trinitate* X, defines body as that “of which a part is less than the whole in spatial extension” (vii.9). He goes on to say, in this same passage, that if some have a broader conception of what it is to be a body, “we should not argue with them over a question of terminology.” As we have seen, this is exactly what Descartes would later say to More. Augustine, in turn, may well have been hearing echoes of Plotinus:

We say that there are things primarily apt to partition, by their very nature prone to scatter. They are things in which no part is the same as either another part or the whole, things of which a part is necessarily less than the total and

²⁴ In fact, though More does constantly connect these two criteria, he holds against Descartes that there is no conceptual connection: “In an extended substance there can be parts outside of parts without any *antitupia* or mutual resistance.... I insist that I can conceive of these things clearly and distinctly through the mind” (to Descartes, July 23 1649; V 378).

whole. These are sensible magnitudes and masses, each of which has its own place and cannot itself be in several places at the same time (*Ennead* IV.2.1).

As we will see, all this is precisely what the proponent of partition should say.

It does not look plausible to insist that all and only physical things must satisfy partition. This would entail that everything physical has parts – that there are no simple physical objects. Whether this is so would seem to be an empirical question that we should not decide through conceptual analysis. What I suggest instead is that we treat extension without partition as a mark of the nonphysical. This is not to claim, as More does, that *all* nonphysical things are extended without partition. For all we have seen, things might qualify as nonphysical in many different ways, and I have already identified lacking location entirely as one such possibility. All I mean to claim here, then, is that *another* way of being nonphysical would be to have extension without partition.

At this point, we should try to get clear about what *extension without partition* means. At the start of the previous section, I observed that we could give up our vague talk of extension in favor of N1–N5. Let me say here, then, that by “extension” I mean *having location at one time at more than a single mathematical point*. The paradigm of such extension is continuous extension over a range of points – in other words, occupying a region of space. For present purposes, however, we can also count as extended something that exists at once at several discrete points but at nowhere in between. (Think of a connect-the-dots picture before the dots are connected.) Now it is easy enough, intuitively, to understand what it means to be extended in this way and to satisfy partition. A thing that is extended satisfies partition in virtue of having one part at one place, another part at another. Depending on what that thing is, we may or may not be able actually to divide it into parts. Still, it clearly has parts, and could in principle be divided into those parts. Likewise, it seems clear how a thing that lacks such extension would fail to satisfy partition. Something that existed only at a single point, or nowhere at all, would obviously not have parts that are less than the whole.

To understand these claims more exactly, it is important to be clear about the sense of “part” at issue here. Something nonextended might still be said to have parts of a certain sort. Such a thing might have various powers or capacities, for instance, in which case we could treat each of those powers as a kind of part.²⁵ What something nonextended will not have is spatial

²⁵ This is how Aquinas, following Aristotle, understands the soul to have parts: see *Commentary on the “De anima”* I.14.58–75.

parts, where a *spatial* part of something is a proper part that is less extended than the whole. But once we are clear on this much, it may seem impossible for a thing to have extension without satisfying spatial partition. For, if a thing is extended over multiple points in space, then how can it fail to have spatial parts? Even something minimally extended – existing solely at two points, *x* and *y*, in space – could still be said to have spatial parts: the part that exists at point *x* and the part that exists at point *y*. Yet, contrary to appearances, extension without spatial partition is possible, even in the case of something minimally extended. What is required is that the extended object exist wholly at *x* and wholly at *y*. Such a thing would have no proper spatial parts: the part that exists at *x* would not be a *proper* part of it, but the whole of it, and similarly for what exists at *y*. Generally, a thing can be extended without spatial partition if it exists as a whole at every place where it exists.

It is quite clear that Plotinus, in the passage quoted above, has this concept of partition in mind. Descartes likewise appeals to it, when he says of body that “each part ... is distinct from all other parts” (to More, August 1649, V 403). The point of insisting on this, we can now see, is to rule out the case where a thing wholly exists at more than one place. John Locke attacks Descartes’s theory of extension for its obscurity in this regard, but wholly misunderstands what is at stake. Locke says that he need not explain the nature of space, since his opponents cannot explain the nature of extension: “For to say, as is usually done, that extension is to have *partes extra partes* is to say only that *extension is extension*” (*Essay* II.xiii.15). To be sure, having *parts outside of parts* conveys only one aspect of Descartes’s account of extension. But it does convey a crucial part of that account. Indeed, he used this very phrase in correspondence with More, remarking that “I call extended only what is imaginable as having *partes extra partes*, of determinate size and shape – although other things are also called extended by analogy” (V 270).²⁶

More of course denies that God has *partes extra partes*. Instead, God is extended without satisfying partition:

²⁶ I have not been able to locate the origin of the phrase *partes extra partes*. Descartes and More use it repeatedly in their correspondence, and Gassendi uses it, unprompted, in the Fifth Objections (VII 337). It does not occur in either Aquinas or Augustine, but it does occur in a great many other medieval texts; for instance, in William Ockham, *Quodlibet* IV.23. Ockham uses the standard scholastic terminology of *circumscriptive* and *definitive* to draw the distinction between extension with and without partition (see *Quod.* IV.21).

God – inasmuch as the human mind conceives of God – is whole everywhere, and his complete essence is present at all points or spaces and points of space. It therefore does not follow [from his being extended] that he has *partes extra partes*, or – the consequence of this – that he is divisible, even though he closely and tightly occupies all places, without any remaining interval. Thus I acknowledge that what you call divine presence or amplitude is measurable, but I do not in any way acknowledge that God himself is divisible (V 305).

It is unfortunate, however, that More focuses on *divisibility* as his mark of the corporeal. For though we have now seen how extension without partition entails indivisibility, it is still somewhat misleading to insist that nothing nonphysical can be divided. For insofar as souls can be said to have discrete powers, it would seem quite possible for the soul to exist apart from some of its powers. There is, moreover, no obvious reason why platonic objects could not be composite in a way that would allow for divisibility. Perhaps this is why More prefers to speak of *discerpibility*, which he characterizes as “gross tearing or cutting one part from another” (*Immortality* I.ii.10). This, evidently, is limited to spatial parts, which avoids the problems mentioned. Still, More faces another rather obvious problem, this time to divisibility or discerpibility as a necessary characterization of bodies. Since he denies that matter is infinitely divisible, he has to concede “that matter consists of indiscerpible particles” (*Immortality* pref. §3). This does not entail incorporeality, he explains, because those particles are still divisible intellectually. That leads directly to trouble, though, because “divisible only intellectually... [is] of the very essence of whatsoever is to have Parts or Extension in some measure or another.” (*ibid.*). This suggests that souls too should be divisible intellectually, in virtue of their extension, and sure enough we later find More remarking that “soul is intellectually divisible but really indiscerpible” (*Immortality* I.x.8), which is just exactly what he holds with respect to his corporeal particles.

More might have evaded this trouble by focusing on extension without partition, rather than indivisibility, as a mark of the nonphysical. Rather surprisingly, however, he did not. For even though More accepted that God is whole everywhere, and wholly in every place, he argued fiercely against this sort of account for human souls, on the grounds of its obscurity. Instead, he took the human soul to be indivisible in the sense that it essentially possesses a determinate extension (in a fourth dimension) that cannot actually be split apart (*Ench. Met.* 27.12–14). This is what leads him inescapably into contradiction with his account of corporeal atoms. That contradiction entirely undermines More’s basis for insisting that souls are incorporeal. If atoms are indiscerpible in just the way that souls are, then it seems we should say either that atoms are incorporeal or that souls are corporeal.

No wonder, then, that so many philosophers – including Plotinus and Augustine, and throughout the scholastic era – chose to treat the soul's mode of existence in the body as like God's mode of existence in the universe.²⁷ Descartes too speaks in this way, remarking that “this is exactly the way in which I now understand the mind to be coextensive with the body – the whole mind in the whole body and the whole mind in any one of its parts” (Sixth Replies, VII 442). Scholars have wondered why Descartes would embrace this obscure-looking scholastic doctrine. We are now in a position to see why he does. If the mind were not whole in each place where it exists, then it would seem to satisfy partition, which would in turn threaten Descartes's account of why the soul is not extended.

Quite apart from God and the soul, philosophers have very often thought that all kinds of forms and properties satisfy extension without spatial partition. Aquinas, for instance, thinks that the human soul is just one example of a general truth about forms. In all cases, he thinks, “a thing's nature is whole in each part” (*InDA* I.8.126–27). This is true not just for substantial forms like the soul but even for accidental forms like the color white (*ST* Ia 76.8c). In contemporary philosophy, likewise, a universal is standardly characterized as a property that is able to be wholly present at more than one place at the same time. Thus the universal *whiteness* wholly exists in the top left corner of the page, *and* in the bottom right corner of the page, and on the next page, and so on. It is not that part of the property exists here and part there, but that the whole exists here and also there.

With all this in mind, let us proceed as before to ask whether things extended without spatial partition should be considered so different from the physical as to be positively nonphysical. It seems to me quite plausible to say that they should. Whereas there is surely room within our concept of the physical for things that exist only at a nonextended point (N2), and for things that interpenetrate other things (N3), it seems fundamentally alien to the physical for there to be things that exist wholly in one place, and at the same time wholly in another. If this is not immediately obvious, then consider that such a thing would have the following peculiar property: its destruction in any region of space – that is, its being made not to exist in a place where it formerly did exist – would not entail the destruction of any part of it. So long as it continues to exist elsewhere, the *whole* of it continues to exist elsewhere. Descartes highlights this feature of the incorporeal:

²⁷ See, e.g., Plotinus, *Enneads* IV.2.1; Augustine, *De trinitate* VI.vi.8; Aquinas, *ST* Ia 76.8.

The soul is of such a nature that it has no relation to extension, or to the dimensions or other properties of the matter of which the body is composed.... This is obvious from our inability to conceive of a half or a third of a soul, or of the extension that a soul occupies. Nor does the soul become any smaller if we cut off some part of the body... (*Passions of the Soul* I.30).

Such elimination from some region of space would be merely an *apparent* destruction, in the sense that it would be at most a change in shape, without any other loss. The thing would remain the same in its natures, powers, and dispositions. Some will say that the very idea of such existence is incoherent or absurd, but what seems safer to say is that if there are such things, they deserve to be treated as a separate class of entities.

I just remarked that if some such nonphysical object were removed from some region of space then this would constitute at most a change in shape. This calls for further comment. Consider the property *whiteness*. Even if it exists in the way that the immanent realist says it does, wholly in various places at once, it would be rather odd to suppose that I could change the shape of that property simply by burning this page. To be sure, on this view, the property has a location – many, many locations at once, in virtue of which it counts as extended on my present usage. In virtue of these locations, one might go on to insist that the property has a shape. But what seems right instead is that the collection of all white things has a shape – a highly complex, discontinuous shape scattered through the universe. The property itself, in contrast, surely has no shape on this view. One reason for saying this is that – as before – white things can be destroyed without making any difference to the property itself.

This leads to the thought that shape and therefore extension are not an essential feature of things that are extended without spatial partition. A soul can be extended, in the sense I have stipulated, but does not necessarily have any particular shape, or even any shape at all. This is surely what Descartes has in mind when he remarks, as just quoted, that the soul “has no relation to extension.” Hence things that satisfy N4 will also satisfy N5: they will be extended derivatively rather than essentially. A thing whose existence is not distributed over space, but is whole in each part of space, is extended only contingently. If a soul, for instance, exists wholly wherever it exists, then it can in principle continue to exist no matter how much it is confined and restricted, perhaps even all the way down to a mathematical point.

It is important, however, to stress the qualification *in principle*. For though the nature of extension without spatial partition is consistent with the possibility that a thing existing in that way might come not to be extended at all, the question of whether this is so in a particular case has to be left open.

For the platonic realist color properties can perhaps exist uninstantiated, and so presumably exist without any location at all. But a realist might just as well insist that there are no uninstantiated properties, in which case *whiteness* requires something extended in which to instantiate itself. In that case, there will be a minimal size required, given that there are no colors at the microscopic level. Much the same would be true for souls. If there are souls that can exist apart from their bodies, then they could exist without any extension whatsoever, and perhaps without any location. But there might also be souls that are inseparable from body. Such a soul could not exist without extension, and presumably could not exist without a certain amount and kind of extended stuff: chop enough branches off a tree and its soul will cease to exist, just as pounding an almond removes its whiteness.

Despite these qualifications, there does seem to be a conceptual connection between being extended without spatial partition and having extension derivatively. This vindicates Descartes's claim that there is a concept of *real extension* characterized by having spatial parts and being extended essentially. (His further claim that real extension entails impenetrability looks to be a mistake.) In addition, it seems quite plausible to conclude with Descartes that real extension is at least a mark of the physical, inasmuch as things that could be extended without these features would seem to constitute a quite distinct class of beings. Furthermore, once one becomes clear on what sorts of things would belong to this class, the concept of the nonphysical begins to look far less strange and obscure. If there are universals in re, or Aristotelian forms, then the realm of the nonphysical will turn out to be quite commonplace and familiar. Perhaps souls can be understood to fit comfortably within that ontology.²⁸

²⁸ I owe thanks to the participants in the 2002 Uppsala conference for their extremely helpful comments on this material.

CHAPTER FIFTEEN

EMOTIONAL PATHOLOGIES AND REASON IN FRENCH MEDICAL ENLIGHTENMENT¹

Timo Kaitaro

Arthur Damasio has recently presented evidence to the effect that we are perhaps wrong in thinking that it is only the brain that thinks.² Rational decision-making involves emotional reactions as necessary conditions and background. And since emotions involve bodily reactions which are not limited to the brain but which embrace the autonomous nervous system and the viscera, one could say that we actually think with our bodies and not merely with our brains. According to Damasio the incapacity of patients with frontal lobe pathology in decision-making could be explained by a disturbance in emotional reactions involving the whole organism. Philosophical discussions concerning brains in a vat have completely forgotten these aspects of our mental life. Despite the fact that the idea that we think exclusively with our brains has during the modern age been a rather widely held "received view", there is a physiological and philosophical tradition which regarded mental functions as the result of the interaction of several organs, instead of seeing them as the result of the activity of the brain alone.

This eighteenth-century tradition originates in the physiological theories of the so-called Montpellierian vitalists, whose representatives wrote medical articles for the *Encyclopédie* and whose influence is still manifest at the beginning of the next century, mainly in the medical Ideology of Cabanis.

¹ Parts of this paper have been presented earlier in the *Tenth Conference of Theoretical & Experimental Neuropsychology TENNET*, June 17–19th 1999 (Kaitaro 2000) and in the *Annual Meeting of the Association for the Advancement of Philosophy & Psychiatry: Melancolia*, New Orleans, 5th and 6th May 2001.

² Damasio (1995).