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SOUL AND BODY IN ARISTOTLE*

CHRISTOPHER SHIELDS

I

ARISTOTLE concerns himself with many of the issues we now recognize under the general rubric 'the philosophy of mind'; his investigations include queries into the relationship between soul and body, the nature of the mental states and the manner in which they are realized, the semantic character of intentional states, and the ontological status of intentional objects. Though much has been said about Aristotle's views on the first of these topics, virtually no progress toward a consensus has been attained. On the contrary, one finds an alarmingly large and diverse literature on Aristotle's account of soul/body relations: he has been characterized as materialist, dualist, attribute theorist, and as holding a *sui generis* account of body and soul.[1] It is surprising, but true, that quite reasonable arguments can be

[1] A materialist account of Aristotle can be found in Slakey [36], Wilkes [44], and Hartman [7]. All three recognize *nous* as immaterial, but treat it as an exception and unfortunate lapse in Aristotle's account. Unlike Slakey, Hartman and Wilkes think that Aristotle's variety of materialism is explanatorily efficacious. A much more detailed defence of materialism in Aristotle can be found in Charles [5] who concludes that Aristotle is a 'non-reductive ontological materialist'. Solmsen [37] maintains that Aristotle has an immaterialist account of perception and thinking, but does not discuss the broader question whether the soul is an immaterial entity. Similarly, and more recently, Robinson [28] has advanced the view that since mental properties for Aristotle are emergent, he must be regarded as a property dualist. Zeller [46], 4, argues directly that the soul as form must be immaterial and concludes, 'The soul, considered as the form and moving principle of the body, must itself be incorporeal; and here Aristotle contradicts the interpreters of his theory who represent it as being material in nature'. Barnes [3], 41, argues that Aristotle 'emerges as a fairly consistent upholder of an attribute theory of mind'. G. R. T. Ross [30], 6, claims that Aristotle's theory might be called a doctrine of psycho-physical parallelism, and then hastens to insist that mental states are not epiphenomenal in Aristotle. It is unclear what Ross has in mind here, since on a normal parallelist account (e.g. Leibniz's), there is no question of causal interaction in either direction. Sorabji [38] has made the suggestion that Aristotle's account is *sui generis* and 'not to be identified with the positions of more recent philosophers' (43). An earlier attempt to find some *tertium quid* in Aristotle can be found in Siwek [35] who

advanced for ascribing each of these incompatible views to Aristotle. His account of the soul and its capacities in the *de Anima* (*DA*) is both cryptic and subtle, as well as extremely compressed; one needs to unpack his various remarks in light of the ontological commitments made in the *Metaphysics* (*Meta.*) and elsewhere.

For example, in *de Anima* II.1 Aristotle claims that the soul is the form of the body (412a20). Presumably, then, he regards the relationship between soul and body as a special case of the relationship between form and matter. Thus, since Aristotle believes that form and matter are one (*Meta.* 1045b16–24), he must likewise believe that soul and body are one. And so he does, or apparently does, in *de Anima* II.1: 'It is not necessary, then, to enquire whether soul and body are one, just as it is not [necessary to enquire whether] the wax and its shape [are one], nor generally whether the matter of each thing and that of which it is the matter are one; for while one is spoken of in many ways, the proper [way] is as actuality' (412b6–9). This passage suggests that Aristotle does indeed regard the soul/body relationship as a special case of the form/matter relationship: soul and body, like form and matter, are one, and one in a fundamentally important sense.

Even so, there are many obscurities in Aristotle's analysis of form and matter. Though in *Metaphysics* VIII.6 he says that they are one, he regularly ascribes apparently distinct properties to matter and form. Form is actually *x*, while matter is potentially *x* (*DA* 412a10). Matter, like the compound of form and matter, is posterior to form (*Meta.* 1029a32). Forms are substances to a greater degree than matter (some would say *rather* than matter; cf. 1029a29–30: *dio to eidos kai to ex amphoin ousia doxeien an einai mallon tēs hulēs*).[2] So there is at least some prima facie evidence that Aristotle does not regard form and matter as

concludes: 'Elle [i.e. la psychologie aristotélicienne] nous apparaît ainsi en effet comme une théorie qui tient le milieu entre le matérialisme et le spiritualisme' (195).

[2] But here I would argue that we should translate *mallon* as 'more' rather than 'rather'. In *Meta.* VII.3, Aristotle appears to deny substantiality to both matter and the compound, on the grounds that the one is not a *tode ti* and the other is posterior (1029a26–31). This appearance is illusory. Importantly, Aristotle believes that form, matter, and compound are all substances (1029a33–4 claims that it is necessary to enquire into the third kind of substance—*tritēs* agreeing in gender with *ousia*). Thus, Aristotle's claim that form and compound are substances *mallon* than matter (1029a29–30) must mean 'more than', i.e. to a greater degree than, and not 'rather than'. (The Greek *mallon* is compatible with both these translations.) Thus, in my view, Aristotle allows for degrees of substance in this chapter, with matter fulfilling the bare minimal criteria (but, for that, fulfilling the criteria and so substantial), while form satisfies the criteria best, or most fully. This commitment to three grades of substance is important, and will have ramifications for Aristotle's account of body and soul.

identical; indeed there is also prima facie evidence against the view that matter constitutes form, since Aristotle evidently ascribes distinct non-modal properties to them, and we should suppose that a necessary condition of *x*'s constituting *y* is that *x* and *y* have all their non-modal properties in common. So one should not suppose that the soul/body relationship can be readily or easily explicated in terms of the form/matter relationship.

It is not surprising then that the obscurities in Aristotle's account of the unity of form and matter carry over into his analysis of soul and body. In the same chapter of the *de Anima* in which he eschews any enquiry into whether the soul and body are one, Aristotle claims that the soul is not the body. His reason for regarding them as distinct mirrors his reason for regarding form and matter as distinct. Body and soul have distinct properties (body is a *hupokeimenon* while soul is not, but rather belongs to a *hupokeimenon*; *DA* 412a19–28), and so by Leibniz's Law are not identical. These passages in no way prove that body and soul, or generally, matter and form, are not identical. Rather, they show that we should assume neither identity nor non-identity from the start. An adequate interpretation must, if possible, take into consideration all of Aristotle's seemingly incompatible characterizations of soul and body.

The aim of this paper is to sort out Aristotle's various characterizations of body and soul in light of recent developments in the philosophy of mind in order to determine just where he stands on the question of soul/body relations and thereby to determine whether his account illuminates or obscures issues of concern today. The preponderance of contemporary criticism represents Aristotle as some sort of weak materialist: the received view is that Aristotle's materialism is non-reductive in the sense that mental state types are not identical to physical state types.[3] But no compelling argument has been given for this reading of Aristotle. Many commentators have noticed an anti-dualist strain in Aristotle, and have concluded that he must be some sort of materialist or other; but the passages cited in favour of this view are uniformly ambiguous and so inconclusive, except that they tell against one certain variety of dualism, namely Cartesianism.[4] This is fortunate, for given his analysis of form and soul

[3] Commentators who argue that Aristotle must be regarded as a weak materialist include Sorabji [38], Nussbaum [25], and Charles [5].

[4] For our purposes it will be convenient to regard the Cartesian dualist as committed to the following theses: (1) minds or souls have one and only one essential property,

Aristotle cannot be regarded as any sort of materialist. He must, therefore, be regarded as a non-Cartesian dualist, as what we might term a *supervenient dualist* in the philosophy of mind.[5]

II

Aristotle is a philosopher intimately concerned with the relation between physiological and mental states. But he is also a highly systematic philosopher concerned to frame his detailed investigations in the philosophy of mind in terms of the ontological schema articulated in the *Metaphysics* and elsewhere. It is precisely because Aristotle repeatedly refers to the soul as the form of the body that he commits himself to a form of dualism. Aristotelian forms, including the qualitatively distinct particular forms of organisms,[6] are immaterial. Since the soul is one such form, it is immaterial.

One of Aristotle's few sustained discussions of the nature of the relationship between form and matter occurs in *Metaphysics* VII.17. This chapter, by itself, requires neither materialism nor immaterialism for forms. But it provides an unusually clear discussion of the relevant alternatives, and consequently delimits the available interpretations of Aristotle's analysis of soul. *Metaphysics* VII.17 leaves only the following

namely thinking; (2) bodies have one and only one essential property, namely extension; and (3) the mind or soul is, as Descartes himself says, 'entirely and absolutely distinct from [the] body, and can exist without it' (*Meditation*, VI). I believe that this is in fact the position Descartes himself accepted, though this is sometimes disputed (see, e.g., *Meditation* VI, together with *Discourse on Method* IV: 'From that I knew that I was a substance the whole essence or nature of which is to think, and that for its existence there is no need of any place, nor does it depend on any material thing'). But for the present purposes we can stipulate that these conditions are definitive of 'Cartesianism', whether or not Descartes himself accepted this position. For a succinct account of Cartesianism, see Churchland [6], 7–9.

[5] The investigations which follow concern the question of whether Aristotle believes that the *psuchē* is an immaterial particular; I take it as beyond controversy that Aristotle regards one capacity of the soul, *nous*, as immaterial. Many contemporary commentators have preferred to ignore or dismiss Aristotle's commitment to an immaterial intellect (in the first case see Nussbaum [25] and in the second Wilkes [44], while many others have run together the logically distinct matters of Aristotle's analyses of *psüche* and *nous* (e.g. Robinson [28]).

[6] I here presuppose without argumentation that Aristotle is committed to the existence of particular forms. A growing number of commentators have come to accept this view, but few have embraced it in the strong formulation I have given it, carrying as it does a commitment to qualitative as well as numerical particularity. For a detailed analysis of the role of particular forms in Aristotle's metaphysics see Whiting [41].

alternatives as live options: (1) the soul is an attribute or property (or set of properties) of the body; (2) the body constitutes the soul; and (3) the soul is an immaterial substance.

The chore of assessing *Metaphysics* VII.17 is immediately complicated, however, by competing accounts of matter in Aristotle; for the claim that form is (or is not) identical with matter is stronger or weaker depending upon how we conceive matter. Though he conceives of matter in different ways in different contexts, Aristotle frequently complains that matter lacks the determinacy of form. In *Metaphysics* VII.11, for example, he claims that there is no account of the compound (*sunholos*) with its matter, since the matter is indeterminate (1037a27), but allows that there is a definition of it with respect to its primary substance, holding that 'the account of the soul is [the account] of the man' (1037a28–9). This has suggested to some commentators a distinction between 'thick' and 'thin' compounds, a distinction which is explicated in terms of proximate and non-proximate matter.[7] A thick compound is a compound of form and some non-proximate matter, which is either a certain quantity or piece of matter.[8] A thick compound has this quantity or piece of matter essentially, since it is a compound of a form and a particular quantity or piece of matter. A thin compound is a compound of form and proximate matter, which is a functionally defined temporally continuous 'slice' of matter (e.g. an organic body). The proximate matter of an organism is constituted by different quantities or pieces of non-proximate matter throughout its existence.

Though I am doubtful that Aristotle means to distinguish between thick and thin compounds in *Metaphysics* VII.11,[9] I grant that he does

[7] See Whiting [41], 60–70, 210–12. Aristotle speaks of proximate matter (*eschatē hulē*) at *Meta.* 1045b18, where he says that 'the proximate matter and the form are one and the same'. This passage does not entail that the proximate matter and form are *identical* since there are other ways in which form and matter can be one.

[8] A 'piece' of matter is here a Lockean mass, which is, roughly a quantity when all the particles of that quantity are spatially contiguous.

[9] This is because I understand 1037a21–9 as allowing that there is an account of the compound only in the attenuated or derivative sense that there is an account of the 'primary subsance' i.e. the particular form of that compound. See Heinaman [10], 264. Further, Aristotle usually distinguishes proximate from non-proximate matter not by characterizing one as a synchronic piece or a quantity and the other as a diachronic slice, but rather by virtue of the complexity of proximate matter. He is willing to speak of the bronze of a bronze statue as its proximate matter, but not, e.g., the earth and water from which the bronze is made; similarly, he will say that bricks are the proximate matter for a house, but not the clay from which the bricks are fired. See Heinaman [10], 254. So, though this way of regarding proximate matter is ingenious and may have some

speak of proximate and non-proximate matter, and that it is not impossible to explicate his distinction as one between quantities or pieces on the one hand, and temporal continuants on the other (even though this is not the way I myself explicate Aristotle's conception of proximate and non-proximate matter). In any case, even if Aristotle does nothing to distinguish between thick and thin compounds in *Metaphysics* VII.17, the first of two arguments in that chapter is sound only if it is construed as against the claim that forms and non-proximate matter are identical; hence it will be necessary to mark the distinction even if Aristotle does not. The second argument is more difficult to assess.

The first argument, directed against the identification of form and non-proximate matter, occurs at 1041b14–16. This argument relies on an appeal to Leibniz's Law. Certain syllables, like 'ba', cannot be regarded as identical with the elements or letters of which they are composed, since the latter can persist when the former go out of existence: 'when they (the entities) have been broken up, something no longer exists, for example the flesh and the syllable, but the elements exist, both the fire and the air' (1041b14–16). Aristotle simply makes the point that if *a* exists at t_2, while *b* does not, then *a* and *b* are not identical. Since this claim does not hold true of constitution (*a* can constitute *b* at t_1, and continue to exist at t_2 after *b* has gone out of existence), Aristotle must have identity and not constitution in mind in this argument. Hence, Aristotle's view is that an entity (e.g. a syllable or a bit of flesh) is not identical with any non-proximate matter.

Aristotle then goes on to use a more elaborate argument to show that form is not identical with any element or collection of elements. It is difficult to determine, however, whether Aristotle intends this argument to show something about the identification of form and proximate matter, or only of form and non-proximate matter. The argument is a *reductio* which begins with the supposition (untenable in Aristotle's view) that we need to add something elemental to our account of '*a*' and '*b*' in order to come up with a full account of '*ab*'.

(1) Suppose we add something elemental to our account of '*ba*' (1041b6–9).
(2) Then we must add something which is either (*a*) an element

philosophical utility, it has no textual basis and consequently cannot be used in service of those who suppose that according to Aristotle particular forms are *identical* with material continuants.

(*stoicheion*), or (*b*) something from elements (*ek stoicheiōn*) (1041b19).

(3) If (2*a*), we will have an infinite regress (presumably since each new element would fail to account for the structure of '*ba*' and so would require a further element) (1041b20–2).

(4) If (2*b*), the same argument will apply (1041b22–5).

(5) Therefore, not (1): no complete account of '*ba*' can be given in terms of some elemental addition to the elements '*b*' and '*a*'.

Hence, Aristotle infers, what is lacking in the elemental description of '*ba*' and flesh is not some further element at all, but rather an appeal to the formal cause of '*ba*'.

The first question to ask about this argument concerns the force of the 'is' in the second premiss. If it is the 'is' of identity, it remains possible that forms are constituted by matter. If it is the 'is' of constitution, then forms are immaterial, since if material elements do not even constitute forms, then forms are not material (in the sense of having essentially material parts). How can one adjudicate between these possibilities?

On the assumption that 'is' is univocal in (2*a*) and (2*b*), it appears to establish only that forms are not identical with elements. The matter is complicated, however, since there are two possible readings of (2*b*) and so of (4). The first possible reading ($2b_1$) is that what is added to elements is not identical with any mere aggregate of elements. The second ($2b_2$) is that what is added to elements is not identical with any compound of elements and form. If ($2b_1$) is true, then the infinite regress alluded to in (4) would be (4_1): if ($2b_1$) the same argument will apply by repeated application of (3) to each new element added. If ($2b_2$) is true, (4) will be read as ($4b_2$): if ($2b_2$), the same argument will apply since the form/matter compound added to the elements will require some principle of unity, which will be (*ex hypothesi*) a compound of form and matter, and so on. In either case, however, it looks as if the claim is simply that nothing which is identical with an element will suffice as the something different required for an account of '*ba*'.

But it is difficult to determine whether Aristotle thinks he has an argument for the non-identification of form and proximate matter, or only non-proximate matter. He may well intend the strong conclusion that form is not identical with even proximate matter. His point would seem to be that it is necessary to add something, to, for example, an organic body (and something different, or *heteron ti* as Aristotle says),

in order to account for its having a certain organization or its being able to perform certain functions. But you cannot add matter, since it is not matter which is lacking, but the structure of the matter. If one says that proximate matter is *already* structured, and that is why it is proximate, that will be in virtue of its having a certain form. But it is not necessary to pursue this argument here. For even if this argument does not undermine the identification of form and proximate matter, Aristotle has other commitments which are incompatible with this identification.

Metaphysics VII.17 shows at least that no substance is identical with the elements of which it is composed (by the first argument above), and that what it is necessary to add to a substance's elements in order to arrive at an account of its identity cannot be identical with any element or collection of elements (by the second argument above). But does the chapter show anything further, for example about constitution? Aristotle argues that we need to appeal to the formal cause of a substance in order to give a complete account of that substance and that that formal cause is neither an element nor from the elements. Sorabji takes this to mean that forms are not *components* of that of which they are the forms.[10] It is true that the word '*stocheion*' can mean component, but it also means element, point, letter, and other things. In VII.17, however, Aristotle is quite explicit in showing which meaning he intends. The *stoicheia* are what belong to a compound as matter (*hōs hulēn*); this is contrasted with the substance and formal cause. It would seem, then, that the form is not present as matter. For (1) the form is neither an element nor an aggregate of elements, and (2) the elements are present in compounds as their matter.

Does this show that the form is *not* matter? We might be tempted to infer the immateriality of forms directly from *Metaphysics* VII.17; but we need to be careful about what VII.17 does *not* prove. Aristotle argues that at any time, any given form F is not identical to any element or aggregate of elements. Supposing that all matter is either an element or from elements, can we infer from Aristotle's argument that since form is not identical to anything material it is immaterial?

Some philosophers have thought this sort of argument sufficient for establishing dualism. Plantinga, for example, argues as follows.[11] It is possible that I exist at some time when my body does not (since I can exchange bodies bit by bit or all at once, etc.). If so, Plantinga argues:

[10] Sorabji [38], 48. [11] Plantinga [27], 65–9.

[C]learly it is possible that I should acquire a new body and continue to exist when B [my original body] is destroyed. Accordingly there is a time *t* at which it is possible that I exist and B does not. That is to say, there is a possible world *W* such that in *W* I exist at *t* and B does not exist at *t*. Hence I have the property *exists at t in W*; B lacks that property. By the Indiscernibility of Identicals, therefore, it follows that I am not identical with B. But then surely there is no object at all with which I am identical.

Plantinga is not entitled to this last inference. It is true that at any given time I am not identical to my body. But does it follow that therefore I am nothing material? No. I am not identical with my 'synchronic bit of matter'—roughly any Lockean mass or a quantity when all the constituents of that quantity are spatially contiguous;[12] but it does not follow that I am therefore not identical with some diachronic bit—that is, the composite of the successive bits of matter which compose me at any given time.[13] Even granting that I am not identical with my present body (using Aristotle's and Plantinga'a appeal to Leibniz's Law), it would not follow that there is no diachronic material entity with which I am identical. I could simply be identical to an entity constituted by matter, and this would be sufficient for materialism. Therefore, Plantinga's argument fails as an argument for dualism.

Unlike Plantinga, Aristotle does not infer from the considerations adduced in *Metaphysics* VII.17 that forms are immaterial. Rather, he infers that at any time, a given form is not identical to any synchronic bit of matter. This leaves open the possibility that forms are material in the sense of being essentially constituted by matter, and so identical with entities constituted by matter, namely themselves. A form can be *heteron ti* and material, by being constituted by matter. Therefore, we must consider these remaining alternatives: (1) the soul is an attribute or property (or set of properties) of the body; (2) the body constitutes the soul; and (3) the soul is an immaterial substance.

III

Jonathan Barnes argues for the first alternative, claiming that Aristotle cannot be any sort of dualist. He concludes that, 'Aristotle emerges as

[12] This will be non-proximate matter, as conceived by Whiting and explicated above.

[13] Cf. Wiggins [43], 36, where he distinguishes between a collection as characterized as 'such and such an aggregate (with fixed constituents)' (= synchronic bit) and as a 'composite with a succession of constituents through time' (= diachronic bit, or Whiting's proximate matter).

a fairly consistent upholder of an attribute theory of mind; and that, I suggest, is his greatest contribution to mental philosophy.'[14] As commonly understood, an attribute theorist holds that persons are material substances which none the less have immaterial properties which are causally or non-causally necessitated by physical states of the body. (The attribute theory, then, differs from epiphenomenalism in holding that a person's immaterial states are states of a material entity, and not of some immaterial entity.[15]) But can Aristotle hold any such view?

According to Barnes, Aristotle believes that at least some psychic states or faculties are immaterial, for example *orexis* (desire) and *nous*, but that neither the soul nor the mind is substantial. Thus, Barnes's argument would seem to be: (1) persons have some immaterial states; (2) these cannot be states of the soul, since it is not substantial; (3) therefore, they must be states of the body or compound, both of which are material. Therefore, Aristotle is an attribute theorist. I agree with Barnes's first premiss, but reject (2) on the ground that souls are forms and so are substantial.

But a rejection of (2) is not sufficient for a rejection of the attribute theory. Aristotle could believe that the soul is substantial, and that it is a non-derivative bearer of psychic states, but also believe that it is material in the sense that it is constituted by matter. Therefore, the possibility that Aristotle is any sort of attribute theorist collapses into the question of whether the soul is constituted by matter, in the sense of being essentially composed of matter (which would not preclude its having some immaterial properties). Therefore, we must explore our two remaining possibilities: forms (or souls) are constituted by matter or are immaterial substances.

IV

The next possibility, that the body constitutes the soul, is in many ways an attractive hypothesis. Though many commentators argue that constitution plays an important role in Aristotle's philosophy of mind,

[14] Barnes [3], 41.

[15] In addition, epiphenomenalism is normally characterized as committed to there being no causing of physical events by mental events, whereas there is no such commitment according to the attribute theory. See Armstrong [2], Ch 1.

not everyone has the same sort of relation in mind.[16] Hence, I will specify with some precision how I understand that relation. Let us say that the body constitutes the soul if and only if at any given point in its history, the soul has all and only the non-historical and non-modal properties which the body has.[17]

On this analysis, constitution preserves the causal powers of the soul, given that causal relations are extensional.[18] If it is true that S's body causes W's body to fall over at t_1, then it is also true that S's soul causes W's body (and W's soul) to fall over at t_1. This follows directly: if a body constitutes a soul, then that body and soul have all of their non-modal properties in common; hence, they have their causal properties in common.

I say the hypothesis that the body constitutes the soul is attractive for two reasons. First, it accounts for a great deal of what Aristotle says in the *Metaphysics* and *de Anima*. Second, it is akin to what is perhaps the most plausible materialist account of mind/body relations today, namely the version of functionalism which holds that the psychic states of human beings are contingently realized in matter, though they might not have been. But however attractive this view is, there is a problem for it as an account of Aristotle. Given the characterization of constitution above, a necessary condition of *a*'s constituting *b*, where *a* is a material entity, is that *b* likewise be a material entity. And this is not open to Aristotle, despite the arguments advanced by Sorabji and Wiggins.[19] For Aristotle provides a number of general characterizations of the soul, independent of its various capacities, which commit him to the soul's immateriality. If this is so, then Aristotle violates a necessary condition for constitution mentioned above: souls do not have all and

[16] See, e.g. Wiggins [42] and Ackrill [1]. Wiggins believes that bodies constitute souls (60), whereas Ackrill maintains that bodies constitute animals in virtue of having souls (65). None the less, Ackrill agrees with Wiggins about the importance of the 'is' of constitution in Aristotle's philosophy of mind: 'Whatever the obscurities or gaps in this Aristotelian account it is surely clear that he has discovered the "is" of constitution' (65).

[17] One might suggest that this analysis of constitution is self-defeating, for if *a* constitutes *b*, and the relation is asymmetrical, then *a* will have at least one property which *b* lacks, namely the property of constituting *b* (and so with *b*'s property of being constituted by *a*). This is no source of worry since we need not suppose that constitution is asymmetrical. I agree with Wiggins that while constitution is a broader relation than identity, identity is nevertheless one instantiation of that relation. See Wiggins [43], 197 n 1.19: 'And identity is even a special case of constitution. For any x, x composes x.' Cf. Shoemaker's [34] review of Wiggins [42], 105–6 for criticism of our view.

[18] See Heinaman [11] for a denial of the extensionality of causation.

[19] See Sorabji [38] and Wiggins [42].

only the non-modal properties bodies have, and so trivially are not constituted by material entities.

In saying that his general characterizations of soul commit Aristotle to the immateriality of souls, I have in mind the following four arguments. First, the soul cannot be moved in itself (*kath' hauto*; *DA* I.3). Every magnitude can be moved *kath' hauto* (*de Caelo* (*DC*) 268b15–16).[20] Therefore, the soul is not a magnitude. Second, the soul, as the form of the body, is not generable (*Meta.* VII.8, XII.3). This is so since whatever comes to be has form as well as matter (1032a20), but form is not a compound (*Meta.* VII.8). Therefore, the soul does not have matter. Third, the soul is not divisible (*DA* 411b27). But whatever is not divisible is not a magnitude (*Physics* (*Phys.*) 219a11, 237a11). Therefore, the soul is not a magnitude. Fourth, the soul is neither one of the elements nor from the elements (*de Generatione et Corruptione* (*GC*) 334a10–11). But all material entities either are elements or are from elements. Therefore, the soul is not a material entity. I will develop and discuss each of these in turn.

1. The first argument concerning the soul's immateriality turns upon certain of Aristotle's remarks about movement. Every magnitude can be moved in itself (*kath' hauto*). Yet, in *de Anima* I.3, he claims that souls cannot be moved *kath' hauto*. Hence, Aristotle is committed to the view that souls are not magnitudes. I will first consider Aristotle's remarks about the soul in *de Anima* I.3, and then proceed to substantiate the claim that every magnitude can be moved *kath' hauto*.

A number of arguments in *de Anima* I.3 attempt to show that the soul cannot be moved *kath' hauto*, though Aristotle is willing to allow that the soul moves the body (*DA* 406a30) and that the soul is moved through something else (*kath' heteron*).[21] Aristotle suggests that the soul cannot be moved in itself for the following sorts of reasons. First, given Aristotle's account of the natural movement of the elements, coupled with the fact that the soul's being moved *kath' hauto* entails its being moved by nature (*DA* 406a12 ff), the soul must have some location toward which it is moved. But there is no such location. Hence, the soul is not moved in itself.[22] (This argument seems to have the further

[20] Cf. *Phys.* 258b24–6 with Ross's commentary, 705.

[21] Movement *kath' hauto* and *kath' heteron* appear to be exhaustive modes of movement at *DA* 406a5. See Hicks [12], 286 n a4 for a clear discussion of these relations.

[22] It might be objected here that all Aristotle suggests after all is that a soul *could* be moved by having the right sort of matter. A lead filled ball moves downward, while a

consequence that the soul is neither an element nor from the elements, and indeed this is something Aristotle embraces, e.g. *GC* 334a10–11.) Second, if the soul is moved in itself, this will be in one of the four ways in which a thing can be moved in itself (alteration, growth, decay, and locomotion; *DA* 406a13). But if it is moved in any of these four ways, it is moved in space. Indeed, if the soul is moved, its motion must be locomotion (*DA* 406b1). But, Aristotle believes, if the soul could move with respect to place, it would be possible for it to leave the body and return to it, and for dead animals to come back to life. Since these things are impossible, the soul cannot be moved *kath' hauto*.

It is not entirely clear why the soul's having spatial location should have such untoward consequences. Perhaps Aristotle's view is that if a soul were able to be moved by its very nature, it could actually be separated from the body whose soul it is by some physical force (thereby rendering the body lifeless), and then moved back into the body by another physical force (thereby raising the body from the dead). But the essential point for the present purpose is that the soul, according to these arguments, cannot be moved in itself. Hence, if every magnitude can be moved *kath' hauto*, the soul cannot be a magnitude.[23]

The second premiss of this argument is that every magnitude is movable *kath' hauto*. Aristotle sees a connection between movement *kath' hauto* and being a magnitude. But what is this connection?

First of all, Aristotle does not believe that if *x* is a magnitude and is moved, then *x* is moved *kath' hauto*. A sailor can be moved *kath' hauto*, by being pushed, but also *kata sumbebēkos* (coincidentally) by being in something which is moved *kath' hauto*.[24] But, Aristotle points out, there

helium filled ball moves upward; hence a ball in itself has no natural direction, and so does not move in itself. This sort of example is inconclusive. If the ball is a physical object like a balloon, then it is material and does have a natural direction; if it is a geometrical figure, then it will have no natural direction. But that will be just because it has only 'intelligible matter' and will be immaterial. The soul's having intelligible matter is not sufficient for its being a material object in our sense of that term.

[23] I do not commit myself to the tenability of Aristotle's inference that if the soul had spatial location it could be separated from the body and then rejoined with it. I have only a more modest exegetical point in mind, namely that the soul is not moved *kath' hauto*. It could be objected that since Aristotle's inference obviously requires some support, it may be that *DA* I.3 is an aporetic chapter, and that Aristotle rejects this sort of inference later, perhaps in *DA* II or III. But, (*a*) I see absolutely no evidence of his retracting the claim that the soul is not moved *kath' hauto* later in the *DA*, and (*b*) there is no reason to suppose that Aristotle is not criticizing his predecessors from a very definite perspective in *DA* I (as he does, for example, in *Meta.* I).

[24] See *DA* 406a6.

are two classes of things which can be moved *kata sumbebēkos*: those which can also be moved *kath' hauto* (e.g. a sailor) and those which can not.[25] What fits into this second class?

It is not easy to find an uncontroversial example of something belonging to this second class in Aristotle.[26] But he supplies a principle in accordance with which we can find an answer. He believes that *x* can be moved *kath' hauto* if and only if *x* is a *megethos* (magnitude).

We have seen already that Aristotle believes half of this biconditional in his example of the sailor. If *x* is movable *kath' hauto*, then *x* is a *megethos*. And this is amply supported by Aristotle's analysis of place and movement in the *Physics* and elsewhere. In *DA* I.3, Aristotle draws the following inferences: if *x* is movable *kath' hauto*, then *x* is movable by nature; if *x* is movable by nature, *x* is in place (*topos*) *kath' hauto*; if *x* is in place *kath' hauto*, *x* is movable by force. In addition, we know from *Physics* IV.4 that whatever is in place is a body (211a4–5). Hence, it follows that whatever is movable *kath' hauto* is a *megethos*.

The important question for the present is whether Aristotle holds the other half of our biconditional, that is if *x* is a *megethos*, *x* is movable *kath' hauto*.[27] Aristotle's clearest statement of this principle occurs in *de Caelo* I.2 in a discussion of the natures of various sorts of bodies: 'We say that every natural body and magnitude is movable *kath' hauto* with respect to place; for we say that nature is the source of movement in them (*panta gar ta phusica sōmata kai megethē kath' hauta kinēta legomen einai kata topon; tēn gar phusin kinēseōs archēn einai phamen en autois*; 268b14–16).[28] It is no objection that Aristotle says here that all *natural* magnitudes can be moved *kath' hauto*, since this does not restrict the class of magnitudes in any relevant way. Aristotle generally views *megethos* as coextensive with *sōma* (body), but in some cases allows that the former is broader than the latter.[29] He means here to

[25] See *Phys.* 211a17.

[26] At *Phys.* 211a21–2, Aristotle says, 'Some things are not able to be moved *kath' hauto*, but are always moved *kata sumbebēkos*, e.g. whiteness and science (*epistēmē*)'. These examples are not uncontroversial because it is unclear whether Aristotle has in mind some particular magnitude, e.g. some white thing, some non-substance particular, e.g. this token of white, or rather some abstract entity or some universal like 'whiteness' or 'knowledge'. His language suggests the latter, but does not preclude the former.

[27] Though Aristotle does hold this strong principle, his holding an even weaker principle should trouble a materialist interpreter. If Aristotle held only that if *x* is a *megethos kath' hauto*, *x* is movable *kath' hauto*, then a materialist interpreter would need to explain why the soul is not a *megethos kath' hauto*.

[28] Reading *en autois* with Longo [22] over the OCT's *autois* on the strength of *Phys.* 254b16, 301b7, and *Meta.* 1070a7.

[29] For example, at *Phys.* 268a7 he says, 'A magnitude if divisible in one way is a line, if

restrict it to its normal sense in which it is coextensive with 'body'. But if so, Aristotle's point is that every *megethos*, that is every body is movable *kath' hauto*.

That Aristotle holds this position should not be surprising. At *Physics* 211a5, Aristotle claims that each body is moved by nature and remains in its natural position if unobstructed, by which he means that, for example, fire is moved naturally upward, earth downward, etc. This seems to imply that every body is moved by nature, or by its own nature. To say that something is moved by its nature is to say, in part, that it need not depend upon some other entity for its movement. Or more precisely, it does not depend upon being in (or otherwise suitably related to) something which is moving in order to move. And this is what it means for something to be able to be moved *kath' hauto* as opposed to *kata sumbebēkos*.[30]

Hence, Aristotle believes that *x* is movable *kath' hauto* if and only if *x* is a magnitude. Since the soul is not movable *kath' hauto*, it is not a magnitude.

This argument agrees with a related one which depends on Aristotle's view of the soul's spatial location. Aristotle points out that the soul is in place only coincidentally (*Phys.* 212a11). But every body, with the peculiar exception of the outer ring of heaven, is in place, and apparently in place *kath' hauto* (*Phys.* 212a31 ff).[31] Hence, soul cannot be a body.

Before moving on to the second argument for the immateriality of the soul, it is worth noting that Aristotle's worries about the nature of the motion of the soul naturally spill over into his analysis of perception. In *de Anima* I.3, Aristotle claims that if the soul is moved at all, it is moved by the objects of sense perception (*DA* 406b10–11). Later he objects to a way of speaking according to which souls perceive or act, rather than the man by means of or in his soul (*DA* 408b12–16). Aristotle seems to think that it is a sort of category mistake to say that souls perceive at all. One natural explanation of this concern is that he believes that souls *per se* are not the sorts of things that are able to

two ways a surface, and if three a body'. Cf. the *aporia* at *Phys.* 209a15 ff where a similar concession is made.

[30] In a related passage Aristotle claims that motion 'follows on' or belongs to (*akolouthei*) magnitude, *Phys.* 219a11.

[31] Though Aristotle does not specify that it is in space *kath' hauto*. Cf. *de Sensu* 440a25 where Aristotle claims that every magnitude is visible, coupled with his claim that there is some place of each perceptible thing, *Phys.* 205a10. Hence, every magnitude is in place.

perceive. This would no doubt follow from his view that perception is a type of movement, or perhaps 'sort' of a movement', *alloiōsis tis* (*DA* 408b10, 416b34, 417a17),[32] taken together with his claim that the soul cannot be moved (*DA* 406a2–3), except coincidentally (*DA* 403a31–2, cf. 406b10). Either perceptive souls cannot perceive or they can perceive only *kata sumbebēkos*, since the latter is the only type of motion they have. In either case, it looks as if Aristotle's contention that perception is a type of movement does not rest well with his claim that the soul is not moved *kath' hauto*, unless it is not the soul *itself* which is moved in perception, but something to which the soul is related, namely the body.

2. The second argument for the immateriality of the soul depends upon Aristotle's claim that the soul, as form, is not generable (*Meta.* VII.8 and XII.3), since only compounds are generable (1032a20). It would appear, then, that the soul is not a compound, and so is without matter.

In *Metaphysics* VII.8, Aristotle maintains that a brazen sphere comes to be, but not the bronze of which it is made or the form (*Meta.* 1033b5–6). The reason he gives is that 'it is always necessary for the matter and form to pre-exist'. This contention is explicated in *Metaphysics* XII.3. There Aristotle claims that if the bronze and the sphere were generated at the same time as the brazen sphere, an infinite regress would result. The regress results from the fact that if generated, form would necessarily be generated from some substrate (generation *ex nihilo* being ruled out). But if it were from a substrate, form itself would have to be a compound of matter and form (the substrate being its matter). Presumably if the form of that compound were also generated, it would likewise be a compound and so on. Thus, the form cannot be generated. The reason it cannot be generated is that it would require matter if it were generated, but any such requirement would result in an infinite regress. Hence, Aristotle here regards forms of compounds as immaterial. But since the soul is the form of a compound, it must be immaterial.

There are two distinct objections to this argument. The first is that

[32] Hamlyn [8] thinks that Aristotle's calling *aisthēsis* an *alloiōsis tis* (as he would have it 'a type of motion') along with his 'explicit denial' of this in Bk 3 (431a5) is evidence for his views: (*a*) that *DA* III is later than *DA* II, and (*b*) Aristotle's concepts of *aisthēsis* is transitional. I hold, by contrast, that the passages cited by Hamlyn are compatible with one another since *alloiōsis tis* need only mean 'alteration—sort of', i.e. not quite alteration, but akin to it. Cf. *DA* II.5.417b2–16.

Metaphysics VII.8 does not contain an argument that forms are ingenerable; the second is that even if some forms are ingenerable, it does not follow that all forms, and especially particular forms, are ingenerable. I will respond to these objections in turn.

Heinaman gives a clear argument for the objection that *Metaphysics* VII.8 does not establish that forms are ingenerable.[33] He seeks to establish first the claim that not all forms are sempiternal (or eternal as he says) by the arguments of *Metaphysics* VII.8, and second that they are not even ingenerable. According to Heinaman, the problem with the second inference is that Aristotle takes himself to have established in VII.8 not only that the form is ingenerable, but also that the proximate matter is ingenerable. But he surely believes that the proximate matter, for example the bronze, *is* generated—but is generated at some time before the compound.[34] So, Heinaman suggests, we should understand Aristotle as holding only that the proximate matter cannot be generated *when* the compound is generated. Hence, he infers, it is possible that the form, like the proximate matter, could be generated at some time before the compound is generated.[35]

I do not find this last inference of Heinaman's persuasive. If we understand proximate matter in the way he suggests (and as I prefer to understand it, i.e. as the bronze of a bronze statue, rather than as a diachronic continuant), then we have a clear account of how the proximate matter of a bronze statue is generated before the bronze statue. The bronze is forged of some more basic elements and so comes into existence. But what analogous story can be given for the form? It is incumbent upon Heinaman to give an account of how a

[33] Heinaman [10] § II–III, esp. 256–7. Heinaman does think (correctly in my view) that forms are not generable, because they are not material. See § IV of his paper. His reason for believing that forms are immaterial depends upon his analysis of *Meta.* VII.10 and 11; I am sympathetic to his analysis; I cannot, however, avail myself of either of our interpretations of those chapters in the present context, precisely because I am trying to show that since Aristotle regards forms as ingenerable, he must regard them as immaterial.

[34] Note that Heinaman explicates the notion of proximate matter, not like Whiting as a diachronic continuant, but as a sort of matter complex enough to serve as the matter of a given compound, e.g. the bronze in a bronze statue. If we follow Whiting in taking proximate matter as a diachronic continuant, then Heinaman's premiss that Aristotle believes that proximate matter *is* generated (rather than coming into existence without being generated) will not be at all obvious. But I will ignore this complication for the moment since: (*a*) I accept Heinaman's account of proximate matter, and (*b*) I believe there is another problem with Heinaman's interpretation.

[35] Heinaman [10], 256–7.

particular form can be generated before the compound of which it is the form is generated, but I cannot see any hope for such an account. Of course, Heinaman does not think there is such an account, because he thinks that forms are in the end ungenerated (since they are immaterial), and so does not try to provide one. But if he wants to show that VII.8 leaves open the possibility that particular forms are generated, but generated at some time before the compounds of which they are forms are generated, some such account will be needed. But since there is a salient disanology between form and proximate matter (as conceived by Heinaman and me) in so far as there is a clear account only of how the latter could be generated before the compound of which they are form and matter, there is no reason to suppose that Aristotle regards it as a bona fide possibility that particular forms are generable at any time. Therefore, I see no reason to suppose that *Metaphysics* VII.8 leaves open the possibility that particular forms are generable; on the contrary, this is just the thesis Aristotle rejects.

The second objection to my treatment of VII.8 is that it is unclear whether Aristotle regards *all* forms as ingenerable, and so regards all forms as immaterial. Suppose it is granted that some forms are immaterial, including the forms of some compounds. Does it follow that all forms are immaterial? Aristotle's own example of an ingenerable form is the form of the species man (see e.g. *Meta.* 1070a8). Hence, perhaps Aristotle has only universal, but not particular, forms in mind here. And since on the present analysis souls are particular forms, something more needs to be said in order to show that souls, that is particular forms, are not generable and so not material.

The first response to this objection would be to deny that it is a legitimate requirement. If it is agreed that Aristotle regards forms as immaterial, then it is incumbent on the detractor to show why *particular* forms should be exceptional by being material. That is, the burden lies with the detractor; until some reason for regarding particular forms as material is advanced, there seems to be no special reason to show why they, like species forms, are immaterial.

It is sometimes suggested that if particular forms were immaterial, there would be a problem about individuation: immaterial particulars could not be individuated from one another since *ex hypothesi* they have no matter and matter is a necessary condition of individuation. But this argument relies on a premiss which is rightly rejected by Aristotle, namely that a necessary condition of x's being individuated from y

where x and y are particulars is that they be material. For souls are qualitatively distinct from one another and so can be individuated by simple appeal to Leibniz's Law; and even if they were qualitatively identical, they could be individuated by their relational predicates, in so far as they would be related to bits of matter by being the forms of those bits.

Hence, I see no special reason why particular forms should be excepted from the class of immaterial forms. If everything which is ingenerable is without matter, and Aristotle regards particular forms as ingenerable, then particular forms do not have matter. *Metaphysics* VII.8 provides evidence that particular forms, like other forms, are not generable, and so are immaterial. Hence, souls, which are particular forms, are immaterial.[36]

3. The third argument for the immateriality of the soul derives from considerations of divisibility. According to Aristotle, every magnitude is divisible (*GC* I.2). The soul, however is not divisible. Therefore, the soul is not a magnitude. This argument alone, if genuinely Aristotelian, would show that on pain of internal inconsistency, Aristotle must accept the claim that the soul is immaterial, and so be some sort of dualist or other. The first premiss of this argument, however, requires explication, and the second is not generally accepted and so requires defence.

In *de Generatione et Corruptione* I.2, Aristotle is eager to argue against atomism in order to preserve substantial generation as opposed to mere alteration (*alloiōsis*) or aggregation (*sunkrisis*). He sets himself an *aporia* (315b9) in the form of the following dilemma. One must either: (1) identify generation with aggregation, which has many absurd consequences (including, apparently in Aristotle's view, indivisible atoms), or (2) distinguish generation from aggregation, with the consequence that either (*a*) there is generally no such thing as generation, or (*b*) generation is alteration (315b20–4). His problem seems to be the following. If we agree with Democritus and Leucippus

[36] One need not assume, however, that if particular forms are not generable they pre-exist in any strong sense, so that my soul pre-dates my existence. Aristotle's point may simply be that forms are not generable in the sense of never being in the course of being destroyed or created. See *Meta.* 1039b24 (on which Ross [32], vol ii, 215); cf. *Meta.* 1033b5–6, 1043b14. Indeed, if particular forms *supervene* on matter (in the sense I will explicate below), then we might well have reason to suppose that they are not generable in the sense of ever being in the course of being created; once the supervenience base on which they supervene exists, they exist. There is no separate event of creating supervenient forms over and above creating compounds. See Teller [39].

that generation is aggregation (namely of atoms), then there are indivisible magnitudes. Yet it appears that we cannot refrain from identifying generation with aggregation; if we do not, we must either deny the existence of generation altogether or view it as a form of alteration (which, in Aristotle's way of thinking of the matter, does not constitute substantial generation).

Why the first horn of this dilemma should appear even prima facie true is not clear.[37] The only way of making it at all plausible is to make it analytic, and hence question-begging on the part of the atomists represented. Yet this is the dilemma Aristotle sets for himself. His strategy for resolving it is to consider whether there can be indivisible primary magnitudes (*GC* 315b27). The chapter is difficult,[38] but Aristotle's response to the alleged dilemma is to deny both horns by arguing first that there is aggregation, but not from indivisible magnitudes (317a13–17), and then that though generation *simpliciter* is not simply aggregation, it is not merely alteration (317a17 ff).

While no argument is given for the claim that the identification of generation with aggregation entails a commitment to atomism, Aristotle spends the bulk of the chapter attempting to establish that there cannot be any indivisible magnitudes. But it is not clear that Aristotle has any compelling reason for maintaining that every magnitude is infinitely divisible. None the less, for the present argument, he needs only the more moderate claim that every magnitude is divisible. And Aristotle surely is committed to this claim throughout the chapter. Hence, the first premiss of the present argument is established, since Aristotle does claim that every magnitude is infinitely divisible. Further, there is a weaker, less objectionable premiss, namely that every magnitude is divisible, entailed by this claim, which is all that is required to show that the soul is immaterial, if it can be demonstrated that the soul is not divisible.

The second premiss, that the soul is indivisible, can be supported in two ways. First, Aristotle says that the soul is indivisible, but in a passage whose reading is disputed (*DA* 411b27). Second, Aristotle claims that something is one if it is indivisible in quantity or in form (*Meta.* 999a1–6; cf. *Meta.* V.6, *Meta.* X.1). Hence, Aristotle regards at

[37] As is pointed out by Williams [45], 65, in a clear and thorough discussion of infinite divisibility, 63–80.

[38] For example, how are the atomists represented with respect to generation—as reductivists or eliminitavists? The argument seems to require the latter, but (*a*) it is not clear that the dilemma is genuine in this case, and (*b*) the atomists themselves seem divided, or at least indeterminate, on the question.

least some forms as indivisible in some respects; it must be investigated whether the soul is one such form and whether it is indivisible in a way which would count as sufficient for its being immaterial. When Aristotle says that every magnitude is divisible, presumably he means that every magnitude is *physically* divisible. So, if there is an argument from the soul's indivisibility to its immateriality, it must be that the soul is physically indivisible. This could be established in either of two ways: (*a*) by showing that Aristotle says that the soul is physically indivisible, or (*b*) by showing that something Aristotle says implies that the soul is physically indivisible. Aristotle nowhere flatly states that the soul is physically indivisible. He does, however, characterize the soul's indivisibility in such a way as to imply that it is physically indivisible.

In the last chapter of *de Anima* I, Aristotle considers the unity of the soul. Aristotle considers the fact that when certain plants and insects (e.g. earthworms) are cut into two, each half continues to live. Even so, since each half lacks the requisite organs for survival, both halves eventually die (411b23–4). In Ross's text of the *de Anima* (Oxford, 1956), Aristotle comments: 'But none the less, all the parts of the soul are present in each of the [two] parts [namely of the worm], and are the same in kind with one another and with the whole soul—with one another since they are not separable, and with the whole soul since it is not divisible' (411b24–7). If this is the correct reading of the text, then the first premiss of the present argument for the immateriality of the soul is simply *asserted* by Aristotle. If this is so, the soul is not a magnitude since it is not divisible while every magnitude is divisible.

Unfortunately matters are not so simple. The critical word in the passage is, of course, the 'not' (*ou*), in 'not divisible' (*ou diaireton*). Ross includes it; Hicks, Rodier, and Trendelenburg omit it.[39] The argument of this chapter, which seems to be the only basis for deciding who has the superior text,[40] is as follows:

[39] They all accept the reading of manuscript W (the source of the *ou*) for some parts of the sentence, while rejecting W's *ou*, even though W is generally held to be inferior to E. (See Hicks [12], lxxiii–lxxxiii for an account of the relative merits of the extant manuscripts of the *DA*.) Hicks gives no account for his omission of the *ou* in his typically copious note (302–4) on this section of the *DA*. Likewise, Rodier [29] gives no account in his discussion of this passage, vol ii, 161. Trendelenburg [40], 294, only recapitulates the sense of the passage without the *ou*: *'facultates quidem inter se segregari non possunt, sed universa anima ita divisa est, ut pars nomen et rationem universa tueatur'*. Significantly, the *ou* is preserved in the thirteenth-century Latin translation prepared by William of Moerbeke. See Minio-Paluello [23] for a detailed study of the importance and superiority of Moerbeke's text.

[40] It would seem that the *ou* could reasonably have been supplied (by dittography with *ou chōrista*) or deleted (by haplography with *ousē*). Hence, there is no clear help for either

(1) Suppose that the soul is naturally partite (*meristē pephuken*).
(2) If the soul is naturally partite, it will require something to hold it together.
(3) What holds it together must be either the body or the soul.
(4) The body does not hold the soul together.
(5) Therefore, the soul holds the soul together.
(6) But the soul which holds the soul together is either one or partite (i.e. naturally partite?).
(7) If it is one, then we should say straightaway that the soul is one thing (i.e. that the soul 'holds itself together' by being one and not naturally partite; 411b11–12).
(8) If it is partite, we will need to ask how that soul is held together, and so on into infinity (411b12–14).
(9) The infinite regress in the consequent of (8) is intolerable.
(10) Therefore, (7): the soul is one, is not naturally partite, and so is indivisible by nature.

This reconstruction is fairly conjectural, but it does, I think, capture the progress of the thought of the first part of 411b.

I will return to this argument after reconstructing the fuller, more important argument given in the end of 411b:

(1) Members of the same species have the same soul in species, but not in number (411b20–1).
(2) (1) is based on the following empirical observation: certain plants and insects continue to live (and move and perceive in the case of insects), when they have been divided.
(3) But (2) entails that each part of the soul has all of the soul's faculties in it.
(4) But (3) entails that the souls of the divided insects are (*a*) the same in form with one another, and (*b*) the same in form with the whole soul (namely the initial soul of the uncut insect).[41]

reading from this quarter. The *lectio difficilior* may perhaps support the inclusion of the *ou*, since no clear parallel for this passage exists. But the matter is not entirely clear, since the passage appears to make little or no sense without the *ou*. Hence, I submit that the only way to determine the appropriateness of the inclusion or exclusion of the *ou* is on philosophical grounds. Here, Ross [31], 120, sheds some light on the subject.

[41] I read *homoeideis* with Hicks, even though I reject Hick's omission of the *ou*, and even though I recognize that *moria* is the subject of *ou chōrista*. This presents no problem for my interpretation since I regard Aristotle as making a number of related points in this compressed passage. The best manuscript (E) has *homoeideis*, but lacks *ou*. See Hicks [12], 302–4 for a discussion of the (unfortunately) troubled state of the manuscripts for this passage.

(5) (4*a*) is true since the faculties of the soul are not separable from one another (411b26).

(6) (4*b*) is true since the whole soul is not divisible.

(5) and (6) are clearly the most important premisses for my present concern.

Before considering (5) and (6), however, it is necessary to get clear about the sort of case Aristotle has in mind here. It appears that in this passage Aristotle is envisaging something analogous to cases of fission discussed by certain contemporary philosophers of mind.[42] The main difference between the cases discussed by contemporary philosophers like Parfit and Aristotle's case is that Aristotle considers certain lower animals where fission is a physical as well as conceptual possibility. There is one earthworm, *a*, which is severed into *b* and *c*. At the moment when *a* is severed, *a* goes out of existence and *b* and *c* come into existence, since neither *b* nor *c* can be plausibly identified with *a*.[43] On this analysis, Aristotle mentions three distinct members of the species earthworm, rather than one member *a* which is divided into two halves of a member. I read Aristotle's example in this way since he regards the parts of the severed earthworm as in the same species (*homoeideis*) both with each other and with the initial worm (411b24–6). But if this is so, he must have three distinct members of one species in mind. On this analysis of the passage, Aristotle is simply assessing the ramifications of a case of physically possible fission. Since I see no other plausible overview of this section, I will proceed on this assumption.

Now I can return to premisses (5) and (6). Why should Aristotle think that (5) is a reason for accepting (4*a*)? First of all, on my reconstruction of the argument (4*a*) is purported to follow directly from (3); (5) is just an amplification of why this is so. (5) says that the faculties of soul, for example nutrition and perception, cannot be separated from one another. Even though one animal can be cut into

[42] e.g. Parfit [26]. Parfit thinks that since fission (i.e. the dividing of one person, *a*, into two, *b* and *c*, in an amoeba-like fashion) is conceptually possible, and since, due to the transitivity of identity, both *b* and *c* cannot be identical with *a*, coupled with the fact there are no admissible grounds for choosing *b* over *c* or vice versa, neither *b* nor *c* is identical with *a*. None the less, *a* has reason to be concerned with the affairs of *b* and *c*. Hence, Parfit concludes, survival is more important than identity in personal identity.

[43] I do not here wish to assert that Aristotle agrees with Parfit about the proper way to analyse cases of fission (especially with respect to survival and identity of *persons*). As I interpret Aristotle, he agrees with Wiggins that one should say that the initial earthworm goes out of existence, [43], 83 n 7.

two, one faculty cannot be cut away from another, for example nutrition cannot be cut away from perception.[44] Hence, on Aristotle's account, the proper analysis of the case of the severed earthworm is that all of the faculties of a soul proper to an earthworm exist in each of the severed parts. If the faculties could be separated from one another, there could be two halves of an earthworm, one of which only perceives, the other of which only eats. Since Aristotle regards this as impossible, he likewise believes that the faculties cannot be separated from one another. Hence, when *b* and *c* come into existence, *b* has all and only the faculties *c* has, and vice versa. Consequently, they are the same in form with one another.

More importantly, why should Aristotle regard (6) as support for ~(4*b*)? On the proposed reading, Aristotle seems to infer that *b* and *c* are in the same species as *a* on the grounds that the soul is *not* divisible. What is the connection? Well, if the soul is not divisible, then when a certain animal is cut into two, there are two new members of the original species. Each new member has a complete soul. With the inclusion of the 'not' (*ou*), we can make good sense of Aristotle's argument along the lines suggested above: Aristotle is here considering a case of fission.

If my interpretation is correct, Aristotle must be committed to the following counterfactual: if the soul were divisible, *b* and *c* would not be in the same species as *a*. And this is just what he should believe. Consider the omission of the 'not' (*ou*). The argument would then become: *b* and *c* are the same in species with *a* because *a*'s soul is divisible. But if one soul were divided into two, each of the halves would be just that: half souls. Hence, the resulting compounds would not be the same in form with the original. The claim that the soul is divisible seems to militate against rather than to support Aristotle's desired conclusion, namely that *b* and *c* are the same species with *a*. Therefore, there is a good philosophical reason for the inclusion of the 'not' and no good philosophical reason for its exclusion. Hence, since there are no other grounds on which to judge the issue, it should be included.[45] If this is so, 411b25 should read: 'the whole soul is not divisible (*tēs d' holēs psuchēs hōs ou diairetēs ousēs*)'.

[44] Note that Aristotle does not commit himself to the claim that there cannot be plants (which have only the nutritive capacity) which lack perception. Rather, in the case of a soul with the faculties of both nutrition and perception, the one cannot be separated from the other.

[45] The only other possible grounds which might influence our decision come from Aristotle's discussion of this same sort of case in other contexts. Aristotle mentions this

But if the soul is indivisible, need we conclude that it is *physically* indivisible? It is difficult for me to argue that it is physically indivisible without invoking its immateriality, and so difficult for me to argue for my desired conclusion without begging the question. But, Aristotle says simply that the soul is indivisible, and does not qualify his remark in any way. It would appear, then, that he means his claim to be quite general: the soul is not divisible, and not divisible in any way. If it is not divisible in any way, then, trivially, it is not divisible physically. But we can ask at least this much. What sort of divisibility is required for Aristotle's argument at the end of *de Anima* I? Well, Aristotle wants to show that it is not possible for various faculties of animals to be separated from one another, so that if the severed halves of an animal live, they have all of the faculties of the original animal. But how could he guarantee this if the soul were physically divisible? It would seem that if the soul were physically divisible, one half of the severed earthworm could end up with the physical half which had only the appetetive soul and the other could end up with the locomotive soul, etc. But this is precisely what Aristotle denies is possible in this passage. Hence, he denies at least that the soul is physically divisible, and indeed that it is divisible at all.

Given that every magnitude is physically divisible, then, the soul is not a magnitude, since it is evidently not physically divisible. Hence, Aristotle cannot be any sort of materialist. If this were the only argument in favour of Aristotelian dualism, it would provide rather slim evidence, particularly since it is difficult to establish conclusively that the soul is physically indivisible without begging any questions. But this passage is only one of a number which commit Aristotle to the claim that the soul is not a magnitude. And even taken by itself, this argument does commit Aristotle to a rejection of materialism. The detractor must show that 411b27 makes less philosophical sense with the *ou* than without it. I have shown why this does not appear likely.[46]

sort of case often (e.g. *de Longaevitate* 467a18 ff, *de Juventute* 468a30 ff, *de Partibus Animalium* 682b30 ff, and *de Incessu Animalium* 707a25 ff), but never offers any explanation for its possibility which either confirms or disconfirms the explanation given in the *DA*.

[46] It should be noted, however, that while a successful argument to the effect that the *ou* should be omitted from 411b27 would prevent the present argument for immaterialism from succeeding, it would not by itself show that Aristotle is a materialist. For the first premiss of the argument is that every magnitude is divisible—not that everything which is divisible is a magnitude.

Hence, this passage lends further support to the claim that Aristotle needs to regard the soul as immaterial if he is to be at all consistent.

4. The fourth argument for the soul's immateriality is quite simple. The soul is neither an element nor from elements. Everything which is a body is either an element or from elements. Therefore the soul is not a body. Therefore the soul is immaterial.

The first premiss derives from *de Generatione et Corruptione* II.6. Aristotle there considers Empedocles' views on the generation, constitution, and growth of various entities. Along the way he considers the special case of the soul and remarks: 'but it [would be] absurd if the soul [were] from the elements or [were] some one of them' (334a10–11). This bald statement, coupled with the claim that everything which is a body is either an element or from the elements, once again commits Aristotle to the immateriality of the soul.

Aristotle's claim that the soul is neither an element nor from the elements may seem startling. First of all, unlike *de Anima* 411b ff, there exists no textual variation for *de Generatione et Corruptione* 334a10–11. If this latter passage is to be criticized, it will have to be on the grounds that *atopon* need not be translated as 'absurd'. Rather, one might claim, it should be translated as 'unusual', or 'strange', or 'puzzling' (thereby leaving open the possibility that the soul is, after sufficient consideration, to be regarded as elemental). This suggestion will not do, however, since the ensuing argument shows why, on Aristotle's view, the soul cannot be elemental, not merely that it would be unusual if the soul were to turn out to be elemental. Hence, I see no reason to soften *atopon* to 'unusual' or some such innocuous translation.

In addition, Aristotle seems to commit himself to the view that the soul is not elemental in another way. In discussing his views on the soul's movement above, I noted that Aristotle argues that the soul has no natural movement, since it has no natural direction of its own (*DA* 406a12 ff). In this passage he suggests that if the soul were to move upward by its very nature, it would be fire, and if downward it would be earth, and so on for intermediate motion, the latter presumably belonging to other elements and mixtures of elements (*DA* 406a27–30; cf. *DC* 311a19, 304b17, 308b13). But Aristotle apparently regards this way of looking at the soul as absurd, since in this passage, as noted above, Aristotle is rejecting the view that the soul is moved *kath' hauto*. If the soul has no natural direction, it will not be elemental. This is what Aristotle seems to commit himself to at *de Anima* 406a12 ff, and

what he explicitly states in *de Generatione et Corruptione* 334a10–11. As far as I can see, these arguments work equally well for any characterization of the soul as material, whether it be identical with material entities or simply constituted by them. Thus, since Aristotle regards the soul as non-elemental, he regards it as incorporeal. Hence, he is committed to the view that the soul is immaterial.

Each of the arguments advanced in this section has purported to show that the soul is immaterial. If I am right about even one of these arguments, Aristotle will not be in a position consistently to maintain that the soul is constituted by matter. For as I have defined that relation, material constitution entails materialism for souls. In short, since Aristotle cannot consistently maintain that souls are material and immaterial, and since he is committed to affirming the latter, he must reject the former. Hence, Aristotle cannot, as Sorabji, Wiggins, and Ackrill have maintained, believe that souls are constituted by matter.

V

Consider the following general objection to the arguments I have advanced. Three of my arguments implicitly rely on an appeal to Leibniz' Law: since the soul cannot be moved *kath' hauto*, but every magnitude can be moved *kath' hauto*, the soul is not a magnitude; second, since the soul is indivisible, and every magnitude is divisible, the soul is not a magnitude; third, since the soul is not generable, and everything constituted of matter is generable, the soul is not constituted of matter. Are these sound arguments?

Without questioning Leibniz's Law, one can nevertheless object that my appeal to it in these cases is unwarranted. Suppose I argue: the butcher chops meat; the baker does not chop meat; Ms Jones is the butcher; therefore, Ms Jones is not the baker. It is obvious, of course, that Ms Jones can be the butcher as well as the baker: *qua* butcher she chops meat, *qua* baker she does not.

Why does this argument fail? There is a sense in which each of its premisses, including the second, is true. The baker, *qua* baker, does not chop meat; none the less, the baker, *qua* butcher, namely Ms Jones, does chop meat. The second premiss is false only it if is supposed to entail that the one who bakes does not chop meat, but true if it means that in so far as one who bakes, bakes, she does not chop meat.

The question is then whether it might not similarly be true that the soul, *qua* soul, is unmovable/indivisible/ingenerable, but nevertheless false that it is any of these things *qua* body. If this is possible, then the arguments of the previous section will be unconvincing; if it true, then they will be unsound.

Two questions arise. First, is it possible that the predicates in question justify my appeal to Leibniz's Law? Second, does anything Aristotle says entail or support the suggestion that the soul and body are one item under two descriptions (alternatively, does anything he says entail or support the suggestion that the soul and body are *not* one item under two descriptions)?

Certain sorts of predicates are immune from appeal to the *qua* locution (where the *qua* locution is understood not as a challenge to Leibniz's Law, but as a challenge to its applicability in a given case). Consider the following argument. The number x is divisible by two; no number divisible by two is an odd number; therefore, the number x is not an odd number. No appeal to the *qua* locution could make this argument unsound: there is no predicate F such that *qua* being divisible by two x is not odd, but *qua* F x is odd. The reason is clear. The number x's not being odd entails its being even: x is odd if and only if it is not even. This is surely not the case in our first example. It is not the case that x is a butcher if and only if x is not a baker.

Now, there are many prima facie arguments for the non-identity of body and soul in Aristotle: the body is matter, while the soul is form; the body is potentiality, while the soul is actuality; the body is a *hupokeimenon*, while the soul is not; the body (as matter) is not a *tode ti*, while the soul (as form) is. The problem with each of these arguments is just that one might want to say that the body, considered as *proximate* matter is identical with form, and is actual and a *tode ti*. We have already seen that Aristotle lends himself to this sort of interpretation.

But I have selected the arguments I have in part because they seem immune to any appeal to the *qua* locution. For example, how could something be both physically indivisible *qua* soul, but physically divisible *qua* body/magnitude? Aristotle's view is that every magnitude is physically divisible, but that the soul is not divisible at all. It would appear that x is divisible if and only if it is not indivisible. If this is correct, then no appeal to the *qua* locution could block my argument, just as no such appeal could show how x could be, *qua* divisible by two, even, but *qua* something else odd.

Similar defences could be given of my two remaining arguments

which depend upon the applicability of Leibniz's Law: (1) x is ingenerable if and only if x is not generable,[47] and (2) x is immovable *kath' hauto* if and only if x is not movable *kath' hauto*. The case would have been different if, for example, Aristotle had said that the soul considered in one way is movable *kath' hauto* but in another way not. What he says is that the soul is not movable *kath' hauto*, but that every magnitude is so movable. In these cases, then, my appeal to Leibniz's Law is justified, and so immune to the objection in question.

One final consideration regarding the question of whether Aristotle can believe that the soul is constituted by matter concerns his view of *nous*. Though I will not argue the point, it is significant that according to Aristotle *nous* is immaterial. That this is so is granted by nearly all commentators, and for a very good reason: Aristotle says that *nous* is immaterial. But if *nous* is immaterial, and a capacity of the soul, then the whole soul cannot be constituted by matter. If so, it is difficult to see how the soul could be *identical* with any matter, non-proximate or proximate. Surely, at least part of the soul is immaterial, and indeed, my arguments have shown that the whole soul is immaterial.

VI

Those who are inclined toward generous application of the *qua* locution in Aristotle are not without some justification. Aristotle is quick to use it himself, and in many important contexts; moreover, it helps to explain the obvious fact that Aristotle regards soul and body as one in some important and intimate way. But I have given reason to suppose that they are one in some way short of identity: if souls are immaterial, they cannot be identical with compounds or bodies. If this is so, it will be necessary to resist the temptation to interpret Aristotle as a non-reductive materialist in the philosophy of mind.

On the contrary, Aristotle must affirm some variety of dualism. It is clear, of course, that Aristotle is no sort of Cartesian. To begin with, he regards souls as ontologically dependent on bodies, something which Descartes denies.[48] When he denies separability, Aristotle denies

[47] Could we not say, for example, that in so far as x is a soul it is not generable, even though it is generable in some other way, just as we could say that in so far as x is a baker she does not chop meat even though she chops meat in some other way, e.g. *qua* butcher? I myself do not see how this is possible. If a soul is not generable, then how can something *identical* with the soul be generable under some other description?

[48] See n 4 above.

Cartesianism; but he does not thereby deny dualism. By insisting that the soul is an immaterial substance, Aristotle rejects the identification of soul and body together with the claim that the body constitutes the soul. But the coherence of Aristotle's position is called into question by his concurrent commitments to immateriality and inseparability. None the less there is a perfectly coherent account which has been overlooked by all commentators on Aristotle, as it was by Descartes and indeed many contemporary philosophers of mind, namely supervenient dualism.[49] Aristotle believes that the soul is immaterial, and an immaterial *substance* (as form); he also believes that the body is a substance (cf. n 2), which serves as a superervenience base for the soul. These various commitments can be true simultaneously if, and only if, Aristotle is a supervenient dualist, a position which we might characterize as follows.

Let us call Aristotle a supervenient dualist if and only if he believes that the soul is an immaterial substance which supervenes the body, which is also a substance. One substance supervenes on another if and only if the supervening substance's properties supervene on the properties of the supervenience base substance. One property supervenes on another if and only if it is causally or (non-causally) nomologically related to its base property in the following way:

> A group of properties Ψ strongly supervenes on a group of properties Φ iff: (1) necessarily for each x and for each property F in Ψ, if x has F, then there exists a G in Φ such that x has G, and (ii) necessarily if any y has G it has F.

Thus, if two classes Φ and X are qualitatively indistinguishable classes of properties, and if Ψ supervenes on Φ, then there will be some class Ω supervenient on X which is qualitatively indistinguishable from Ψ. Base properties (e.g. those in Φ) determine what sorts of things the supervenient properties (e.g. those in Ψ) are, but the relation is non-symmetrical. For example, if pain supervenes on the firing of a c-fibre, the intensity and duration of the pain will be determined by the activity and duration of the c-fibre. Moreover, given that base properties are sufficient but not necessary conditions for the existence and natures of supervenient properties, d-fibre firings (if there are such things in humans), or the swelling of Martian nasal cavities (if

[49] Kim introduces the term 'supervenient dualism' in [18], but he clearly has in mind a form of property dualism in the sense specified by Churchland [6].

there are such beings), can serve as supervenience bases for pain.[50]

A number of features of this account of supervenience are worth highlighting. First, on this account, one substance can supervene on another: substance S supervenes on substance T just in case S's properties supervene on T's properties. On this account, substance supervenience is simply an extension of event supervenience, where event *a* supervenes on event *b* just in case *a*'s individuating property supervenes on *b*'s.[51]

Second, this account of substance supervenience leaves open the possibility that an immaterial substance can supervene on a material substance. This is significant since one might reasonably object to any claim that Aristotle is a supervenient dualist on the grounds that a necessary condition of substance S's supervening on substance T (or events *a* and *b* for that matter) is that S and T share some common substrate—in which case 'supervenient dualism' would be incoherent. The present account preserves the possibility of supervenient dualism by characterizing supervenience as a causal or nomological relation between properties rather than substrates. If one can give an account of property supervenience, there is nothing which prevents the logical possibility of supervenient dualism. This is in turn a significant feature of Aristotelian supervenient dualism as against Cartesian dualism: one striking consequence of Aristotle's view will be that it overcomes a standard sort of objection to Cartesian dualism. The objection, which Churchland labels 'the argument from neural dependence', is just that if Cartesian dualism were true, 'one would expect reason, emotion, and consciousness to be relatively invulnerable to direct control or pathology by manipulation or damage to the brain'.[52] Aristotle affirms,

[50] I here rely on the analysis of events and event supervenience advanced by Kim in a number of papers. See especially Kim [17], [18], [19], [20], and [21]. According to Kim, an event is an ordered triple of a subject, property, and a time. Cf. Haugeland [9], Horgan [13], [14], and [15], and Teller [39].

[51] This account does not require that every case of property supervenience will also be a case of substance supervenience. Rather, it entails that when the individuating properties of a substance supervene on some set of base properties, then that substance itself supervenes, and is ontologically dependent on the base substance. On this analysis, souls and other particular forms will be analogous to corporations or universities, which supervene on the various elements which comprise them but are nevertheless individuals in their own right.

[52] Churchland [6], 20. Aristotle's dualism does recognize a commitment to physiological dependence, but does not therefore collapse into what Churchland calls 'property dualism', the view that bodies have a set of non-physical properties. On the contrary, Aristotle's view represents a position altogether absent from Churchland's taxonomy of positions in the philosophy of mind, namely a variety of substance dualism

as everyone must, that mental states depend in an intimate way on physiological states. As such, Aristotle introduces subtleties into his position missing in Descartes's; consequently, his commitment to supervenient dualism represents a significant advance over Cartesian dualism. Put in less anachronistic terms: it is only Descartes's failure to appreciate the subtleties of the Aristotelian position which has made substance dualism seem unacceptably—and unnecessarily—extravagant.[53]

Not only is this position coherent, but it also captures very well Aristotle's various anti-Platonic and anti-reductivist tendencies. He criticizes Plato for holding that the soul is separable from the body in the sense of being able to exist independently of it. But he also criticizes Empedocles and various others of his predecessors for attempting to reduce the soul to the elements, to a harmony, and so forth, and so exhibits a healthy anti-reductivism. Of course, Aristotle's anti-reductivism is compatible with materialism,[54] but it is also obviously compatible with dualism. Some passages in Aristotle require dualism; others look as if they entail materialism, but in fact do not. Therefore, the best overall consistent interpretation of Aristotle is that he is a supervenient dualist.

which carries with it a commitment to the neural, or more broadly, physiological dependence of mental properties and the ontological dependence of souls.

[53] There are of course objections to this position which a defender of Aristotle must address. Though a supervenience theorist is not constrained to hold that the postulated supervenient mental states are epiphenomenal, he will none the less be faced with the formidable problem of causal overdetermination or superfluousness. Though Charles [5] falls short in his argument for ontological materialism in Aristotle (since he fails to establish that Aristotle subscribes to the anti-Cartesian thesis that there can be no causal interaction between material and immaterial substances), he is right to ask whether Aristotle can permit bodily actions to be causally overdetermined by discrete sufficient conditions. Schiffer [33] formulates the problem as follows: (1) every bodily movement has a description in physical terms; (2) mental events are causes of some bodily movements; (3) mental events are either identical to physical events (at least at the level of tokens), or some bodily movements are causally overdetermined; but (4) bodily movements are not causally overdetermined; therefore, (5) mental events are identical to physical events. I believe that Aristotle can reasonably reject (4), especially if (*a*) we do not regard him as adopting a Humean analysis of causation, or (*b*) we regard him as adopting a non-Davidsonian account of event individuation, but these considerations are to be developed elsewhere.

[54] See Boyd [4].

VII

Given his characterization of form and matter in *Metaphysics* VII.17, Aristotle cannot regard the soul as identical to any synchronic material entity. This leaves the possibilities that Aristotle regards the soul as a non-substantial attribute of the body, as substantial but constituted by the body, or as substantial but not constituted by the body. But it is clear that the soul, as form, is substantial. Thus, only the two latter possibilities remain. The suggestion that the soul is constituted by the body must be rejected since material constitution entails that the soul is a *megethos*, but numerous arguments show that the soul cannot be a *megethos*. The only remaining possibility is, then, that the soul is an immaterial substance. But given his reasonable commitment to physiological and ontological dependence, Aristotle cannot be a Cartesian dualist; he must, therefore, be a supervenient dualist.

Aristotle's voice in the philosophy of mind is terribly subtle and not one we can ignore today: at the very least, he is well aware of something we are too often prone to overlook, namely, that there are a wide variety of materialist theories weaker than any version of the identity theory (including any version of the token-token identity theory), and likewise a wide variety of dualist theories with ontological commitments considerably less repugnant than those many contemporary materialists have rightly questioned. The intuition that many materialists cannot, and should not, reject is that once the microphysical structure of the universe is set, so too is the macrophysical structure—at least the intrinsic macrophysical structure; but Aristotle has suggested, and rightly, that this intuition requires nothing other than a commitment to supervenience, while supervenience is compatible with innocuous, non-Cartesian, versions of dualism.[55]

University of Colorado at Boulder
Johannes Gutenberg-Universität, Mainz

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