SOME RECENT APPROACHES TO ARISTOTLE'S *DE ANIMA*

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I

The first edition of Hamlyn's translation and commentary immediately preceded a sustained, intensive investigation into the philosophical issues raised by the terse, pregnant text of the *De Anima*. As the ever-expanding literature on the *De Anima* enters its third decade since Hamlyn, it may prove useful to take stock by surveying some of the dominant themes of inquiry as a first step toward philosophical reappraisal.

Scholarly opinion concerning even the most basic tenets of the *De Anima* is alarmingly diverse. It is agreed by all that Aristotle regards the soul as the form of the body (*DA* 414^{a}14–19). But agreement ends here: it is unclear whether this commitment to hylomorphism implicitly promotes a form of materialism or of dualism, or is perhaps somehow *sui generis*. There is correspondingly little agreement on the tenability of Aristotle's hylomorphism. Several scholars, including Ackrill (1972–3/1979) and Burnyeat (1992), have forcefully challenged the credibility of Aristotle's view, arguing that the deployment of Aristotle's form/matter distinction in the philosophy of mind is at best infelicitous. These challenges have been met with rejoinders, and the ensuing discussion has led to some new ground-level reassessments of the precise philosophical commitments contained in Aristotle's psychological writings.

In this review essay I shall focus on Aristotle's hylomorphism, and especially on the ontological commitments of this view. I begin by recapitulating the main avenues of approach to his hylomorphism, and by offering limited assessments of each. I also consider the principal challenges to this view, and locate the most promising lines of defence (§II). In concentrating on hylomorphism, I set aside independent discussion of a host of issues from the *De Anima*, including its prefatory historical remarks, its account of desire, and its philoso-

phy of action. Still, no investigation into hylomorphism can proceed altogether detached from Aristotle's accounts of the special faculties of the soul: indeed, the *De Anima* is much more concerned to analyse the individual capacities of the soul than to articulate and defend hylomorphism in the abstract. Consequently, I also review a small but representative portion of the literature on perception (*aisthēsis*), imagination (*phantasia*), and mind (*nous*) (§ III).

II

Aristotle rejects a central tenet of Plato's philosophy of mind by holding unequivocally that the soul cannot be separated from the body (*DA* 413^{a}3–5). His commitment to the non-separability of the soul seems reasonable in light of his claiming first that the soul and body are related as form and matter (*DA* 414^{a}14–19), and second that the form and its proximate matter are somehow one (*Meta.* 1045^{b}16–21). Given these claims, we might expect him to embrace some form of materialism, since forms, and so souls, can be the same as bodies only if they are themselves material. He frustrates this easy expectation, however, since he is reluctant to endorse any simple, straightforward form of materialism. First, in the same chapter of the *De Anima* in which he eschews inquiry into whether the soul and body are one (*DA* 412^{b}6–9), he insists that the soul is not the body, on the grounds that the body, unlike the soul, is a substrate (*hupokeimenon*) (*DA* 412^{a}15–19). Second, he maintains that the distinctive capacity of the human soul, mind (*nous*), is immaterial (*DA* 429^{a}24–5), and may hold a similar thesis regarding perception (*aisthēsis*). Finally, despite his rejection of Platonism, Aristotle nevertheless dangles the possibility of *post mortem* existence by making *nous* not only immaterial but separable, explicitly affirming that the active mind (*nous poiētikos*) is deathless and sempiternal (*DA* 430^{a}23).

Precisely because Aristotle variously emphasizes the soul's connection to the body and its distinct, formal character, scholars have disputed the interpretation of his hylomorphism, promulgating non-equivalent and often incompatible views. It may of course turn out that the relevant texts provide no resolution to such scholarly disagreements, perhaps because they simply underdetermine the issue, or indeed because they are themselves internally inconsistent. Or it may be, as some have urged, that all attempts to translate Aristotle's

idiom into our own will necessarily be frustrated, because of a conceptual mismatch between his framework of inquiry and that of all post-Cartesian philosophies of mind. This need not entail that Aristotle's programme has no worth; on the contrary, if true, his assumptions and conclusions might equally lead to a reappraisal of the issues that have come to define contemporary philosophy of mind.

Such global consequences would be arresting. It seems clear, then, that before we offer such strident claims, we should appreciate the main sources of difficulty for our understanding Aristotle's hylomorphism. These clearly flow in part from the intractability of Aristotle's texts. Even so, a careful look at the scholarship on the *De Anima* reveals another hindrance to consensus: there is no settled or received understanding of what is meant by characterizing Aristotle as a materialist or as a dualist, and consequently no clear appreciation of what is meant by suggesting that his view is *sui generis*, that it cannot be assimilated to any variety of materialism or dualism.

For clarity's sake, we can characterize a Platonic dualist as one who holds that souls are immaterial entities capable of existing independently of the body (although Plato's views evolve, this is clearly the view accepted *inter alia* in the *Phaedo*). A materialist, by contrast, holds that psychological states are also material states (so that, for example, the belief that Vienna is pretty is also some neural state *n*). This is a generic characterization, and because many commentators have sought to formulate Aristotle's views more precisely as some particular variety of materialism, it will also be useful to distinguish strong from weak materialism about the mental: (i) strong materialism holds that mental-state types are identical with physical-state types; while (ii) weak materialism holds that every human mental-state token is also a physical-state token. It is clear that (i) entails (ii), but not *vice versa*; weak, but not strong, materialism is compatible with the logical possibility of a mental state's being realized by some non-physical system. Neither set of options is exhaustive.

As formulated, Platonic dualism and generic materialism are mutually exclusive but not exhaustive: one could be a dualist without being a Platonic dualist, and one could be a materialist without embracing some specifications of the generic formulation of materialism provided. To understand this, one need only reflect that strong and weak materialism do not exhaust varieties of materialism: as we shall see, some of the best formulations of Aristotle's hylomorphism

may be taken as attempts to locate his view somewhere on the continuum defined by the termini these positions provide. In any case, it seems accepted by all, or nearly all, that Aristotle is neither a Platonic dualist nor a strong materialist. Perhaps most distinctive of recent scholarship on hylomorphism is its tendency to converge around the threshold between the weakest forms of materialism and the weakest forms of dualism.

In surveying the positions offered for Aristotle together with the passages variously cited in their support, it becomes evident that reasonable cases can be made for distinct and even incompatible interpretations. It is therefore not unreasonable to wonder whether Aristotle decisively endorses materialism or dualism, or, if he does, to wonder whether he decisively endorses any finely tuned variety of either; nor is it unreasonable to wonder in general whether his position can be assimilated to any recognizably modern position. It is possible that he has failed to pose for himself the questions he would need to answer in order for us to make these sorts of determinations. For this reason, it is worth considering at the outset the prominent suggestion that Aristotle's philosophy of mind is somehow *sui generis*.

(1) *Hylomorphism as* sui generis. Sorabji has advanced the view that Aristotle's position is *sui generis* and so 'not to be identified with the positions of more recent philosophers' (1974/1979, p. 43).[1] This is an interesting and important suggestion, since if true it will recommend serious meta-theoretical reflection about the array of positions on mind–body relations taken by contemporary philosophers. Sorabji seeks to establish the uniqueness of Aristotle's approach by contrasting it with Cartesian dualism and several varieties of contemporary materialism. His account of Aristotle is therefore an arresting one, insofar as it holds out the possibility that Aristotle shows how post-Cartesian taxonomies in the philosophy of mind are misguided, perhaps because they tacitly incorporate false presuppositions about our mental terrain, or formulate the important questions about mind and body by relying on a noxious conceptual apparatus.[2]

But it is questionable whether Sorabji's method of contrasts is sufficient for his purposes. First, Sorabji's claim is more or less ambitious depending on the sense in which he regards Aristotle's position as *sui generis*. He initially portrays Aristotle's view as *sui generis* in a robust sense, such that it highlights the conceptual indefensibility of any clear distinction between materialism and immaterialism

(p. 43). Yet after contrasting Aristotle's view with contemporary materialism, Sorabji seems to settle for a comparatively anaemic thesis by representing hylomorphism as an otherwise unespoused form of materialism: 'Aristotle improves on some present-day materialists' by refusing to identify the soul with the body (p. 55). Even this milder thesis, if true, will hold considerable interest for us. If Aristotle's hylomorphism is *sui generis* in this sense, then we stand to learn something from him by coming to recognize a form of materialism which we had otherwise overlooked.

There are grounds for scepticism about the milder thesis as well. If he is a materialist who refuses to identify souls with bodies, then Aristotle joins forces with the many contemporary materialists who hold that mental states are constituted by physical states without being identical with them. Sorabji's interpretation consequently gives us no reason to regard Aristotle's hylomorphism as a *sui generis* form of materialism. *A fortiori* it gives us no reason to regard Aristotle's views as *sui generis* in any more robust sense. Hence, it remains an open question whether one can appropriately regard Aristotle's views as occupying some identifiable place in a familiar taxonomy of views in the contemporary philosophy of mind.

(2) *Hylomorphism as materialism.* If Sorabji is wrong to characterize Aristotle's views as in any sense *sui generis*, he is not thereby wrong to regard him as a particular sort of materialist. Indeed, the real import of Sorabji's position is to regard Aristotle as a sophisticated materialist, who makes philosophically fruitful use of the notion of constitution in describing mind–body relations.[3] The thought that bodies constitute souls in the way that a quantity of clay constitutes a vase is a first approximation of a weak form of materialism. Consequently, Sorabji's view agrees with what is clearly the dominant trend of interpretation, that hylomorphism is a form of weak materialism.

What feature of hylomorphism requires materialism? Most commentators presume that Aristotle's hylomorphism must amount to some form of materialism since it is precisely calculated to avoid Platonic dualism and explicitly affirms the non-separability of soul and body (*DA* 413^{a}3–^{b}6). A clear example of this sort of reasoning is provided by Barnes (1971–2/1979), who infers what he calls a weak form of physicalism directly from the thesis that the soul is not separable from the body; indeed, he maintains (p. 35) that Aristotle's commitment to non-separability 'states' a form of weak physicalism, which he characterizes as:

$$\psi a \rightarrow \phi a$$

where ψ is some mental predicate and ϕ is some physical predicate.[4] Thus, if a is the belief that Vienna is a handsome city, then a is also some physical state, most likely in human beings some neural state. Barnes's view is a form of materialism because it commits Aristotle to the position that all psychic states are also material states; it is *weak* materialism because it does not entail that every mental-state type (being-ψ) is identical with some physical-state (being-ϕ), and thus allows that mental states can be realized by a variety of distinct physical states.

However weak, Barnes's version of physicalism is not entailed by Aristotle's commitment to non-separability. While it is certainly true that in denying the soul's separability Aristotle rejects Platonic dualism, according to which the soul is both an immaterial substance and separable from the body, this denial does not by itself entail any form of materialism. For it is compatible with the view that mental states require physical states as supervenience bases, even though they are not themselves physical states.[5] That is, Aristotle's commitment to non-separability is compatible with a view according to which mental states are ontologically dependent on states of the body, even though they are not constituted by them. Hence, an unaugmented commitment to non-separability underdetermines the issue.

Of course, materialist interpretations of Aristotle's hylomorphism find many other sources of textual support. Beyond insisting on the non-separability of soul and body, Aristotle claims in addition that the soul and body are one, and one in the strictest sense. As he says,

> It is therefore not necessary to inquire whether the soul and the body are one, just as it is [not necessary to inquire] 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 and being are spoken of in many ways, actuality is most strictly [spoken of in this way]. (*DA* $412^{b}6$–9; my translation)

Since the soul is the actuality of the body (*DA* $412^{a}21$), one would expect the soul and body to be one in the strictest sense; thus, at least initially, Aristotle invites us to regard soul and body as identical. Still, it is worth reflecting on Aristotle's illustration of the sort of unity he has in mind. He offers the wax of a candle and its shape as analogous

to the matter of a body and its soul. The analogy may seem ill-suited on several counts: most notably, the shape of a candle is evidently a universal,[6] while its wax is a spatio-temporal particular, and so not logically repeatable. If this is correct, the shape and the wax can hardly be one thing, and therefore can hardly be identical. Consequently, Aristotle's analogy initially undermines rather than supports the contention that soul and body are to be identified, even if it provides an illustration of the soul's non-separability from the body.

The canonical texts invoked in attributing materialism to Aristotle thus fall short of committing him to that view. They suggest an outlook comfortable with a materialist orientation, while not actually entailing any such settled position. These particular texts, however, do not exhaust the available evidence in support of a materialist rendering of hylomorphism. Charles (1984) finds other evidence committing Aristotle to 'ontological materialism', a view he characterizes thus: 'For any true psychological description of the world (*either* a description of the psychological phenomena *or* a description making use of psychological vocabulary) there is some state of affairs characterisable employing only physical vocabulary such that: the obtaining of the physical state is sufficient (but not causally sufficient) for the truth of the psychological description' (p. 214). Charles's interpretation represents a refinement of Barnes's insofar as it admits the possibility that a physical state could be (non-causally) sufficient for a mental state without actually constituting it. But it is for this very reason still weaker than Barnes's form of weak physicalism, and is in fact compatible with views carrying no commitment to materialism as such.[7]

Nevertheless, Charles offers a sophisticated argument calculated to establish that Aristotle is in fact a materialist. On his interpretation of Aristotle's theory of action, every intentional action is caused by some necessitating bodily movement (1984, pp. 215–16), which is itself necessitated by some set of physical processes. At the same time, an agent's desires efficiently cause the bodily movements requisite for action (citing *EN* $1111^{a}22–3$ and *DA* $433^{b}21–2$, $433^{a}31$ ff.). Thus, according to Aristotle, both psychological and physiological conditions are efficient causes of action, while efficient causes are sufficient conditions. This presents Aristotle with a choice: either bodily movements are in a systematic way causally overdetermined or the psychological causes of behaviour are also physiological events. Charles adduces evidence to show that Aristotle opts for the second alternative. He suggests that for Aristotle physical effects must have

physical causes (PC), a principle which entails that a psychological state 'cannot be a cause of bodily movement unless it is enmattered in some physical state which necessitates the bodily movement as its essential cause' (1984, p. 219). Hence, his argument relies crucially on locating a commitment to (PC), which he finds in *De Motu Animalium* 703[a]18–29. Charles evidently relies on 703[a]24–5, where Aristotle says 'whatever is going to impart motion without itself undergoing alteration must be of this type [viz. of the so-called connate pneuma, or *sumphuton pneuma*[8]]' (*dei de to mellon kinein mē alloiōsei toiouton einai*). But this passage neither contains nor entails (PC): it claims only that whatever can impart motion without undergoing qualitative change must have the sort of plasticity that the connate pneuma has, thereby leaving open the possibility that something could be of the same type as the connate pneuma, and so have the requisite characteristics, without being a physical cause.[9] Thus, this passage does not commit Aristotle to (PC), and therefore does not provide the premiss Charles needs to show that hylomorphism can be understood only as a form of ontological materialism.[10]

In light of the anti-Platonic sentiment abundant in Aristotle's philosophy of mind, Charles is surely justified in seeking to reduce hylomorphism to a form of materialism. Still, Aristotle's causal commitments do not actually resolve the issue decisively in this direction. Consequently, despite considerable textual evidence suggesting such a conclusion, Aristotle's hylomorphism does not obviously collapse into some type of materialist theory, however weak. To be sure, commentators have, not unreasonably, sought to understand Aristotle's hylomorphism as a form of weak materialism; but there are equally reasonable reservations about whether they have achieved the sort of closure on this issue that they sometimes presume.

(3) *Hylomorphism as dualism.* Of course, these reservations do nothing to show that hylomorphism cannot in the end be construed materialistically. They do, however, show that one cannot immediately rule out the possibility that Aristotle is a dualist, albeit of a markedly non-Platonic sort. Indeed, some texts seem to have just this kind of dualist implication. Accordingly, the initially improbable hypothesis that Aristotle's hylomorphism is best understood as a form of dualism has also found its defenders, among them Robinson (1983), Shields (1988*a*), and Heinaman (1990). Robinson focuses on Aristotle's conception of *nous* as immaterial, chiding other recent scholars for ignor-

ing this feature of Aristotle's thought:[11] 'More often than not nowadays the favoured opinion is that Aristotle is essentially or in spirit some sort of materialist. I say that the favoured opinion is that he is a materialist *essentially* or *in spirit* because few dare to say that he actually *is* a materialist, because few dare to deny that his doctrine of *nous* is immaterialist' (1983, p. 123). Robinson observes correctly that the majority of commentators have disregarded Aristotle's conception of an immaterial *nous*; but he wrongly supposes that all such critical positions are cavalier. Although there are philosophical questions about the justifiability of Aristotle's conception of *nous* as immaterial, Robinson does little to explain or defend Aristotle's position, focusing instead on the differences he sees between Aristotelian and Cartesian dualism.[12] Here he sees two principal differences: first, for Aristotle soul and body 'require each other in a more than purely causal manner'; second, there are potential differences regarding Cartesian and Aristotelian conceptions of disembodied existence (1983, pp. 143–4). These differences are hard to make out, and in any case do nothing to underwrite the plausibility of Aristotle's view, or to address the understandable philosophical qualms that have led to the scholarly disregard for *nous* which Robinson identifies.[13]

More importantly, in focusing on *nous*, Robinson does not endeavour to characterize hylomorphism as such. Thus, even if it is granted that *nous* is immaterial, this does little to characterize hylomorphism in any general way. Hylomorphism is a thesis about the relation of the soul to the body; since for Aristotle the mind is but one capacity of the soul, an analysis of *nous* provides at most a partial characterization of that thesis.

If we focus on the soul as a whole, a more comprehensive conclusion may be possible. I have argued, for example, that since the soul is an individual form, and so a substance, it cannot be an attribute of the body (Shields 1988*a* and 1988*b*). Moreover, numerous arguments show that the substantial soul cannot be a magnitude (*megethos*) (see Shields (1988*a*, §IV)); consequently, Aristotle has strong dualist commitments.[14] At the same time, materialist interpretations like Charles's are not completely off the mark, since they rightly stress that for Aristotle mental states (excepting noetic states) supervene on physical states. These various commitments may strain against one another, but they are consistent: Aristotle may be a 'supervenient dualist',[15] who recognizes that anti-reductivism in the philosophy of mind carries no commitment to robust, Platonic dualism.

Such a dualistic interpretation admits of many exegetical challenges, and certainly questions remain about its tenability. First, merely to say that Aristotle's hylomorphism is consistent may seem faint praise. But here Sorabji's impulse for regarding Aristotle as *sui generis* becomes relevant. If there are no successful strategies for reducing mental properties to physical properties, then we may seem saddled with the equally unattractive alternatives of eliminative materialism and Platonic dualism. Aristotle's point of view introduces subtlety by distinguishing conceptual from ontological separability: souls may depend on bodies for their existence even if mental properties are not reducible to physical properties. Hence, supervenient dualism shares in common with weak materialism the thought that Aristotelian hylomorphism provides a way of recognizing subtle discriminations among views in the philosophy of mind which are often unnecessarily polarized, and wrongly taken to be exhaustive. In this sense, the gulf between the competing formulations of hylomorphism under consideration may not be as wide as would at first appear: all coalesce around the weakest forms of materialism and dualism, and all recognize Aristotle's somewhat elusive perspective as yielding a viable alternative to some more familiar options.

(4) *Hylomorphism and the functionalism debate.* The conflicting signals one finds in the *De Anima* and related psychological treatises go some way toward explaining the arresting divergence of scholarly opinion about hylomorphism. The challenging unclarity of Aristotle's opinions by itself assures the lively scholarly controversy surveyed thus far. But the drive to characterize and understand Aristotle's hylomorphism has also been propelled by recent developments in the philosophy of mind that are quite independent of the history of Aristotelian scholarship. Observing that mental states are in principle multiply realizable,[16] Putnam (1975) came to appreciate that any form of the identity theory, according to which mental-state types are identical with physical-state types, must be false. Even if some version of ontological materialism is correct, one must allow that all mental-state types might be realized by distinct sorts of physical-state types. This reflection led Putnam to take a cue from Aristotle: '. . . what we are really interested in, as Aristotle saw [*DA* 412^{a}6–^{b}6], is form and not matter. *What is our intellectual form?* is the question, not what the matter is. And whatever our substance may be, soul-stuff, or matter or Swiss cheese, it is not going to place any interesting restrictions on

the answer to this question' (1975, p. 302; Putnam's italics). Developing this Aristotelian insight, Putnam propounded a variety of functionalism, according to which mental-state types are to be identified with functional-state types, which in turn are identified by the relations they bear to a system's inputs, outputs, and other mental states. Such functional properties may be realized by physical systems; in humans a given neural state *n* has the property of being a belief just because it plays a certain functional role.

While contemporary functionalists touted Aristotle as one of their own, scholars began investigating the degree to which such a characterization was accurate. Here again, the verdict is widely divided. Some have seen Aristotle as a thoroughgoing functionalist (Nussbaum and Putnam (1992), Irwin (1991), Shields (1990), Wedin (1988)); others offered qualified rejections (Modrak (1987) and Hartman (1977)); and still others sought to show that Aristotle's view positively precludes rather than sustains a functionalist analysis (Robinson (1978), Granger (1990), Heinaman (1990, §III)).

Among those rejecting a functionalist interpretation, Robinson (1978) has been the most vehement. He offers a series of objections intended to show that even though Aristotle holds that 'every biological process has a function which explains why it exists', he has no interest in providing a 'reductive account of the experience, feeling, or sensation of (e.g.) pain' (1978, p. 111). This worry is a bit obscure. Functionalism has seemed attractive to many precisely because of its *anti*-reductive credentials. Presumably Robinson understands functionalist definitions to be reductive in the sense that they make no essential reference to *qualia*. If so, his characterization of functionalism is apt, but finds no support in the texts of Aristotle. Indeed, in the very passages where Aristotle urges functional definitions as appropriate, one finds no mention of the qualitative character of mental states. Thus, at *De Anima* 403ª26–7 he argues that anger is 'a certain sort of motion of such and such a body, or part or faculty [of a body], by this on account of that'. Amplified, Aristotle's point is that anger is a particular sort of movement with a particular sort of cause and for the sake of a certain end. He neither mentions the qualitative character of anger nor denies that anger has such a character. It is therefore difficult to commit Aristotle to the view that mental states have an *essentially* qualitative character which necessarily eludes functional definition.[17] Hence, Robinson provides no convincing grounds for dismissing functionalist interpretations.[18]

Commentators more sympathetic to functionalist interpretations (e.g. Irwin (1991)) have attempted to situate Aristotle's views within his broader teleological framework, in some cases relying on Aristotle's general analysis of kind-identification and -membership (Shields (1990)). Aristotle claims in the *Meteorologica*, for example:

> All things are defined by their function: for [in those cases where] things are able to perform their function, each thing truly is [*F*], for example, an eye, when it can see. But when something cannot [perform that function], it is homonymously [*F*], like a dead eye or one made of stone, just as a wooden saw is no more a saw than one in a picture. ($390^{a}10$–15)

Aristotle asserts that something belongs to a kind *F* just in case it can perform the function definitive of that kind. However unlikely this may seem as an analysis of kind-membership, one consequence would appear to be, for example, that whatever—and only whatever—has the power to see will be an eye; similarly, whatever—and only whatever—can think will be a mind. In allowing that a sufficient condition for belonging to the class of minds is the capacity to think, Aristotle commits himself in principle to the claim that the material constitution of a thing will not place any 'interesting restrictions', as Putnam says, on our account of mind. Consequently, Aristotle apparently endorses a form of compositional plasticity for mental states, and thus recognizes and affirms one central functionalist insight.[19]

This much shows only that a weak form of functionalism is congenial to Aristotle, not that he embraces any articulated version of that view. Still, functionalist interpreters have found significant textual support (e.g., in addition to passages already cited, *DA* $408^{b}21$–3, $414^{a}19$–27; *Meta.* $1036^{a}31$–$^{b}7$; *De Part. Anim.* $647^{a}10$–12; *Rhet.* $1378^{a}31$), and have not unreasonably sought to understand hylomorphism from that perspective. We might regard it as one among other welcome consequences of this approach that it helps explain Aristotle's frustratingly non-committal attitude toward some key issues in the ontology of mind. Certainly a functionalist, as such, may prefer to remain aloof in a debate between materialists and dualists: functionalism is equally compatible with either of these views. Aristotle's preference for holding some of these issues in abeyance in the *De Anima* may, then, reflect his recognition that a functionalist version of hylomorphism by itself entails neither materialism nor dualism. Hence, the difficulties one encounters in attempting to show decisively that Aristotle is a weak

materialist or a weak, non-Platonic dualist may derive precisely from an overarching commitment to functionalism. He can certainly embrace weak materialism as a functionalist; or if, as suggested, his general characterization of form prohibits him from accepting weak materialism, Aristotle may nevertheless be a functionalist who independently favours a form of supervenient dualism.

(5) *Challenges to hylomorphism.* The drive to characterize Aristotle's hylomorphism and its functionalist commitments is in large measure simply an attempt to unpack and understand his philosophical proposal. This project is fuelled in part, of course, by the hope that Aristotle's hylomorphism may still prove philosophically enlightening. Two significant philosophical challenges call the worth of Aristotle's philosophical programme into serious question. Both Ackrill (1972–3/1979) and Burnyeat (1992) have offered arguments which seek to identify fundamental problems in Aristotle's hylomorphism,[20] problems which, if genuine, render a large portion of the reassessment of Aristotle's view philosophically moot. If correct, Ackrill and Burnyeat show how Aristotle's hylomorphic project in the philosophy of mind is a non-starter.

Ackrill argues with great care that Aristotle's application of the form/matter distinction to soul–body relations is altogether infelicitous. Burnyeat follows Ackrill, but offers additional considerations intended to yield the more strident conclusion that Aristotle's philosophy of mind is no longer credible, but should be 'junked' and left to rot with the remaining conceptual flotsam of pre-Cartesian mental philosophy. I shall focus on Ackrill's argument, since the response I offer holds for the core of Burnyeat's as well.[21]

We can understand Aristotle's claim that a bronze statue is a compound of form and matter: when a lump of bronze acquires a particular shape, say the shape of Harmodios, we have a statue of Harmodios. That same quantity of bronze can lose its Harmodios-shape, and acquire another, distinct shape, say the shape of Aristogeiton. The quantity of bronze remains the same, and thus is neither essentially Harmodios- nor Aristogeiton-shaped. The same cannot, however, be said in the case of the soul, since Aristotle contends that the body is homonymous (*DA* $412^{b}20$–5, $412^{b}27$–$413^{a}2$); he suggests, in fact, that a dead body is not a body *except* homonymously (*plēn homōnumōs*).[22] This claim entails that a human body is a human body only when it is ensouled, with the result that human bodies, unlike

quantities of bronze, are *essentially* enformed. Ackrill summarizes his point:

> . . . Aristotle's definitions of *psuchē* resist interpretation because (i) the contrast of form and matter in a composite makes ready sense only where the matter can be picked out in such a way that it could be conceived as existing without the form, but (ii) his account of body and bodily organs makes unintelligible, given the homonymy principle, the suggestion that this body or these organs might have lacked a *psuchē*. The complaint is not that Aristotle's concept of matter and form commits him to the impossible notion that what has form must lack it—that the same matter both has and has not the form; but that it commits him to something that he cannot allow to be possible in the case of living beings, namely that what has the form might have lacked it—that the same matter has and might not have had the form. (1972–3, p. 70)

Ackrill rightly observes that a commitment to homonymy introduces a salient disanalogy between Aristotle's prime examples of hylomorphic artefacts, e.g. bronze statues, and ensouled bodies. A bronze statue is contingently enformed by the shape it has; bodies are necessarily ensouled. Hence, whereas an enformed mass of bronze will have modal properties at a given time which its correlative form lacks, this will not be the case for living bodies. Thus, Aristotle's calculated tripartite analogy:

form : matter :: Hermes shape : bronze :: soul : body

breaks down: human bodies cannot remain bodies after losing their forms.

In light of this disanalogy, Aristotle might be advised simply to rescind his application of the homonymy principle to human bodies. He needs, evidently, to allow that bodies are contingently enformed, but as Ackrill rightly notes, the homonymy principle undercuts this claim by making bodies necessarily ensouled.

Aristotle cannot take up this advice, at least not without rethinking some central features of his account of kind-membership. If, as the passage from *Meteorologica* IV quoted above suggests, a necessary condition of being a human body is having the capacity to engage in the activities characteristic of human bodies, then corpses cannot be regarded as human bodies, except by custom or courtesy. They lack

the determinative capacity. Hence, Aristotle is right to apply the homonymy principle in just the way he does, and is not at liberty simply to withdraw it in light of the disanalogy Ackrill points out. Consequently, Ackrill's argument presents a serious threat to Aristotle's hylomorphism.

To the extent that those engaged in the project of characterizing Aristotle's hylomorphism are unwilling to concede that his views are incoherent, it is incumbent upon them to respond to Ackrill's argument. Several, including Cohen (1987), Whiting (1992), and Shields (1993), have defended hylomorphism against Ackrill's charge. The strongest reply is in some ways initially concessive. Ackrill is correct in maintaining that the homonymy principle entails that human bodies are essentially ensouled. Even so, Aristotle distinguishes two sorts of human bodies, organic and non-organic. After defining the soul as the 'form of a body having life in potentiality' (*eidos sōmatos phusikou dunamei zōēn echontos*, *DA* 412^{a}19–20), Aristotle adds at 412^{a}28–^{b}1 'this sort of body would be one which is organic' (*toiouton de ho an ēi organikon*). Aristotle never characterizes by name the body which is not organic; still, he draws a distinction which implies its existence. This distinction between the organic and the non-organic body allows him to avoid contradiction. He can satisfy the homonymy principle by holding that the *organic* human body is necessarily ensouled, and the demands of hylomorphism by holding that the non-organic human body is contingently ensouled. A non-organic body can then survive the destruction of the compound in the same way that a quantity of bronze persists through the destruction of a statue of Harmodios. Consequently, Aristotle can acknowledge the plain fact that a human body of some sort survives the instant of death, and can therefore justifiably describe, as he does, a human body which has lost or 'thrown off' (*apobeblēkos*) its soul at the organism's death (*DA* 412^{b}25).

This line of response to Ackrill's argument is promising, but invites some attendant difficulties of its own. For example, it becomes necessary to characterize the complex relation between the organic and non-organic body, as well as the relation between these and the soul, in what looks to become a fairly cluttered theory.[23] Organic and non-organic bodies cannot be identical, since in that case the one could not be essentially and the other only contingently ensouled. Moreover, in his definition of the soul, Aristotle characterizes organic bodies as *potentially* alive, rather than as actually alive (*DA* 412^{a}19–21, 27–8).

But the response sketched concedes to Ackrill that some body, namely the organic body, is not only actually alive, but *necessarily* actually alive. Yet we normally speak of something's being potentially *F* only when it is not actually *F*. (When asked if Wellington led the British forces at Waterloo, one would be perverse to answer, 'Yes, potentially.') Hence, either Aristotle contradicts himself, or it is possible for him to hold that some things are both potentially and actually *F*. His analysis of actuality and potentiality suggests such a possibility;[24] but it should be clear that Ackrill's argument poses some far-reaching challenges to the defenders of hylomorphism.

III

Aristotle marks off distinct psychic faculties. The broadest, the ability to take in nutrition, is shared by all living things, including plants, which are consequently ensouled. In addition to this capacity, animals have perception (*aisthēsis*), while human beings have mind (*nous*) as well. The status of imagination (*phantasia*), to which Aristotle devotes a chapter of the *De Anima*, is somewhat in doubt. Aristotle distinguishes it from both reason (*dianoia*) and perception (*DA* $427^{b}14$; cf. $428^{a}17$ff.), while connecting it intimately to both perception (*DA* $425^{b}25$; cf. $427^{b}15$, $428^{b}11$ ff.) and thinking (*noēsis*: *DA* $433^{a}10$). Moreover, animals and human beings equally have imagination; but it is not clear whether they have the same type, since Aristotle distinguishes rational from perceptual imagination (*DA* $433^{b}29$–$434^{a}5$). In any case, as Kahn notes (1966/1979, pp. 4–5, with n. 17), Aristotle divides his treatment of these various capacities unevenly, giving the lion's share to perception.[25]

(1) *Perception.* Although Aristotle deals with perception (*aisthēsis*) and the individual senses in some detail, he does little to characterize the faculty in any general way. Modrak (1981) investigates Aristotle's analysis of perception, and seeks to reconstruct the theoretical substructure underlying his account. She argues that a unified and largely defensible theoretical framework underpins Aristotle's sometimes seemingly disparate characterizations of sensory activity.

Among the principles Modrak attributes to Aristotle[26] is what she calls the Actuality Principle: a cognitive faculty is potentially what its object is actually. Aristotle clearly holds some such view, but it is difficult to determine his meaning precisely. He says: 'that which can

perceive is potentially such as the object of sense already is actually' (*DA* 418^{a}3–4). He cannot think that the sensory faculty and the object of sense become numerically identical;[27] he must hold, as he goes on to clarify, that these become one in form (*DA* 431^{b}29; cf. 429^{a}13–18). But the import of this claim is unclear.[28] For example, does Aristotle think that the sense organs are receptive of sensible qualities in such a way that they actually manifest those qualities, so that, for example, the eye becomes red when perceiving a red object? Sorabji affirms that he does (1974/1979; see also 1971/1979, pp. 78–9). This claim is doubtful, and it must in any case be appreciated that it admits of a stronger and a weaker formulation. Aristotle might hold, mistakenly as Philoponus already pointed out (*In De Anima*, p. 303, lines 3ff.), that *aisthēsis* can occur only if the relevant sense organ actually takes on the quality being perceived. Or he might hold more strongly that *aisthēsis* just consists in this physiological process. Nothing in the *De Anima* grounds the stronger claim; on the contrary, *DA* 424^{b}16–18 suggests just the opposite.[29] Hence, there is no reason to think that, for example, the coloration of the eye jelly constitutes a given act of seeing. This being so, the weaker thesis, that this sort of coloration is necessary for perception, loses much of its interest. Although clearly interested in the physiology of perception (*DA* 403^{a}25–^{b}9), Aristotle does not suppose that there is nothing to say about *aisthēsis* beyond the false and unilluminating view that the sense organs always manifest the qualities they perceive.[30] Still, Sorabji provides *an* account that makes literal sense of Aristotle's contention that the sensory faculties are potentially what their objects are actually, a claim that has otherwise proven remarkably difficult to unpack, let alone defend.[31]

Corresponding to Aristotle's claim that the senses are potentially what their objects are actually is his view that the sensory faculties are related as such (*kath' hauto*) to their objects. In holding such a view, Aristotle evidently suggests that a given faculty is defined or at least individuated by its objects,[32] and as a methodological correlate that one must explicate sense objects in order to understand sensory faculties. Aristotle respects the proposed methodology in his discussions of the individual senses,[33] as well as in his discussion of incidental perception (on which see Cashdollar (1973)) and the common sense (on which see Modrak (1981) and Block (1988)).

(2) *Imagination.* It is less clear whether Aristotle respects this proposed methodology for imagination (*phantasia*). Aristotle considers imagina-

tion principally in *De Anima* III. 3, a transitional chapter bridging his discussions of perception and mind, and one fraught with textual problems and seeming incongruities. Unfortunately, Aristotle does little to characterize imagination in any positive way. Although he does say, rather narrowly, that imagination is 'that in virtue of which an image occurs in us' ($430^{a}1$–2), the bulk of this chapter is given over to differentiating imagination from other faculties of the soul. In the process of doing so, Aristotle relies on partial characterizations of the faculties he seeks to distinguish and sometimes ignores distinctions drawn elsewhere in the *De Anima*. For example, Aristotle once differentiates imagination from perception on the ground that some animals have perception without imagination, even though he later recognizes two forms of imagination, one, a deliberative form, available to human beings, while the other, perceptive imagination, is 'found in the other animals' (*DA* $434^{a}6$–7). This is not a contradiction, since Aristotle might hold that perceptive imagination extends to some but not all animals (this indeed seems to be his view at *DA* $428^{a}9$–11; but cf. *Meta.* $980^{b}22$ and *De Part. Anim.* $648^{a}5$). Even so, the tensions of the chapter initially support Hamlyn's finding: 'there is clearly little consistency here' (see his note to *DA* 427^{b}).

Several scholars have sought ways to overcome seeming deficiencies of Aristotle's account of imagination. Schofield (1978/1979) considers the role *phantasia* plays in Aristotle's philosophy of mind, and argues that 'the range of phenomena Aristotle assigns to *phantasia* . . . suggests a rather different physiognomy for the concept from that conveyed by "imagination"' (p. 106; but cf. second thoughts on p. 107); rather, Aristotle is concerned with a psychic capacity for handling 'non-paradigmatic sensory experiences' (p. 106). On this account, Aristotle's conception of *phantasia* is not so much inconsistent or underdeveloped as so pervasive that it encompasses many disparate forms of experience (for instance, dreaming, or puzzling out an indistinct image), each of which resembles—but is not—a paradigmatic instance of sense perception. Thus, imagination for Aristotle is a sort of residual faculty dedicated to housing a set of quasi-sensory experiences related to one another at best by family resemblances.

Wedin (1988, e.g. at pp. 24, 65–7) is critical of Schofield's account. He rightly points out that Aristotle allows images to accompany paradigmatic sensory experience at *DA* $428^{b}25$–30, and thus connects imagination and sense perception in ways inimical to Schofield's approach (for the latter's concessive comments on this passage, see

Schofield (1978/1979, p. 118)). Wedin argues instead that imagination is a 'creature of theory . . . [which] yields a surprisingly sophisticated theory of [re]presentational[34] structures within an essentially functionalist framework' (p. 24). Wedin attributes some of the problems Aristotle's commentators have located in his account of imagination to a misunderstanding of its true status: he somewhat perplexingly seeks to show that imagination is not a full-blown Aristotelian capacity, but is instead a sort of sub-faculty working in concert with the fully developed capacities of perception and mind (1988, pp. 45–63, 254). The advantages of this approach are unclear. One question concerns what is gained by regarding imagination as incomplete; another concerns the plausibility of this view in light of Aristotle's typically treating imagination as on par with the other faculties (e.g. at $414^{b}33$–$415^{b}3$); and yet another concerns Aristotle's identifying objects of imagination in the same ways that he identifies objects of sense perception and mind (at *De Memoria* $450^{a}24$; for Wedin's assessment, see his pp. 61–3). Still, Wedin offers a sophisticated and novel approach to Aristotle's conception, and provides astute commentary on many of the individual passages in which Aristotle discusses imagination.[35]

(3) *Mind.* Aristotle opens *DA* III. 4 by describing mind (*nous*) as 'the part of the soul by which it [the soul] knows and understands' (*DA* $429^{a}9$–10). Like the perceptive capacity of the soul, the mind thinks by receiving the forms of its objects (*DA* $429^{a}13$–18).[36] But unlike the perceptive faculty, *nous* lacks an organ, a thesis Aristotle seeks to infer from the sort of plasticity required for thinking a broad range of objects (*DA* $429^{a}29$–$^{b}9$). Commentators often presume that Aristotle's argument for the immateriality of *nous* rests essentially on the impoverished empirical science of his day. In consequence, many agree with Hartman in holding that 'Aristotle's doctrine of *nous* is a weak spot in an otherwise plausible and well-argued theory of mental entities and events' (1977, p. 7). Yet many who disparage Aristotle's dualism find his account of thinking and intentionality worth pursuing.[37]

For example, Wedin (1986 and 1988) finds instructive parallels between Aristotle's views and a contemporary position he labels 'cognitivism', and in this context advances a number of theses about *nous* worth investigating. Especially noteworthy is his treatment of the active mind (*nous poiētikos*) introduced in *De Anima* III. 5. In working to establish a clear function for *nous poiētikos*, Wedin usefully stresses

the role this faculty plays in Aristotle's account of the autonomy of human cognition. Although his relentlessly naturalistic interpretation of *nous poiētikos* cuts against the grain of the text,[38] Wedin provides ample reason to reject Hartman's view that Aristotle's account of *nous poiētikos* 'is an inadequate answer to a wrongheaded question' (1977, p. 221). On Wedin's approach, *nous poiētikos* has a role to play both in the acquisition of concepts and in the movement from dispositional to occurrent knowledge which occurs when, for example, someone who knows the paradox generated by the Russell set, but is not occupied with it, calls it forth into consciousness. Aristotle rightly acknowledges that one can know in these different senses (*DA* 412^{a}22–3), and embeds his account in his general distinction between types of actuality (417^{a}21–418^{a}6; cf. *Phys.* 255^{a}30–^{b}5). It is a virtue of Wedin's analysis that it provides Aristotle with a mechanism which at least partially explains these distinct types of actualizations (1988, p. 254); even so, as Wedin acknowledges, some features of the autonomy of thinking presupposed in Aristotle's distinction resist clear explication, even granting *nous poiētikos* this role.

IV

This brief overview has, of necessity, omitted mention of many valuable scholarly works. But perhaps the general outlines I have sketched give at least a faint indication of the liveliness and quality that have characterized recent discussion of Aristotle's *De Anima*. Even where consensus has been lacking, progress has been possible; and such disagreement as persists is as often a sign of health as it is of scholarly disarray. The *De Anima* continues to offer various exegetical puzzles and obstacles to philosophical closure. Even so, the redoubtable theory it propounds fully deserves the scrutiny it has inspired.[39]

NOTES

1. Lawson-Tancred (1986) follows Sorabji in regarding hylomorphism as *sui generis*, though his argument proceeds along a different track.
2. Nussbaum (1984, p. 206) urges this as a benefit of Aristotle's hylomorphism.

3. Sorabji here concurs with Wiggins (1971) and Ackrill (1972–3/1979) in seeing the notion of constitution as playing a central role in Aristotle's approach.
4. Barnes claims: 'ϕ is physical if ϕ is definable in terms of the primitive predicates of physics (and, if necessary, of chemistry; and, if necessary, of biology)' (1971–2/1979, p. 34). Weak physicalism, in Barnes's sense, should therefore be regarded as a species of what I have called weak materialism: it adds to the claim that token mental states are also token physical states the further claim that psychological predicates can perhaps be reduced to the primitive predicates of physics, or at least to chemistry or biology. In the text I argue that Barnes's argument fails to establish weak materialism; if this is correct, it trivially fails to establish weak physicalism. This is a point of some interest since even if Aristotle is a materialist, there will remain the further question of whether he supposes that mental properties can be reduced (e.g. via supervenient bridge laws) to physical properties.
5. NB that there is some tension in Barnes's view insofar as he does not think that Aristotle is a weak physicalist *tout court*. Rather, after arguing that non-separability entails physicalism, he concedes that Aristotle nevertheless endorses non-physicalism for some capacities of the soul, notably mind and perhaps the desiderative capacity. He accordingly concludes that Aristotle 'emerges as a fairly consistent upholder of an attribute theory of mind' (1971–2/1979, p. 41). Shields (1988*a*, §III) reviews and rejects Barnes's suggestion that hylomorphism is a version of the attribute theory.
6. The question of whether Aristotelian forms are particular as well as universal has received a great deal of attention since Hamlyn. This literature touches upon the question of hylomorphism precisely because the soul is a form, and evidently a particular. Frede (1978/1987, pp. 68–9) considers this issue; for a fuller discussion, see Sellars (1957).
7. Even a dualist who thought that mental states supervened on physical states could endorse Charles's 'ontological materialism'. Consequently, Charles's interpretation, while certainly compatible with materialism, does not actually require that all psychological states be physical states; and this would seem to be necessary for any recognizably materialist view. Charles seems to want to

hold that so long as the relevant bodily sufficiency is non-causal, Aristotle is committed to ontological materialism; if so, he overlooks the form of non-causal nomological sufficiency required by supervenience relations.

8. For a discussion of the connate pneuma, see Nussbaum (1978, pp. 143–64).
9. Indeed, if Aristotle had intended principle (PC) in this passage, then he would have contradicted himself, since he equally holds that his unmoved mover is a source of movement, an *archē tēs kinēseōs*, which, as Ross notes, is simply Aristotle's Greek for 'efficient cause' (*Metaphysics*, ed. W. D. Ross, vol. i., p. cxxxiv). Agreeing with Charles that an efficient cause is an antecedent sufficient condition, a commitment to (PC) in the *De Motu Animalium* would commit Aristotle to the view that there could not be the immaterial antecedent sufficient causes of motion he elsewhere recognizes.
10. For further discussion and criticism of Charles (1984) on this point, see Heinaman (1990, pp. 98–9).
11. He cites Wilkes (1978, pp. 115–16), Nussbaum (1978, pp. 267–8), and Hartman (1977, pp. 6–7, 221).
12. For our purposes it will suffice to identify Cartesian dualism with Platonic dualism, in the sense specified.
13. Nussbaum (1984) responds to Robinson, by suggesting that *DA* 412^{b}6–9 not only precludes dualism but 'forestalls the whole Cartesian question. It says, don't ask that question. And it says you won't ask if you have attended in the appropriate way to the complex materiality of living things' (p. 206).
14. Heinaman (1990, p. 84; cf. p. 85 n. 5) doubts this last inference, since he holds that a materialist can regard certain properties, e.g. shapes, as not constituted by matter without abandoning her materialism. This is of course true, since properties, if there are properties, are abstract entities, and no materialist rejects materialism by endorsing realism about universals. But on the account advanced in Shields (1988*a*), the soul is not a universal; it is rather an immaterial particular.
15. Shields (1988*a*) explicitly attributes supervenient dualism to Aristotle; Heinaman offers him a similar view, holding first that he is a dualist, and second that 'the soul is a *dynamis* that supervenes (*epigignetai*) on the body when the organization of matter has reached a certain level' (1990, p. 90; cf. p. 91).

16. This is just the thought that one and the same mental-state type can be realized in different physical systems: thus pain is realized in one way in humans and another in dogs; the belief that dogs have pain is realized in one way in humans and (in principle) in another way in Martians. For comparison: the same function, say of adding two with two, can be realized in calculators composed of different stuffs and in different configurations.
17. It is further to be noted that functionalism does not entail that mental states have no qualitative character; it just does not regard this as a defining feature. Moreover, *qualia* may yet admit of functional definitions, at least insofar as second-order qualitative beliefs may necessarily accompany all qualitative states. If so, then Robinson's reservations are still less well motivated: Aristotle may admit, as he should, that mental states have qualitative character without *ipso facto* rejecting functionalism. So the thesis that Aristotle is a functionalist is in no way undermined by the existence of *qualia*.
18. Robinson provides a host of additional arguments. For discussion and replies, see Shields (1990, p. 32 n. 21).
19. For doubts about this claim, see Heinaman (1990, p. 100).
20. See also Williams (1986), who follows Ackrill (1972–3/1979) for the most part, but who also teases out in greater detail some of the initially counter-intuitive consequences of Aristotle's hylomorphism.
21. For a discussion of Burnyeat, see Cohen (1987).
22. For Aristotle's conception of the body as homonymous, see Cohen (1987), Shields (1993), and Whiting (1992).
23. Shields (1993) offers a first approximation of an approach available to Aristotle.
24. Whiting (1992, §III) develops this line.
25. The divisions are not as clean as this list suggests, but the faculties are treated roughly as follows: nutrition, *DA* II. 4; perception, *DA* II. 5–12 and III. 1–2; imagination, *DA* III. 3; mind, *DA* III. 4–5. Thus Aristotle treats perception in ten Bekker pages, mind in three, and the remaining capacities in four.
26. She identifies altogether five theoretical presuppositions, three substantive and two methodological (p. 51, ch. 2). In addition to the Actuality Principle, the substantive theses are: (i) the Psychophysical Principle: most psychic states are psychophysical, that is, physically realized states of the soul; (ii) the Sensory Representa-

tion Principle: whenever a cognitive activity has a sense object as its focal object, the operative psychic faculty is the perceptual faculty. The methodological theses are: (*a*) The Analytic Principle: psychological explanations should begin by explicating the constituent parts of psychic phenomena; and (*b*) the Normative Psychophysical Principle: given principle (i), any comprehensive psychological theory will address the psychophysical character of psychological states. In relying primarily on *De Anima* 403^{a}16–18 and *De Sensu* 436^{a}7–10, Modrak does not clearly establish (i), and so provides no basis for (*b*). In these passages Aristotle notes that sensation involves the body, but falls short of claiming that sensation is *essentially* a physical process.

27. This seems to be the purport of Lear (1988, pp. 125, 131; but cf. pp. 134, 140).
28. See Bernard (1988, pp. 49–68) for a clear and persuasive discussion of this claim in the context of *De Anima* II. 5. Bernard's book provides close and illuminating commentary on many passages concerning Aristotle's theory of perception.
29. See Heinaman (1990, pp. 97–8).
30. See Kosman (1975) and Modrak (1987, pp. 58–9 with p. 199 n. 15).
31. Slakey (1961) investigates the question whether this contention admits of a defensible interpretation, and offers a negative verdict.
32. Hamlyn (1959) has doubted this construal of Aristotle's view, urging instead that his point runs in the other direction, so that sense objects are defined by their correlative capacities. Sorabji (1971/1979) overcomes Hamlyn's reservations.
33. Sorabji defends this approach with the exception of touch (1971/1979, pp. 85–92).
34. The brackets in '[re]presentational' are Wedin's. He employs this device to avoid 'foisting on Aristotle the view that we do not actually perceive objects but only make inferences to them from Hume-like images' (1988, p. 17 n. 27).
35. For a more narrow textual commentary, see Rees (1971), and for an assessment of Aristotle's account of imagination in relation to Plato's and to some contemporary accounts, see Lycos (1964).
36. Lowe (1983) argues that Aristotle never assimilates thinking to perception, and indeed that one major aim of his discussion of thinking is precisely to determine how sensation and thinking are

distinct. He seeks to show that Aristotle distinguishes between types of thinking which have no clear parallels in sensation: apprehensive thinking, which concerns objects of thought with matter, and autonomous thinking, which concerns objects without matter. He locates a further disanalogy in Aristotle's distinction between fallible and infallible thinking in *DA* III. 6.

37. Of special interest to Aristotle's English-language readers is the appearance of a translation of Brentano's classic study *Die Psychologie des Aristoteles* (1867/1977). Although he both interprets and appropriates Aristotle's account of thinking in fertile ways, Brentano's discussions have been somewhat neglected. This may in part be due to the idiosyncratic character of his lively, developmental exegesis; however that may be, his discussions are philosophically animated, and engage Aristotle's texts so as to display the richness his framework holds for dealing with problems in intentionality. To see that this is so, one may consult Brentano's account of Aristotle's insistence that *nous* lacks an organ. As suggested, it is easy to interpret Aristotle's claim that mind cannot be mixed with the body as resulting from a narrow empirical shortcoming: Aristotle sought in vain to locate an organ of thought, and so inferred that the mind must be immaterial. In Brentano's hands (pp. 80–2), the argument is far subtler.
38. See Rist (1966) for a close account of *De Anima* III. 5. See also Hardie (1980, ch. 16). Perhaps the fullest discussion is Brentano (1867/1977). Brentano's succinct review of pre-twentieth-century views has been excerpted from Brentano (1867/1977) and published separately as Brentano (1992).
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