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On Separating the Intellect from the Body: Aristotle's De Anima III.4, 429a10-b5

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§ 1 Hylomorphism and Separable intellect

One of Aristotle's more fundamental theories within natural science is that of hylomorphism: the theory that natural, or at least living, things are form-in-matter. Birds, horses and humans are in some sense analogous to the snub: each is a this-in-this. So, just as the snub is concavity in a nose, a horse (a bird, a human,) is a (certain) form-in-(certain) matter. This basic theory plays a large role in Aristotle's De Anima (DA). In the DA, both when assessing various psychological capacities and when defining soul in general, Aristotle offers a hylomorphic account. He argues that soul is the form of the body: soul is the organization-for-the-sake-of-functioning of the body. (see DA II.1-3) And so he holds that various psychological capacities are forms insofar as each is an ability of a physiological organism so structured to function for the sake of its end(s). Thus, to describe his position rather loosely, Aristotle holds both that the soul of perception, or what is traditionally called the perceptual soul, is the form of our perceptual organs and that the soul of nutrification, or the nutritive soul, is the form of the digestive tract (together with the circulatory system).

A more thorough explication of Aristotle's account of perception will be of use here for understanding this doctrine. Later it will also be of service in assessing Aristotle's treatment of intellect. I will focus on vision, since among the various sense-modalities, this receives the most detailed treatment in the DA. Aristotle holds that the seat of vision is the ensouled eye insofar as the eye has the capacity to receive visible forms (without matter). (424a17-19 with 419a12-13) This means, as most scholars agree, that the eye suffers a physiological change through which the object of perception brings the agent to awareness of the object's visible qualities.¹ So far we can agree with Aristotle. We agree that perception requires physiological change. However, when it comes to the precise nature of the change involved in perception, we part ways with Aristotle. He thinks that the change is one of exemplification and not one of encoding. We, by contrast, think that it is one of encoding and not one of exemplification. Aristotle is a perceptual realist: he thinks that there is actually red out there in the world.² And so he thinks that when one sees red one's eyes go red (that is, the jelly (κόρη) within the eyes goes red). Part of the body literally takes on the perceptible quality in question: the change exemplifies the quality.³ We, or most of us, do not think that there is red out there in the world. We think that certain micro-physical interactions - described in terms of lightwaves and the activation of rods and cones - form the underlying material story of vision. We think that the physiological process of seeing is a process of encoding, rather than one of exemplifying. And so we think that when one sees red one's eyes undergo a material alteration, but they do not literally go red.

Although we will refuse to follow Aristotle on the details of his account of perception, we do tend to embrace the basic theory of hylomorphism. We think that living is being able to do certain things and that our actually doing something is, in principle, explained (at least in part) by reference to the body's doing something: I see with my eyes, I walk with my legs, and I think with my brain. So at first blush we are Aristotelians. However, it also turns out that when it comes to thought (which we think we do with our brains) Aristotle gives the curious appearance of not, himself, being an Aristotelian. Throughout the first two books of the DA he repeatedly gestures toward the possibility that intellect is separable from the body (see 403a10-11, 411b15-19, 413a12-15 & 413b24-27). And in the chapters of the third book that are devoted to the discussion of intellect (i.e. chapters 4 & 5), he flat out says "intellect is separable [...]" and "this intellect is separable [...] and unmixed [...]" (429b5 & 430a17).

By offering these claims, Aristotle puts us in an awkward position. Here we thought that we were Aristotelians and it turns out that by all appearances Aristotle, himself, is not an Aristotelian. The important question is: what are we to do with the seeming inconsistency? How is it that Aristotle can appear to be committed to hylomorphism as a general principle and yet also in the specific case of intellect appear to reject hylomorphism? This is a problem that has captured the attention of a number of contemporary scholars. The more popular strategies for dealing with this question are two: first, (1) we might argue that Aristotle's commitment to separable intellect arises directly out of his fascination with topics that lie outside of natural science. Second, (2) we might argue that the seeming problem is a merely seeming problem, one that can be explained away as issuing from a misguided approach to the text. In accordance with the first strategy, (1a) it has been argued that Aristotle's views on theology and ethics require that he treat intellect as separable.⁴ (1b) It has also been argued that, while writing the chapters on intellect in the DA, Aristotle was still a young student of Plato and thus offered an essentially Platonic account.⁵ In accordance with the second strategy, (2a) it has been argued that separable intellect is not in fact offered by Aristotle as separable from the body but only as separable in abstraction: as the rectangularity of a table is separable in abstraction from its material.⁶ (2b) It has also been argued that Aristotle is, perhaps, not concerned with human intellect when he makes certain claims to separability in the DA, rather he may be concerned with God itself (which, following one reading of Metaphysics XII.7 & 9, is wholly separate from the corporeal world).⁷

While these strategies may constitute fall-back positions they are far from ideal. Neither takes seriously Aristotle's general commitment in the DA to explore issues within the context of natural science. (see 402a4-7, 403b8-16 & 412a1-16) Ethics, for example, is not natural science.⁸ Nor does either strategy take seriously Aristotle's commitment in the DA to study the capacities of perishable beings.⁹ Neither rectangularity nor God is a perishable being (the former is a quality and the latter is not perishable).¹⁰ So, if we are to make sense of Aristotle's claiming in the DA that intellect is separable, we must (I think) find an interpretative strategy that takes into account the fact that the DA is a treatise on natural science (with all that this entails for Aristotle). Here I would like to propose a third strategy: (3) the seeming tension within the DA is just what it seems: a tension within the DA.¹¹ On the face of it this is to say very little (except to say that the tension cannot be explained away as issuing from a misguided approach to the text

[pace 2a & 2b]). However, in its simplicity this strategy opens up a line of investigation that is little explored. It suggests that the rationale for the doctrine of separable intellect is grounded in Aristotle's own commitment to the principles of scientific explanation (and so is grounded neither in certain peculiarities of his own personal history [pace 1b] nor in theories introduced and explicated in the rather remote treatises on ethics and theology [pace 1a]). This, then, is my deeper thesis: Aristotle is inclined to reject the hylomorphic account of intellect, because he is among other things a good natural scientist and the empirical facts (as he understands them) suggest that a hylomorphic account would be untenable.

In offering this view, I am placing the doctrine of separable intellect within a special category: doctrines which constitute exceptions to Aristotle's own general principles and yet are offered on the grounds of empirical considerations. This is not a category that I create ad hoc; for in addition to the doctrine of separable intellect, Aristotle has at least one other doctrine that falls within this category: the doctrine of spontaneous generation. In the Generation of Animals (GA), a work on natural science, Aristotle sets out the theory that certain creatures, most notably shellfish (and certain crustaceans), do not come-to-be out of a process of re-production via existing mature members of their species, but come-to-be out of purely material causes, for example out of the bubbling of sea-water and mud in the hot sun. (GA 762a18-32; cf. Metaphysics VII.9, 1034b3-7) This doctrine is an exception to Aristotle's own standard view of how living things come-into-being. On the standard view, the form of the nascent creature is that which is passed on from its parents (or parent) through the re-productive process: there are chicks, owing to the natural activities of chickens, and there are kids, owing to the natural activities of goats.

However, in his own researches, Aristotle finds that certain facts cannot be explained on the model of re-production. First, he takes it as a fact that barnacles have come-into-being off the coast of Rhodes where nothing of the kind had previously existed. (GA 763a26-33) Second, he takes it as a fact that when a large group of oysters were moved out of their muddy environment on the island of Lesbos to areas where mud does not collect (owing to fast-moving tides) they did not become more numerous, but only increased in size. (GA 763a33-b5) The facts, then, (as he sees them) are that barnacles arise without having parents and populations of mature oysters (i.e. prima facie potential parents) do not generate offspring (no matter how long they are left to their own devices). The facts cannot be explained on the standard model and so, in order to save the appearances, Aristotle accounts for them by offering the doctrine of spontaneous generation. It is as an empirical scientist that Aristotle introduces this doctrine. Thus, one lesson that we may draw from his discussion of the generation of animals is that Aristotle is not timorous of acknowledging what the data of experience seems to require and he will offer theories governing special-cases, even when such special-case theories are in opposition to his own standard view. Here I want to suggest that this lesson can be applied to the doctrine of separable intellect. Let us now turn to an examination of the relevant passages.¹²

Aristotle opens the chapter both by indicating that he is making a fresh start (discussing a new topic) and by indicating that certain methodological principles will govern his investigation into the nature of intellect. He states,

Concerning the part of the soul by which it both knows and thinks, [a] whether it is separable in respect to extension or is not, but is <only> separable in respect to <its> account, [b] we must consider what differentia it has and [c] <we must consider> how thinking ever comes to be. (429a10-13)

Section [a] is formulaic. The question of whether a given faculty is separable in respect to extension or in respect to account is Aristotle's standard way of marking the start of a fresh analysis of a given psychological faculty.¹³ Section [c] provides faint signs of Aristotle's concern that the study of intellect may pose its own unique problems (and perhaps not fit the standard model: hylomorphism).¹⁴ It is section [b] that provides the reader with the important sign concerning methodology. In his investigation Aristotle will display the differentia of intellect: he will identify the distinguishing characteristics of noetic activity. Thus, in the investigation he will follow his standard mode of scientific investigation, as is both sketched in DA I.1¹⁵ and set out more fully in the Posterior Analytics (APo). He will proceed from what is more knowable to us (at an early stage) to what is more knowable by nature: he will begin by identifying a number of the properties of that which he is studying and then attempt to explain how these properties can jointly obtain: he will gather the data and infer to the best explanation. In so doing, he will approach knowledge of the essence of that which he is investigating (here intellect). And he will approach this knowledge, because it is the essence of a thing that explains its properties. (see APo 76b11-23)

§ 3 Characteristics of Intellect: De Anima III.4, 429a13-b5

Aristotle now embarks on his positive investigation into the nature of intellect by introducing two of its distinguishing characteristics. First (1), intellect (being a cognitive faculty: a faculty that judges; see 418a14, 422a21, 424a5, 426b10, 427a18-20 & 432a16) is in rough outline formally akin to perception. Second (2), unlike perception, intellect grasps all things. Characteristic (1) has already received some treatment earlier in the DA. Regarding this characteristic, Aristotle now states,

Of course, [d] if thought is like perception, then it will be a sort of being acted upon by the object of thought or something else of this sort. [e] Thus it must be unaffected (ἀπαθές) and receptive of the form (δεκτικὸν δὲ τοῦ εἶδους), that is it will be potentially such as this but not this, and as the faculty of perception is related to the objects of perception so will intellect be similarly related to the objects of thought. (429a13-18)

In DA II.5 Aristotle claims that perception and intellect each have an ἐνέργεια, an actualization that is a perfection of a nature. From this it follows that active thinking does not require an alteration (ἀλλοίωσις) or, if it does, its alteration cannot be of the sort which brings about a change away from a nature. (417b9-16) In this respect intellect, along with perception, is unaffected (ἀπαθές¹⁶). Further, he claims that perception requires a being acted upon, a being affected, through which the faculty (or organ) becomes like its object. (417a18-20) In DA II.12, he describes this being acted

upon as a reception of (perceptible) form without matter. (424a17-21) (This reception of form is (in part) the process of coming to exemplify the perceptible quality.) Finally in II.5, he marks an important dissimilarity between perception and thought: while the efficient cause of perception is always outside of the perceiver, that of intellection can be internal; for, once we have acquired concepts, we are able to think on our own whenever we wish. (417b19-28) In our passage (429a13-18, quoted above), Aristotle reminds the reader of the specific formal similarities (and dissimilarities) between perception and intellect introduced in II.5 and further indicates that the II.12 refinement of the account of perception will have an analogue in the account of intellect. In section [d], instead of identifying the object of thought as the efficient cause, he shows that a more refined account may be needed: it is perhaps “something else”, not the mere object of thought, that is the efficient cause of thought. In section [e], he shows that both the II.5 position that thought is unaffected and an analogue of the II.12 refinement for the account of perception will be at play in shaping his theory of intellect: just as perception is a reception of form, so is intellection.¹⁷

Characteristic (2) - intellect grasps all things - appears to be new in the DA (although, as we shall see, it is in keeping with a methodological principle that is set forth earlier in the DA). Aristotle now introduces this characteristic and begins to draw out the implications of its conjunction with characteristic (1). He states,

Thus, since [f] it thinks all things, [g] it must be unmixed, just as Anaxagoras says, in order for it to rule, that is in order for it to know [h] for the alien <form> present along with it hinders and obstructs it [...] (429a18-21)

The claim in [f], that intellect grasps all things, is in harmony with a methodological principle that Aristotle develops in DA II.4: the faculty-function-object condition (FFO condition).¹⁸ In that chapter, Aristotle asserts that activities and functions are prior in account to faculties and that objects are prior in account to activities and functions. (see 415a14-22) The FFO condition, then, requires that a psychic faculty be defined in terms of its function and its function in terms of its objects. It follows analytically from this condition that intellect is receptive of the objects of intellect: intellect (*voûs*) is the faculty that is receptive of intelligible objects (*νοητὰ*) and any object that is not of the sort to be received by intellect is not an intelligible object. However, this alone gives us no insight into the nature of object of thought: the FFO condition is a general principle guiding the explanation of any given psychic faculty and, as such, it leaves object of thought open as a placeholder which must be given content from elsewhere.¹⁹ So, while the FFO condition helps us to see that Aristotle’s claim, in [f], amounts to the assertion that thought thinks all objects of thought,²⁰ we must look beyond the FFO condition in order to better assess the implications of the claim.

Aristotle does not (in the DA) offer a precise account of the shared nature of objects of thought, but he does offer a broad classification of such objects. He holds that to think is to be fully active in respect to knowledge and that knowledge (in the strict sense) is of universals. (417b16-23) Thought, then, (in the strict sense) is of universals. Further, he holds that we entertain universals from within the three subaltern genera of the intelligible: the theoretical, the practical, and the productive.²¹ As theoretical thinkers, we entertain those

universals which are the objects of mathematics (the objects of arithmetic, geometry, etc.), natural science (the objects of botany, zoology, etc.), and metaphysics. As practical thinkers, we entertain universals pertaining to human conduct (in the areas of political science, household management, etc.). And as productive thinkers, we entertain those universals which are the objects of the creative disciplines (the objects of carpentry, medicine, etc.). Thus, for Aristotle, the objects of thought constitute a rich, complex and diverse group. And so one implication of the claim that intellect grasps all things is that intellect must have the power, breadth of reach and adaptability of functioning that is requisite for coming to grasp all objects from within this varied group.

In our passage (429a18-21, quoted above), Aristotle brings the model of reception of form to bear on the notion that intellect grasps all things: he works within the project of inferring to the best explanation by assessing how it is that these two characteristics can jointly obtain within intellect. Ultimately, the main issue is how to accommodate the power, breadth and adaptability of intellect within the model of reception of form which, in the case of perception, brings with it a number of forceful constraints. Thus, in order to assess the arguments by which Aristotle attempts to resolve this issue, we must first make explicit the nature of the constraints that are imposed by the model of reception of form in the case of perception.²² Here the model imposes three constraints.

Constraint (1): in respect to the successful reception of particular forms, the organ of perception must be by nature trans-formal: its nature must be such that it does not exemplify any of the forms that it is in principle capable of receiving. This constraint is operative in different ways for different types of sensory modalities. For the distal senses (sight, hearing and smell), the constraint demands that each organ be wholly free of any of the forms which it could in principle receive (or exemplify). The eye, for example, must be colorless, if it is to come to exemplify its special objects: if the eye is to go red (or green or blue), it must in its natural state be without color (it must be transparent). For the proximal senses (the modalities of touch: touch and taste), the constraint demands, not that each organ be entirely free of any of the forms which are among its special objects, but that, since the organ itself must exemplify certain tactile qualities, it must lack the capacity to receive a form which it is currently (by nature) exemplifying. (So, one cannot come to the tactile awareness of the temperature of an external object, if its temperature is the same as the temperature of one's body; for, if one currently exemplify that temperature, one cannot come to exemplify it: one cannot receive what one already has.) So, the proximal senses will have blind-spots. (see DA 423b30-424a10)

Constraint (2): in respect to the scope of a particular organ of perception, the material constitution of each organ limits it to the capacity to come to awareness of only a particular species of the perceptible (we see with our eyes, we hear with our ears: but we neither hear with our eyes nor see with our ears). Each organ is formed for the purpose of functioning for the sake of its own (limited) end and so the matter of each organ is specifically suited to the organ's being able to so function. The matter of each sense organ is not suited to function for the sake of the (limited) ends of any other sense organ.²³

Constraint (3): in respect to the failure to receive particular forms, each organ, because of the nature of its material constitution, will lack the capacity to receive certain specifiable perceptibles within its own modality. While animal species will differ in respect to the range of the perceptibles of which they can become aware (e.g. Laconian hounds have a keener sense of smell than humans (GA 781b2-13) and humans have a keener sense of touch than any other creature (DA 421a21-23)), each species must, in respect to each sensory modality (which it possesses), have a limited range. The range of a given organ will be limited in a number of ways: an object will go unperceived, if (type a) it is too distant from the perceiver (this, of course, will apply only to the distal senses), or (type b) if it is too faint, or (type c) if it is too intense. In addition, certain parts of perceived objects will go unperceived, if (type d) they are too rich in minute detail. One of these sorts of failure (to perceive) is not a failure of the organ per se. Failure to perceive distant objects (type a) is both a function of the external medium (one cannot see as far on a foggy day as on a clear day) and a function of the shape of certain bodily parts that are associated with perception. (So, Laconian hounds have a keener sense of smell, because they have long nostrils and quadrupeds can hear more distant sounds than can birds, because the latter have only the auditory passage, while the former have this and the (external) ear as well; see GA 731a14-21 with PA 657a12-24.) The remaining sorts of perceptual failure are failures of the organ per se. One fails to see minute detail (type d), because no sense organ can be perfect in its purity (no organ is a perfect mirror of the outside world²⁴). One fails to perceive faint perceptibles (type b), because these lack sufficient causal power to bring about an alteration within the organ of perception. (GA 779b35-780a9) And one fails to perceive (certain) intense perceptibles (type c), because the intense alteration which these bring about in the organ ruptures its material constitution and destroys it. (see DA 435b13-15) Connected with these last two types of failure (types b & c) is the additional failure to perceive relatively faint perceptibles, after perceiving relatively intense ones. (type e) This failure is due to the lack of sufficient causal power in the faint perceptible to bring about an alteration within the organ, given the presence there of an intense alteration, brought about through the prior agency of an intense perceptible. (see DA 429a31-b3 & GA 780a10-13) These, then, are the constraints imposed by Aristotle within the study of intellect owing to its kinship with perception.

Let us now examine Aristotle's assessment of the impact which these constraints have upon the characteristic that thought is capable of thinking any object of thought. In section [h], Aristotle brings constraint (1) to bear on the characteristic: he supposes that if intellect were to possess a form prior to thinking, then this form would hinder its ability to receive its objects.²⁵ And he infers that, since intellect is capable of receiving any intelligible object, it must be formless, yet capable of receiving forms. In section [g], he draws a tentative inference from the conclusion that intellect must not possess a form: he asserts that intellect is, as Anaxagoras says, unmixed.²⁶ This tentative inference to the claim that intellect is unmixed is strengthened just a few lines later, when Aristotle states,

[i] So, it is reasonable (εὐλογον) to consider it [intellect] not to be mixed with the body; [j] for <if it were>, it would come to have some quality, <like> either cold or hot, and [k] it would even have an organ, as the perceptual faculty does; but now intellect has no organ. (429a24-27)

In section [j], Aristotle supplies the candidate qualities - hot and cold - to further illustrate the impact of constraint (1). If the organ of intellect were mixed with the body, it would have certain perceptible qualities, say hot or cold, and thus its ability to receive its objects could be limited: it might fail to have the capacity to think all things insofar as it might suffer from blind-spots. This consideration does not force Aristotle to embrace the view that intellect is not mixed with the body. It is the proximal sense modalities alone that have blind-spots (owing to the necessary presence of tactile qualities within their respective organs). The distal senses are not constrained in this way. Thus, since Aristotle has not argued in support of the view that intellect is somehow more akin to the proximal sense modalities than to the distal ones, his exploration into the issue of how constraint (1) impacts upon the notion that intellect grasps all things generates no conclusive result.²⁷ At this stage in the larger investigation, Aristotle is building a case which suggests that intellect is separable from the body. He has not unearthed conclusive support for the thesis.

In section [k], Aristotle brings constraint (2) to bear on the notion that thought thinks all things. If intellect were instantiated in a material organ, it might be limited in scope: it might be limited to the reception of one subaltern genera of the intelligible as opposed to the others (as each organ of perception is limited to one sensory modality as opposed to the others).²⁸ This consideration suggests that intellect is unmixed with the body. But as section [i] makes clear, Aristotle is not committed (at this stage) to the notion that thought is unmixed (or separable). At this stage he considers the view to be reasonable (εὐλογον): he holds it to have a certain plausibility.

It is constraint (3) which, for Aristotle, most forcefully suggests (and all but conclusively supports) the thesis that separability is (part of) the essence of intellect. Aristotle states,

[l] That the unaffectedness of the perceptual faculty differs from that of the intellect is made manifest upon <a consideration of> the organs of perception and perception <itself>. For the perceptual faculty loses its ability to perceive after <exposure to> an intense perceptible, as with sound after big noises, and after strong colors and smells <it is> neither able to see nor able to smell; but whenever intellect thinks some intense intelligible, it is not less able to think the inferior ones, rather it is better able to do so; [m] for the perceptual faculty is not without the body, but intellect is separable <from the body>. (429a31-b5)

In section [l], Aristotle asserts that the cognition of intense intelligibles, far from impeding our ability to think inferior ones, seems to make us better able to think them. This is in marked contrast to the data on perception; for, when we perceive intense perceptibles our ability to perceive faint ones is impeded (constraint 3, type e). The distinction that Aristotle offers here between intense and inferior objects of thought is the same distinction that he

develops in Metaphysics I.2 between more accurate (ἀκριβέστερον) or superior (ἀρχικωτέρων) knowledge and subordinate (ὑπερετούσης) knowledge. In Metaphysics I.2 he claims that the most accurate or most knowable objects of thought are first principles and causes. Further, he claims that it is through knowledge of these that the particulars which fall under them come to be known. (see 982a13-18; cf. APo 72a26-38). Thus, in section [l], Aristotle points to a conspicuous fact about our cognitive lives: when we know principles and causes within a given domain we are better able to judge other things which fall within that domain. It is clear that, in this respect, intellect cannot be governed by constraint (3). It cannot be so governed, because one consequence of this constraint is that material instantiation leaves a faculty vulnerable to the destructive forces of intense objects. Intellect, unfazed in its command of principles and causes, lacks one important sort of affectedness that is suffered by perception and this lack of affectedness, Aristotle suggests, is due to intellect's having an immaterial nature. So, Aristotle infers (in section [m]) that intellect is separable from the body: intellect, with its power, breadth and adaptability of functioning, is (unlike its kindred faculty: perception) unmixed and separable, not the actuality of any part of the body whatsoever.

From our investigation, it is clear that the (initial) project of DA III.4 fits squarely within Aristotle's standard methodology of scientific investigation. He shows that there is a topic of investigation: intellect. He introduces distinguishing characteristics: intellect is formally akin to perception and it grasps all things. And he infers to the best explanation, offering the only account which seems to explain how these characteristics jointly obtain: he saves the appearances by separating the intellect from the body. So, it is his standard scientific methodology which, together with the empirical facts, draws Aristotle towards a special-case theory for intellect: a theory that is in opposition to his own general theory for explaining psychological capacities (hylomorphism).

§ 4 **Getting the Facts Right: A Moral**

Aristotle seems to have the facts on intellect wrong. First, he has the data on perception wrong (the material process of perception is one of encoding and not one of exemplification) and for this reason he mistakenly supposes that if intellect were mixed with the body this would require that thought be a process of exemplification (in the appropriate organ) rather than a process of encoding. The merits of an encoding thesis, in contrast with an exemplification thesis, are that it would allow Aristotle to do away with the problem of blind-spots (since what exemplifies a quality can also encode it) and it would allow him to circumvent the problem of intense intelligibles (since the encoding of an intense object need not itself involve intense material changes). However, Aristotle is clearly worried both about the possibility of blind-spots and about the problem of intense intelligibles. So, we cannot suppose that he gives any serious consideration to an encoding thesis within this investigation.²⁹

Second, Aristotle mistakenly takes the linguistic parallel between intense objects of perception and intense objects of thought to imply that if intellect were mixed with the body there would also be a problematic physiological parallel between the affectedness of active perception and the affectedness of active thought. In the

Topics, he warns his own students to be on the lookout for this very sort of inferential error. In the context of discussing the role of homonyms in dialectic Aristotle warns that the same term may in different circumstances have different contraries and that this shows that a term occurring in two such circumstances will not have the same meaning in each. (see Topics 106a1-23) In the Topics, his example is the sharp (ὀξύς). Its contrary in respect to music is the flat (βαρύ), but its contrary in respect to matter is the dull (ἀμβλύ). Accordingly, Aristotle claims that sharp does not have the same meaning in respect to music as it does in respect to matter. Now, in DA III.4 Aristotle uses the same term (σφόδρα) for the intensity of both perceptibles and thinkables. However, he does not use the same term for their respective contraries. The inferior intelligibles are said to be ὑποδεέστερα, while the weak perceptibles are said to be either ἄσθενής or μικρός. He never terms the former ἄσθενής or μικρός and he never terms the latter ὑποδεέστερα. This might suggest that intense does not have the same meaning in respect to perception as it does in respect to thought. For this reason, Aristotle should be more cautious about the implications of the linguistic parallel between σφόδρα thoughts and σφόδρα perceptibles.

Finally, it is unfortunate that in assessing the impact of constraint (3) upon the thesis that intellect grasps all things Aristotle draws only a comparison between thought and perception as full actualities. For, while knowledge (already won) of causes and principles does make it easier to properly judge other things, the process of coming to win over such knowledge (of principles and causes) is often both painful and fatiguing. And, even though Aristotle does elsewhere acknowledge this fact (see Metaphysics II.1, 993b9-11), it is clear that its further consideration in the DA would suggest a revision of the theory of intellect. Exposure to intense perceptibles is physiologically taxing, but then so is the process of coming to learn principles. This physiological parallel between affectedness in perception and affectedness in thought suggests that the general theory for explaining psychological capacities (hylomorphism) may in the end be adequate as a model for explaining thought. At the least it suggests that thought has a greater degree of kinship with perception than Aristotle acknowledges in the opening section of DA III.4.

In light of this investigation one could argue for the restoration of the account of intellect to Aristotle's standard model (hylomorphism) on grounds that make use of Aristotle's own scientific methodology: one could argue that, once we get the facts right, a plausible, and substantially Aristotelian, hylomorphic account of intellect becomes available to us. However, when we consider the obvious difficulties with the argument for the separability of intellect (not necessarily Aristotle's failure to consider an encoding thesis for thought, but certainly his reliance on the linguistic parallel between intense perceptibles and intense intelligibles), together with the hypothetical nature of the beginning of the argument (at 429a13) and the larger context in which the argument is placed, another moral suggests itself. It may that Aristotle develops the theory of separable intellect as a problem

which demands further discussion: it may be that, while Aristotle is initially drawn (for scientific reasons) towards the view that intellect is separable, he (ultimately) strives towards a more hylomorphic account.

Aristotle is clearly aware that the theory of separable intellect is not without its own difficulties. One difficulty is that of how intellect is to come to possess its objects. These objects first exist (potentially) in material things, but material things (it would seem) share no underlying generic sameness with separable (immaterial) intellect. So, upon consideration of his own account of agency and patiency, which requires that agent and patient hold something in common (see Generation and Corruption I.7), it becomes unclear to Aristotle how it is that separable intellect, having nothing in common with anything else, is to ever come to think. (see DA III.4, 429b21-26)³⁰ Aristotle, then, is not entirely at ease with the theory of separable intellect. Further, it is plausible that part of his later discussion of intellect (in DA III.5-8) is aimed at resolving problems within his initial account and it is plausible that he aims at resolving these problems by establishing the dependence of thought upon the body. In DA III.5, Aristotle introduces the active intellect and the passive intellect. These, on one plausible interpretation, are the efficient and material cause of thought respectively. Aristotle does not claim of passive intellect, as he does of active intellect, that it is separable, rather he claims that it is perishable. (see 430a17 & 430a4-25) This suggests that passive intellect is more closely linked with the body than is active intellect and this, I take it, is a sign that Aristotle strives towards a more hylomorphic account of intellect in DA III.5. Further, in DA III.7-8, Aristotle argues for the thesis that episodes of thought are dependent upon the use (or activation) of images (φαντάσματα). Images are, for Aristotle, material items stored in the common sensorium. (see De Memoria 450a26-b11) So, this thesis requires that material change (bodily change) is a necessary condition for episodes of thought.³¹ This, I take it, is a sign that Aristotle strives towards a more hylomorphic account of intellect in DA III.7-8. So, both in DA III.5 and DA III.7-8 we find elements within Aristotle's discussion of intellect that suggest he ultimately strives to ease the tension between his initial account of intellect in DA III.4 and his standard model for explaining psychological capacities (hylomorphism). The question of whether Aristotle succeeds in resolving this tension must, however, be left for another day.³²

¹ Myles Burnyeat has argued that, for Aristotle, there is no physiological change (or material alteration) involved in the process of perceiving. See his "Is an Aristotelian Philosophy of Mind Still credible? A Draft", in Nussbaum and Rorty, Essays on Aristotle's De Anima, Clarendon Press, Oxford (1992), pp.15-26, and "'Aristote voit du rouge et entend: combien se passe-t-il de choses? Remarques sur le De Anima, II, 7-8'", Revue Philosophique, 1993, n.2, pp.263-280 (This paper has also been published in English as an Additional Paper, "How much happens when Aristotle sees red and hears middle C?", in the 1995 paperback edition of Nussbaum and Rorty, pp.421-434.) I have argued against Burnyeat's thesis in my "Material Alteration and Cognitive Activity in Aristotle's De Anima", Phronesis, XLI (1996), n.2, pp.138-157. T. K. Johansen argues in support of Burnyeat's thesis. See his Aristotle on the Sense-Organs, Cambridge University Press, 1998. Also see my review of Johansen in Classical Review (forthcoming 1999).

² Aristotle defines color as follows: "[...] color is universally capable of exciting change in the actually transparent, that is, in light; this being, in fact, the true nature of color". (418a31-b2; trans. Hicks) This suggests that color is not a secondary quality (in Locke's sense) and that it has causal powers.

³ This exemplification thesis has been forcefully argued by Richard Sorabji. See both his "Body and Soul in Aristotle", *Philosophy*, 49 (1974), pp.63-89; and his "Intentionality and Psychological Processes: Aristotle's Theory of Sense-Perception" in Nussbaum and Rorty, 1992, pp.195-225. Stephen Everson has argued in support of the exemplification thesis in his *Aristotle on Perception*, Oxford University Press, 1997. I discuss Everson's principal arguments in my "Alteration and Quasi-Alteration", *Oxford Studies in Ancient Philosophy*, XVI (1998), pp.331-352. The opposed encoding thesis has been argued by Deborah Modrak (*Aristotle: The Power of Perception*, University of Chicago Press, 1987) and Jonathan Lear (*Aristotle and the Desire to Understand*, Cambridge University Press, 1988).

⁴ Kathleen Wilkes, *Physicalism*, Humanities Press, 1978. See especially pp.115-116.

⁵ Werner Jaeger, *Aristotle: Fundamentals of the History of his Development*, Oxford University Press, 1934, pp.332-334 and W.D. Ross "The Development of Aristotle's Thought", *Proceedings of the British Academy*, 43 (1957), pp.65-67.

⁶ Michael Wedin, *Mind and Imagination in Aristotle*, Yale University Press, 1988, especially chapter 5. Wedin's thesis directly concerns the active intellect of DA III.5. However, since Wedin holds that the discussion in DA III.5, constitutes a refinement of the account in DA III.4, he is committed to the view that Aristotle explains the thesis (argued for in III.4) that intellect is separable in terms of the separability of active intellect (in III.5).

⁷ Jonathan Barnes, "Aristotle's Concept of Mind", *Proceedings of the Aristotelian Society*, 72, (1971-72), pp.101-114.

⁸ One element within the groundwork of Aristotle's ethical system in his psychological theory (see *Nicomachean Ethics* (NE) I.7 & I.13). So, while Aristotle's psychology is not dependent on his ethics, his ethics is (in part) dependent on his psychology.

⁹ In DA II.3, Aristotle sets out a hierarchical nesting of the psychic capacities. He holds that all perceivers must function nutritively and that all thinkers must function perceptually. (see 414b28-415a13) This nesting shows that within the DA Aristotle is not interested in accounting for the life of God, since his God (that is, his prime mover) is neither capable of perceiving nor capable of functioning nutritively. (see *Metaphysics* XII.9)

¹⁰ Wedin argues that the separability of active intellect is akin to the separability of mathematical objects: active intellect is not actually separate from matter, but it can be thought of as if it were. (see Wedin, 1988, pp.191-193) In *Metaphysics* VI.1, Aristotle claims that mathematical objects can be thought of as if they were changeless (*ἀκίνητα*) (1026a9). Further, he glosses 'changeless' with 'eternal' (*αἰδιον*) (1026a9-10). Wedin asserts that this is the sort of eternality that Aristotle ascribes to active intellect (at DA III.5, 430a23). There are at least two problems with this view. First, Aristotle does not claim that active intellect is *as-if* eternal, he simply says that it is eternal. Second (and more importantly), active intellect is the efficient cause of thought. (This is required by Aristotle's claim that active intellect is related to passive intellect as art is related to matter; see DA III.5, 430a10-13.) Active intellect, thus, plays a role in the pursuit of an end (*τέλος*). Abstractions, however, do not seek an end. (see *Parts of Animals* (PA) I.1 641b11-15) They are not productive. Thus, active intellect cannot be adequately understood as an abstraction.

¹¹ This does not imply this same tension cannot be found elsewhere in the Corpus. It can be found in the *Generation of Animals* (GA). In GA II.3, Aristotle asserts that the principle of all soul, except intellect, is not without matter, while intellect enters the developing fetus, not via a material vehicle, but "from outside". (737a8-10) His rationale for this assertion seems to be the bald declaration that "no bodily activity has any connection with the activity of reason". (736b27-28) If we are to find an argument in support of this view, I suspect we shall find it in DA III.4.

¹² In the remainder of this paper, I offer an account of those passages from DA III.4 that are crucial to understanding the rationale behind the doctrine of separable intellect: my focus is on 429a10-b5. I do not offer anything approaching an exhaustive account of the chapter.

¹³ In DA III.9, Aristotle begins his treatment of the faculty of desire by asking "whether it is some one part of the soul, which is separable in respect to extension or in respect to its account or whether it is the whole soul" (432a19-21) and in DA II.2, after offering what is his ultimate definition of soul, he introduces an account of various psychic faculties by noting that "whether each one of these is a soul or part of a soul and, if a part, whether it is only separable in respect to its account or is separable in respect to place also is a question [...]" (413b13-15).

¹⁴ It should be noted that this section carries greater force than is suggested by some of the modern English translations. Aristotle does not simply state that it is an aim of his discussion to explain the process of thinking: he does not write "σκεπτέον [...] πῶς γίνεται τὸ νοεῖν" - "we must consider [...] how thinking comes about" - as is sometimes suggested. (This is Hicks' translation. Hett fares no better with his "how thinking comes about".) Rather he writes "σκεπτέον [...] πῶς ποτὲ γίνεται τὸ νοεῖν"; his aim is to consider how it is that we *ever* come to think. He is already concerned that his standard model will not apply in the case of intellect.

¹⁵ In DA I.1, Aristotle claims that knowledge of attributes (and properties) is an aid towards gaining knowledge of essence (402b21-22) and he indicates that the search the essence (or definition) will appropriately begin with an account of attributes (402b22-25). Further, he claims that the mark of whether a definition is scientific (i.e. non-dialectical) is whether it leads to knowledge of attributes (402b25-403a2).

¹⁶ Aristotle does not actually use the word ἀπαθές in II.5. Rather he claims that intellect should be said not to suffer (οὐδὲ πάσχειν; 417b13-14). This is equivalent to the claim that intellect is ἀπαθές.

¹⁷ My account makes it seem as though [d] and [e] are simple assertions. But this is not the case: [d] is a conditional statement and the description of intellect that I have offered is gleaned from the consequent clause in [d] and from [e], which is also dependent upon the antecedent in [d]. Thus my account relies on the assumption that Aristotle implicitly asserts the antecedent of [d]. One might argue that this supposition is not justified. It could be that the conditional structure of [d] is a sign of trepidation (on Aristotle's part) over whether intellect is in fact like perception. I suggest that Aristotle is at the beginning of III.4 unsure about how far the analogy with perception will take him and he is in some way unsure about the conclusion he draws from the analogy, but he is not worried about whether perception and intellect are akin in the specific ways that are addressed in [d] and [e]: nowhere in the DA does he reject either the notion that thought is a sort of being acted upon or the notion that it is a reception of form (although, in III.5 he suggests that thought is not simply a sort of being acted upon and that the efficient cause of thought goes beyond the mere reception of form). Aristotle begins his discussion of intellect with a conditional statement because he is going to set out an important disanalogy between perception and intellect (at 429a29-b5) and so he wants to be careful not to appear to think that the two are in all respects analogous. (Here we should also note that some of Aristotle's predecessors took perception and intellect to be the same faculty; see DA III.3, 427a21-29.)

¹⁸ On the FFO condition, see Wedin, 1988, pp.13ff.

¹⁹ In the same manner the FFO condition leaves object of perception (αἰσθητόν) open as a placeholder which must be given content from elsewhere. Aristotle provides this content in DA II.6-11, where he offers accounts of the various sensory modalities, beginning in each case with a treatment of the objects that fall within each modality.

²⁰ I would also suggest that "πάντα" at 429a18 picks up on "τὰ νοητά" which comes earlier in the same line. If this is correct, then "thought thinks all things" quite straightforwardly means "thought thinks all objects of thought". I would like to thank Derek Kershaw for bringing this point to my attention.

²¹ See *Metaphysics* VI.1 and *Nicomachean Ethics* VI.1-7.

²² Christopher Shields has recently emphasized the importance of bringing the distinction between encoding and exemplifying to bear in assessing Aristotle's treatment of intellect. (See his "Intentionality and Isomorphism in Aristotle", *Proceedings of the Boston Area Colloquium on Ancient Philosophy* (BACAP) XI (1997), pp.307-330) Shields holds that the distinction itself derives from Brentano's treatment of the difference between taking on a quality physically and taking on a quality objectively. (Shields, p.319) Martin argues that the distinction between encoding and exemplifying is not the distinction that concerns Brentano. (See his "Commentary on Shields", BACAP (1997), pp. 331-334.) Whether or not the distinction has a heritage in Brentano is of no consequence to the modern debate. Encoding and exemplification theses have been important foci in the contemporary debate over Aristotle's theory of perception. (See note 3, above.) And, given that Aristotle many times claims that perception and thought are similar, it makes perfect sense for us, in studying Aristotle's account of thought, to consider the possibility that theses of encoding or exemplification play a role in Aristotle's analysis.

²³ One might argue that this cannot be a legitimate Aristotelian constraint, since Aristotle requires that the matter of an organ possess the same property that the external medium possesses in virtue of being the medium (the eye must be transparent, etc.) and this property can be realized in a number of sorts of matter (both water and air are transparent, etc.). Thus, (it may be argued) Aristotle is open to the conceptual possibility that not only could eyes be made of either air or water, but the same (say) watery organ could be both an eye and an ear. (This finds additional support on the traditional reading of DA III.1. For a persuasive attack on the traditional reading see Tim Maudlin, "De Anima III 1: Is any Sense Missing?", *Phronesis*, XXX (1986), n.1, pp.51-67.) However, there are clear indications that Aristotle requires much more of the matter of an organ than that it be akin to the relevant medium. In the *De Sensu* (DS) he argues that the eye must be composed of water and not of air, since water is more easily confined and controlled (see 438a13-17) and in the DA he suggests that the ear must be composed of air and not of water, since sound does not travel through water as well as it does through air (see 419b18-20). This shows that constraint (2) is a legitimate Aristotelian constraint.

²⁴ In DS 3, Aristotle claims that transparency is in fact not special to certain sorts of matter, rather everything is transparent in one degree or another (see 439a18-27). I take this to imply both that no thing is purely non-transparent and that no thing is purely transparent. From the latter it follows that no eye is a perfect mirror of the visible world.

²⁵ Aristotle's argument here is markedly similar to Anaxagoras' argument in support of the claim that intellect is unmixed. Anaxagoras states, "Mind [...] is mixed with nothing [...] for if it were not by itself, but was mixed with anything else [...] the things that were with it would hinder it so that it could rule nothing." (DK 59B12). In each of these arguments the unmixedness of intellect follows from the supposition that if it were mixed its capacity would be limited. Cherniss suggests that Aristotle is not justified in interpreting Anaxagoras' "ruling all things" to mean "knowing all things" (See his *Aristotle's Criticism of Presocratic Philosophy*, Cornell University Press, 1935, p.172, n.122). But one must question whether this is an apt criticism, for in DK 59B12 Anaxagoras does explicitly associate the ability of intellect to rule all things with its ability to know all things.

²⁶ For Anaxagoras this means that intellect has nothing in common with anything else, rather it is purely what it is and it is nothing else: intellect lacks any sort of material nature (see DK 59B12). One might argue that Aristotle is here simply embracing the theory of a predecessor and that he is thus not advancing an argument based on his own empirical and scientific concerns. I would reject this view for two reasons: (1) empirical considerations arising out of his assessment of the distinguishing characteristics of intellect are what bring Aristotle to tentatively embrace a neo-Anaxagorean theory and (2) in the second half of DA III.4 Aristotle suggests that Anaxagoras' own theory cannot be completely right, since it creates an unbridgeable gap between mind and its objects. (see 429b23-430a9) Aristotle's worry that Anaxagoras fails to explain how it is that we ever come to think is prefigured in DA I.2. (see 405b20-23)

²⁷ Christopher Shields mistakenly supposes that, if Aristotle's justification for the claim that intellect grasps all things is directed upon the range of its potential objects, then his overriding concern is with the problem of blind-spots. Accordingly, Shields argues that Aristotle's argument would rest on the thin observation that "if nous is structured, there will be one form it cannot acquire". (Shields, 1997, p.325; my emphasis) This consideration, Shields contends, does not seem forceful enough to motivate Aristotle's claim that intellect is separable from the body (especially when the form that intellect could not acquire would be the form that it already has and, thus, it would become unclear why intellect needs to acquire that form in order to think that very same form; see Shields, p.329). This is one reason why Shields rejects the view that it is a concern over the range of potential objects of intellect that motivates Aristotle's claim that intellect grasps all things. Aristotle, however, is concerned not only with the possibility of blind-spots (a constraint (1) concern). He is concerned with issues connected with constraint (2) and constraint (3). These concerns (as we shall see) do ultimately motivate his claim that intellect is separable from the body.

²⁸ Aristotle's claim that intellect has no organ (429a27) should not be taken simply as the (false) empirical claim that as a matter of observational biology no organ of thought has been found. (On this view it would be most peculiar of him to say that it is consequently (merely) reasonable to consider intellect to be unmixed with the body; see Shields 1997, pp.307-8 & 313-4.) Rather, Aristotle is arguing that, in light of his own assessment of the distinguishing characteristics of intellect, it is now unlikely that intellect has an organ.

²⁹ Pace Shields, 1997, pp.320-322 & 329.

³⁰ Aristotle attempts to solve this problem at the end of DA III.4. (see 430a1-5) Wedin is correct to argue that the solution proposed there is offered "strictly in terms of the language in which [...] [the problem is] [...] set". (Wedin, 1988, p.167) The solution fails to address the question of how it is that we come to think. It is only when Aristotle turns to the issue of the organization of intellect (in DA III.5) that a substantial response to the problem emerges. (see Wedin, 1988, pp.169-195) While I agree in broad outline with Wedin's assessment of the relation between DA III.4 and DA III.5, I disagree with much of his analysis of DA III.5. (see note 10, above) For an alternative account of the relation between DA III.4 and DA III.5, see Victor Caston, "Aristotle's Two Intellects: A Modest proposal" (forthcoming).

³¹ See my 1996, pp.147-157.

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